

## Comparison of Neutron Activation Analysis $k_0$ Data: Preliminary Results

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Second Co-ordination Meeting on  
Reference Database for Neutron Activation Analysis  
May 7-9, 2007  
IAEA, Vienna Austria

**Summary:** Recommended  $k_0$  factors [1,2] have been compared with those inferred from evaluated total thermal neutron capture radiative cross sections [3] and partial  $\gamma$ -ray cross sections measured with neutron beams at the Budapest Reactor [4]. The agreement between the  $k_0$  factors from these independent data sources is very good although the variations between them indicate that both the  $k_0$  and  $\sigma_\gamma$  databases can be improved by consideration of all data sources. The  $k_0$  database has been extended to include 4659 known  $\gamma$ -rays from 181 activation parents with half-lives greater than 1 ms. In the final phase of this CRP we will investigate discrepancies in  $k_0$  factors and adopt a recommended set of  $k_0$  values which will be included in the Evaluated Gamma-ray Activation File (EGAF).

**Discussion:** The Neutron Activation Analysis (NAA)  $k_0$  factors  $(k_{0,Au})_x$  for  $\gamma$ -rays emitted by activation products ( $x$ ) are defined relative to the Au comparator as,

$$(1) \quad (k_{0,Au})_x = [M_{Au}q_x s_{0,x} P_x] / [M_x q_{Au} s_{0,Au} P_{Au}]$$

where  $M$  is the atomic mass ( $M_{Au}=196.96655$ ),  $q$  is the isotopic abundance ( $q_{Au}=100$ ),  $s_0$  is the total thermal radiative cross section ( $s_{0,Au}=98.65$  b), and  $P$  is the  $\gamma$ -ray transition probability ( $P_{Au}=0.9554$ ).

De Corte *et al* [1,2] have measured  $k_0$  factors for the principal  $\gamma$ -rays from more than 130 isotopes and isomers with the gold comparator method. As shown in Eq. 1, total thermal radiative neutron cross sections can be determined from the  $k_0$  factors and the  $\gamma$ -ray transition probabilities  $P_g$ . The *Atlas of Neutron Resonances* [3] contains evaluated total thermal radiative neutron cross sections for all stable isotopes which can be combined with  $\gamma$ -ray transition probabilities to determine an independent set of  $k_0$  factors. Precise decay transition probabilities for many activation products are available from the Decay Data Evaluation Project (DDEP) [5], and the ENSDF database [6]. Another independent set of  $\gamma$ -ray thermal radiative cross sections  $s_0 P_g$  was determined at the Budapest Reactor [4] using thermal and cold neutron beams. The goal of this project is to compare the  $k_0$  and  $\sigma_0$  values provided in these independent evaluations, investigate discrepancies, and generate a new set of recommended  $k_0$  and  $\sigma_0$  values. The  $k_0$  database will be extended to include all  $\gamma$ -rays emitted by

activation products. These results will be added to the Evaluated Gamma-ray Activation File (EGAF) [7] disseminated by LBNL and the IAEA.

**Preliminary Results:** A total of 415  $k_0$  factors from De Corte *et al* [1,2] are compared in Table 1 with corresponding factors derived from total thermal neutron radiative cross sections in the *Atlas of Neutron Resonances* [3], evaluated  $P_g$  values [5,6], and 110  $s_0P_g$  factors measured at the Budapest Reactor. Agreement is generally excellent although some notable discrepancies need additional investigation.

$^{36}\text{S}$  –  $k_0(3103)$  varies from 68% (IUPAC) to 14% (Budapest) of the Atlas value. This may be due to variations in the  $^{36}\text{S}$  isotopic abundance, which is known to be significant for this isotope.

$^{70}\text{Zn}$  –  $k_0(122)$  and  $k_0(512)$  (IUPAC) are only 22% and 29%, respectively, of the Atlas value.

$^{110}\text{Pd}$  –  $k_0(172)$  is 41% (IUPAC) of the Atlas value. Other evaluated Atlas cross sections for palladium also appear to be systematically too high [8].

$^{112}\text{Sn}$  –  $k_0(255)$  for  $^{112}\text{Sn}(n,\gamma)^{113}\text{Sn}$  and  $k_0(392)$  for  $^{112}\text{Sn}(n,\gamma)^{113}\text{Sn} \rightarrow ^{113}\text{In}$  are both 68% of the Atlas value.

$^{124}\text{Sn}$  – all  $k_0$  values for  $^{124}\text{Sn}(n,\gamma)^{125}\text{Sn} \rightarrow ^{125}\text{Sb}$  are only 3% of the Atlas value.

$^{132}\text{Ba}$  –  $k_0(276)$  is 66% (IUPAC) higher than the Atlas value. The total  $^{132}\text{Ba}$  cross section is not well known and was reported with no uncertainty.

$^{190}\text{Os}$  –  $k_0(129)$  is 27% (IUPAC) of the Atlas value.

The total thermal radiative neutron cross sections  $\sigma_0$  determined from the BNL, IUPAC and Budapest data for 181 isotopes are shown in Table 2. In many instances improved cross section values are obtained from the IUPAC and Budapest data. A complete list of 4659  $k_0$  values calculated from the BNL cross sections and evaluated  $P_g$  data is shown in Table 3.

**Future plans:** In the final phase of this CRP the  $k_0$  and  $\sigma_0$  discrepancies will be investigated in coordination with CRP members and others. New measurements may be performed when necessary. The  $k_0$  data will be combined using standard statistical methods to obtain recommended factors for all activation product  $\gamma$ -rays. These results will be disseminated in version 2 of the EGAF database and distributed on the IAEA and LBNL nuclear data websites.

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[4] *Handbook of Prompt Gamma Activation Analysis*, ed. G.L. Molnar, Kluwer Academic Publishers, Dordrecht (2004).

[5] *Table of Radionuclides*, ed. M.-M. Be et al, Bureau International des Poids et Mesures, Pavillon de Breteuil, F-92310 Sevres (2004).

[6] Evaluated Nuclear Structure Data File, a computer file of evaluated experimental nuclear structure data maintained by the National Nuclear Data Center, Brookhaven National Laboratory.

[7] The Evaluated Gamma-ray Activation File (EGAF), R.B. Firestone, G.L. Molnar, Zs. Revay, T. Belgya, D.P. McNabb, and B.W. Sleaford, Proceedings of the 12th International Conference on Capture Gamma-ray Spectroscopy and Related Topics, eds. A. Woehr and A. Aprahamian, South Bend, IN, Sept. 4-9, 2005, 138-147 (2005).

[8] *Thermal Neutron Capture Cross Sections of the Palladium Isotopes*, R.B. Firestone, M. Krticka, D.P. McNabb, B. Sleaford, U. Agvaanluvsan, T. Belgya and Zs. Revay, Proceedings of the 12th International Conference on Capture Gamma-ray Spectroscopy and Related Topics, eds. A. Woehr and A. Aprahamian, South Bend IN, Sept. 4-9, 389-395 (2005).

**Table 1.** Comparison of IUPAC [1]  $k_0$  values with those derived from *Atlas of Neutron Resonances* [2], using evaluated  $\gamma$ -ray transition probabilities [4,5], and Budapest Reactor  $\sigma_0 P_\gamma$  measurements [3].

Isotope	Half-life	E <sub>g</sub> (keV)	k <sub>0</sub> Values						IUPAC/Atl	IUPAC/Bud	
			Atlas	±(%)	IUPAC	±(%)	Budapest	±(%)			Ratio
20F	11.07 ± 0.06	s	1633.602 ± 0.015	0.001046096	0.9	0.000998	1.2	0.00101	4.0	0.95 ± 0.02	0.99 ± 0.04
24Na	14.9574 ± 0.002	h	1368.626 ± 0.005	0.046993505	0.8	0.0468	0.6	0.04602954	1.5	1.00 ± 0.01	1.02 ± 0.02
24Na	14.9574 ± 0.002	h	2754.007 ± 0.011	0.046936404	0.8	0.0462	0.9	0.04602954	1.5	0.98 ± 0.01	1.00 ± 0.02
27Mg	9.458 ± 0.012	m	170.686 ± 0.15	2.90819E-06	12.6	0.00000302	1.0	0.0000027	14.8	1.04 ± 0.13	1.12 ± 0.15
27Mg	9.458 ± 0.012	m	843.76 ± 0.03	0.00026101	1.7	0.000253	0.4	0.000245	4.9	0.97 ± 0.02	1.03 ± 0.05
27Mg	9.458 ± 0.012	m	1014.44 ± 0.04	0.000101787	2.1	0.000098	2.0	0.000096	5.2	0.96 ± 0.03	1.02 ± 0.06
28Al	2.2414 ± 0.0012	m	1778.85 ± 0.03	0.017891857	1.3	0.0175	0.6	0.0172	1.2	0.98 ± 0.01	1.02 ± 0.01
31Si	157.3 ± 0.3	m	1266.15 ± 0.1	1.72058E-07	28.6	0.000000145	0.7			0.84 ± 0.29	
37S	5.05 ± 0.02	m	3103.36 ± 0.02	2.89158E-06	6.9	0.00000196	1.8	0.000014	0.5	0.68 ± 0.07	0.14 ± 0.02
38Cl	37.24 ± 0.05	m	1642.714 ± 0.016	0.00197203	3.4	0.00197	1.5	0.0014	21.4	1.00 ± 0.04	1.41 ± 0.21
38Cl	37.24 ± 0.05	m	2167.405 ± 0.009	0.002621131	2.9	0.00266	1.1	0.0018	11.1	1.01 ± 0.03	1.48 ± 0.11
41Ar	109.61 ± 0.04	m	1293.64 ± 0.04	0.034389011	1.5	0.0332	0.0			0.97 ± 0.02	
42K	12.36 ± 0.012	h	312.6 ± 0.25	1.76471E-05	6.3	0.0000159	1.3			0.90 ± 0.06	
42K	12.36 ± 0.012	h	1524.6 ± 0.3	0.00094958	2.1	0.000946	0.6	0.001021333	0.1	1.00 ± 0.02	0.93 ± 0.01
47Ca	4.536 ± 0.003	d	489.23 ± 0.1	9.56946E-08	23.0	9.14E-08	1.8			0.96 ± 0.23	
47Ca	4.536 ± 0.003	d	807.86 ± 0.1	9.56946E-08	23.0	0.00000092	0.2			0.96 ± 0.23	
47Ca	4.536 ± 0.003	d	1297.09 ± 0.1	1.09586E-06	13.7	0.000000954	0.2			0.87 ± 0.14	
49Ca	8.718 ± 0.006	m	3084.4 ± 0.1	9.78885E-05	12.9	0.000101	0.9	0.000105	23.8	1.03 ± 0.13	0.96 ± 0.24
46Sc	83.788 ± 0.00022	d	889.271 ± 0.002	1.264211858	0.7	1.22	0.4			0.97 ± 0.01	
46Sc	83.788 ± 0.00022	d	1120.537 ± 0.003	1.264245618	0.7	1.22	1.1			0.97 ± 0.01	
47Sc	3.3492 ± 0.0006	d	159.381 ± 0.015	1.05418E-06	9.5	0.000000857	1.6			0.81 ± 0.10	
51Ti	5.76 ± 0.01	m	320.076 ± 0.006	0.000376883	1.7	0.000374	1.1	0.000358722	1.1	0.99 ± 0.02	1.04 ± 0.01
51Ti	5.76 ± 0.01	m	928.63 ± 0.04	2.78918E-05	3.6	0.0000265	1.1			0.95 ± 0.04	
52V	3.743 ± 0.005	m	1434.06 ± 0.01	0.202152109	1.3	0.196	1.2	0.189	2.1	0.97 ± 0.02	1.04 ± 0.02
51Cr	27.703 ± 0.003	d	320.0835 ± 0.0004	0.002654404	1.4	0.00262	5.0	0.000036	22.2	0.99 ± 0.05	
56Mn	2.57878 ± 0.0046	h	846.7638 ± 0.0019	0.502365783	0.4	0.496	0.6	0.476094815	0.3	0.99 ± 0.01	1.04 ± 0.01
56Mn	2.57878 ± 0.0046	h	1810.726 ± 0.004	0.136708544	1.5	0.135	0.4	0.131562079	3.0	0.99 ± 0.02	1.03 ± 0.03
56Mn	2.57878 ± 0.0046	h	2113.092 ± 0.006	0.072165848	2.1	0.0717	0.2	0.069415351	2.6	0.99 ± 0.02	1.03 ± 0.03
59Fe	44.495 ± 0.008	d	142.651 ± 0.002	1.35399E-06	2.7	0.00000133	1.5			0.98 ± 0.03	
59Fe	44.495 ± 0.008	d	192.349 ± 0.005	4.06475E-06	2.5	0.00000378	0.5			0.93 ± 0.03	
59Fe	44.495 ± 0.008	d	334.8 ± 0.2	3.6775E-07	3.5	0.000000382	0.0			1.04 ± 0.03	
59Fe	44.495 ± 0.008	d	1099.245 ± 0.003	7.88295E-05	2.3	0.0000777	0.5			0.99 ± 0.02	
59Fe	44.495 ± 0.008	d	1291.59 ± 0.006	6.01912E-05	2.3	0.0000593	0.3			0.99 ± 0.02	
60Co	5.271 ± 0.0008	y	1173.228 ± 0.003	1.316459742	0.2	1.32	0.4			1.00 ± 0.00	
60Co	5.271 ± 0.0008	y	1332.492 ± 0.004	1.31820799	0.2	1.32	0.5			1.00 ± 0.01	
60Co	10.467 ± 0.006	m	58.603 ± 0.007	0.014757421	4.9	0.0151	0.8	0.013924422	1.0	1.02 ± 0.05	1.08 ± 0.01
60Co	10.467 ± 0.006	m	1332.501 ± 0.005	0.001736167	13.1	0.00175	1.4	0.0023	11.7	1.01 ± 0.13	0.76 ± 0.12
65Ni	2.5172 ± 0.0003	h	366.27 ± 0.03	2.59435E-05	2.7	0.0000251	1.2			0.97 ± 0.03	
65Ni	2.5172 ± 0.0003	h	1115.53 ± 0.04	8.33977E-05	2.6	0.0000814	0.5	0.000062	11.3	0.98 ± 0.03	1.31 ± 0.11
65Ni	2.5172 ± 0.0003	h	1481.84 ± 0.05	0.000127502	2.5	0.000127	0.6			1.00 ± 0.03	
64Cu	12.701 ± 0.002	h	511 ±	0.036196325	0.9	0.037	0.0			1.02 ± 0.01	
64Cu	12.701 ± 0.002	h	1345.77 ± 0.16	0.000486235	2.2	0.000498	0.9	0.000487011	1.9	1.02 ± 0.02	1.02 ± 0.02
66Cu	5.12 ± 0.14	m	1039.2 ± 0.2	0.002030752	1.7	0.00186	0.5	0.00187892	2.2	0.92 ± 0.02	0.99 ± 0.02
65Zn	244.01 ± 0.09	d	1115.539 ± 0.002	0.006162244	2.5	0.00572	0.3			0.93 ± 0.03	
69Zn	13.76 ± 0.02	h	438.634 ± 0.018	0.000410107	5.6	0.000398	0.6	0.000390836	3.9	0.97 ± 0.06	1.02 ± 0.04

Isotope	Half-life	m	E <sub>g</sub> (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud		
				Atlas	±(%)	IUPAC	±(%)	Budapest	±(%)	Ratio	Ratio
71Zn	2.45±0.1	m	121.52±0.05	4.93389E-07	11.7	0.000000109	3.0		0.22±0.12		
71Zn	2.45±0.1	m	511.6±0.1	5.26282E-06	6.8	0.00000155	2.1		0.29±0.07		
72Ga	14.1±0.02	h	629.96±0.04	0.01365258	3.8	0.0149	1.0	0.014031865	4.5	1.09±0.04	1.06±0.05
72Ga	14.1±0.02	h	834.03±0.03	0.052712666	3.3	0.0523	0.6	0.047250158	3.0	0.99±0.03	1.11±0.03
72Ga	14.1±0.02	h	894.25±0.1	0.005445218	3.6	0.00546	0.9	0.010022761	8.6	1.00±0.04	0.54±0.09
72Ga	14.1±0.02	h	1050.69±0.05	0.003811126	3.7	0.00383	0.8	0.003407739	10.9	1.00±0.04	1.12±0.11
72Ga	14.1±0.02	h	2201.66±0.07	0.014285132	3.7	0.0148	1.0	0.014890959	7.7	1.04±0.04	0.99±0.08
72Ga	14.1±0.02	h	2490.98±0.07	0.004232827	4.4	0.00419	1.7	0.004868198	23.5	0.99±0.05	0.86±0.24
72Ga	14.1±0.02	h	2507.79±0.07	0.007042412	3.7	0.00716	2.2	0.008018209	14.3	1.02±0.04	0.89±0.14
75Ge	82.78±0.04	m	198.6±0.1	6.44113E-05	12.7	0.0000615	1.0	4.59214E-05	9.0	0.95±0.13	
75Ge	82.78±0.04	m	468.8±0.2	1.2139E-05	13.0	0.000012	8.3			0.99±0.15	
75Ge	82.78±0.04	m	617.7±0.2	6.19339E-06	13.3	0.00000469	1.1			0.76±0.13	
75Ge	47.7±0.5	s	139.68±0.03	0.000675088	6.4	0.000573	1.6	0.00063795	3.0	0.85±0.07	0.90±0.03
77Ge	11.3±0.01	h	211.03±0.03	5.19965E-05	5.0	0.000039	0.0			0.75±0.05	
77Ge	11.3±0.01	h	215.5±0.03	4.82695E-05	5.0	0.0000355	0.0			0.74±0.05	
77Ge	11.3±0.01	h	264.44±0.03	9.09029E-05	4.0	0.0000688	0.0	0.000494962	6.7	0.76±0.04	0.14±0.07
77Ge	11.3±0.01	h	367.4±0.03	2.36348E-05	4.6	0.0000194	0.0			0.82±0.05	
77Ge	11.3±0.01	h	416.33±0.03	3.68157E-05	4.6	0.0000306	0.0	0.000137489	10.0	0.83±0.05	0.22±0.10
77Ge	11.3±0.01	h	558.02±0.03	2.70891E-05	4.6	0.0000228	0.0			0.84±0.05	
77Ge	11.3±0.01	h	631.82±0.03	1.17265E-05	4.6	0.0000104	0.0			0.89±0.05	
77Ge	11.3±0.01	h	1085.19±0.03	1.01993E-05	4.5	0.00000835	0.0			0.82±0.05	
77Ge	52.9±0.6	s	159.7±0.1	2.74979E-05	23.0	0.0000245	1.0	2.74979E-05	23.0	0.89±0.23	0.89±0.23
76As	26.24±0.09	h	559.1±0.05	0.051337998	4.9	0.0483	1.7	0.053298912	0.5	0.94±0.05	0.91±0.02
76As	26.24±0.09	h	563.23±0.05	0.001370725	7.1	0.0014	1.6	0.001439071	5.6	1.02±0.07	0.97±0.06
76As	26.24±0.09	h	657.05±0.05	0.007033306	7.0	0.00661	1.4	0.007435198	5.0	0.94±0.07	0.89±0.05
76As	26.24±0.09	h	1212.92±0.05	0.001642816	7.9	0.00152	1.3	0.001732215	6.2	0.93±0.08	0.88±0.06
76As	26.24±0.09	h	1216.08±0.05	0.003901688	7.2	0.00373	0.8	0.004130666	5.2	0.96±0.07	0.90±0.05
75Se	119.79±0.04	d	121.1155±0.0011	0.00211491	2.3	0.00194	0.6			0.92±0.02	
75Se	119.79±0.04	d	136.0001±0.0006	0.007156267	1.9	0.00676	1.0			0.94±0.02	
75Se	119.79±0.04	d	264.6576±0.0009	0.007242338	1.6	0.00711	0.7			0.98±0.02	
75Se	119.79±0.04	d	279.5422±0.001	0.003072768	1.6	0.003	1.2			0.98±0.02	
75Se	119.79±0.04	d	400.6572±0.0008	0.00141035	1.7	0.00143	0.8			1.01±0.02	
77Se	17.36±0.05	s	162±0.1	0.026386648	5.2	0.0249	20.1	0.021619934	2.7	0.94±0.21	1.15±0.20
80Br	17.68±0.02	m	616.3±0.5	0.009166814	9.3	0.00692	0.3	0.00639686	1.6	0.75±0.09	1.08±0.02
80Br	17.68±0.02	m	665.8±0.2	0.001475857	12.3	0.00122	0.5	0.001374325	5.5	0.83±0.12	0.89±0.05
82Br	35.282±0.007	h	554.348±0.002	0.021535261	2.4	0.0238	1.1			1.11±0.03	
82Br	35.282±0.007	h	619.106±0.004	0.013194139	2.5	0.0145	0.8			1.10±0.03	
82Br	35.282±0.007	h	698.374±0.005	0.008568607	2.6	0.00938	1.0			1.09±0.03	
82Br	35.282±0.007	h	776.517±0.003	0.025276128	2.5	0.0276	0.8			1.09±0.03	
82Br	35.282±0.007	h	827.828±0.006	0.007279525	2.7	0.00799	0.9			1.10±0.03	
82Br	35.282±0.007	h	1044.002±0.005	0.008568607	2.6	0.00914	0.7			1.07±0.03	
82Br	35.282±0.007	h	1317.473±0.01	0.008113637	2.6	0.00891	0.4			1.10±0.03	
82Br	35.282±0.007	h	1474.88±0.01	0.005029949	2.5	0.00542	0.5			1.08±0.03	
86Rb	18.642±0.018	d	1077±0.4	0.000753191	1.5	0.000765	1.0	0.000703168	1.7	1.02±0.02	1.09±0.02
88Rb	17.78±0.11	m	898.03±0.04	0.000116546	6.2	0.000101	1.5	0.00010933	0.6	0.87±0.06	0.92±0.02
88Rb	17.78±0.11	m	1836±0.05	0.000177662	6.2	0.000157	1.1	0.000166798	1.1	0.88±0.06	0.94±0.02
88Rb	17.78±0.11	m	2677.892±0.021	1.62561E-05	6.3	0.0000147	1.4			0.90±0.06	
85Sr	64.85±0.007	d	514.0048±0.0022	9.7356E-05	8.1	0.0000915	0.9			0.94±0.08	

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values						IUPAC/Atl	IUPAC/Bud	
			Atlas	±(%)	IUPAC	±(%)	Budapest	±(%)			Ratio
85Sr	67.63±0.04	m	231.86±0.02	7.02333E-05	10.0	0.0000692	1.0	6.60831E-05	10.3	0.99±0.10	1.05±0.10
87Sr	2.815±0.012	h	388.531±0.003	0.001492113	7.8	0.00149	0.5	0.0017888	2.9	1.00±0.08	0.83±0.03
90Y	3.19±0.06	h	202.53±0.03	2.28244E-05	20.1	0.0000236	1.9			1.03±0.20	
90Y	3.19±0.06	h	479.51±0.07	2.13835E-05	20.0	0.0000223	0.9			1.04±0.20	
95Zr	64.032±0.006	d	724.193±0.003	8.70738E-05	3.5	0.000089	1.2			1.02±0.04	
95Zr	64.032±0.006	d	756.729±0.012	0.000106959	3.5	0.00011	1.3			1.03±0.04	
97Zr	16.744±0.011	m	254.17±0.14	1.68137E-07	7.8	0.000000182	2.0			1.08±0.08	
97Zr	16.744±0.011	m	355.4±0.09	3.07567E-07	6.2	0.000000292	2.0			0.95±0.07	
97Zr	16.744±0.011	m	507.64±0.08	7.38161E-07	5.7	0.000000679	0.2			0.92±0.06	
97Zr	16.744±0.011	m	602.37±0.14	2.02311E-07	7.0	0.00000019	2.0			0.94±0.07	
97Zr	16.744±0.011	m	703.76±0.05	1.48999E-07	6.3	0.000000136	2.0			0.91±0.07	
97Zr	16.744±0.011	m	1147.97±0.08	3.84117E-07	5.9	0.000000341	2.0			0.89±0.06	
94Nb	6.263±0.004	m	871.087±0.018	0.00012934	13.0	0.000097	1.6			0.75±0.13	
95Nb	34.991±0.006	d	765.803±0.006	0.000193926	3.5	0.000217	1.6			1.12±0.04	
97Nb	72.1±0.7	m	657.94±0.09	1.44291E-05	4.4	0.0000124	0.9			0.86±0.04	
97Nb	52.7±1.8	s	743.36±0.03	1.4255E-05	4.4	0.0000124	0.3			0.87±0.04	
99Mo	2.7479±0.0005	d	181.068±0.008	4.10663E-05	5.0	0.0000415	0.6			1.01±0.05	
99Mo	2.7479±0.0005	d	366.421±0.015	8.1586E-06	5.0	0.00000836	1.3			1.02±0.05	
99Mo	2.7479±0.0005	d	739.5±0.017	8.28159E-05	4.8	0.0000846	0.7			1.02±0.05	
99Mo	2.7479±0.0005	d	777.921±0.02	2.92452E-05	5.0	0.0000297	0.7			1.02±0.05	
101Mo	14.61±0.03	m	80.92±0.03	1.55831E-05	3.5	0.000018	3.0			1.16±0.05	
101Mo	14.61±0.03	m	191.92±0.02	7.60151E-05	1.9	0.0000725	1.7			0.95±0.03	
101Mo	14.61±0.03	m	195.93±0.04	1.15543E-05	3.2	0.0000111	1.8			0.96±0.04	
101Mo	14.61±0.03	m	408.69±0.06	6.38527E-06	4.0	0.00000585	30.8			0.92±0.31	
101Mo	14.61±0.03	m	499.65±0.03	5.82275E-06	3.7	0.00000563	3.0			0.97±0.05	
101Mo	14.61±0.03	m	695.56±0.06	2.78215E-05	2.9	0.0000279	1.8			1.00±0.03	
101Mo	14.61±0.03	m	713.04±0.09	1.39108E-05	4.8	0.0000137	2.9			0.98±0.06	
101Mo	14.61±0.03	m	877.39±0.04	1.34547E-05	6.0	0.0000153	3.3			1.14±0.07	
101Mo	14.61±0.03	m	1011.05±0.14	3.72474E-06	8.4	0.00000375	2.9			1.01±0.09	
101Mo	14.61±0.03	m	1012.47±0.04	5.43508E-05	5.5	0.000058	2.2			1.07±0.06	
101Mo	14.61±0.03	m	1160.98±0.04	1.67993E-05	3.7	0.0000182	3.0			1.08±0.05	
101Mo	14.61±0.03	m	1304±0.04	1.13262E-05	3.3	0.000013	3.1			1.15±0.05	
101Mo	14.61±0.03	m	1532.49±0.04	2.56171E-05	3.5	0.0000273	2.9			1.07±0.05	
99Tc	6.0067±0.001	h	140.511±0.001	0.00060472	4.6	0.000527	0.5	0.000555657	2.6	0.87±0.05	0.95±0.03
101Tc	14.22±0.01	m	127.22±0.03	1.08363E-05	3.4	0.000012	5.0			1.11±0.06	
101Tc	14.22±0.01	m	184.12±0.05	6.58964E-06	3.7	0.0000055	0.0			0.83±0.04	
101Tc	14.22±0.01	m	306.83±0.03	0.000366091	5.2	0.000373	1.3	0.000332978	3.8	1.02±0.05	1.12±0.04
101Tc	14.22±0.01	m	531.42±0.05	4.13683E-06	3.9	0.00000501	3.0			1.21±0.05	
101Tc	14.22±0.01	m	545.05±0.06	2.46013E-05	3.1	0.0000249	1.0			1.01±0.03	
97Ru	2.9±0.1	d	215.7±0.03	0.000284361	7.0	0.000225	0.4			0.79±0.07	
103Ru	39.26±0.02	d	497.084±0.006	0.007539323	3.4	0.00689	0.4			0.91±0.03	
103Ru	39.26±0.02	d	610.33±0.02	0.000477239	3.3	0.00043	0.5			0.90±0.03	
105Ru	4.44±0.02	h	262.83±0.1	0.000124287	3.2	0.000131	1.5			1.05±0.04	
105Ru	4.44±0.02	h	469.37±0.1	0.00033173	3.7	0.000326	1.5	0.000555111	3.2	0.98±0.04	0.59±0.04
105Ru	4.44±0.02	h	676.36±0.08	0.000295964	3.8	0.000295	3.1	0.000495846	3.6	1.00±0.05	0.59±0.05
105Ru	4.44±0.02	h	724.3±0.03	0.00089415	2.3	0.000887	1.7	0.001501366	1.5	0.99±0.03	0.59±0.02
104Rh	42.3±0.4	s	555.81±0.04	0.058284552	25.0	0.0692	1.4	0.060923725	2.9	1.19±0.25	1.14±0.03
105Rh	35.36±0.06	h	306.1±0.2	9.64037E-05	6.8	0.000101	1.5			1.05±0.07	

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud		
			Atlas	±(%)	IUPAC	±(%)			Budapest	±(%)
105Rh	35.36±0.06	h	318.9±0.1	0.000361063	3.7	0.000357	1.7			0.99±0.04
105Rh	43±0.3	s	129.57±0.08	0.000107032	4.6	0.000092	1.3			0.86±0.05
109Pd	13.7012±0.0024	h	309.1±0.5	1.92713E-06	30.8	0.0000019	2.1			0.99±0.31
109Pd	13.7012±0.0024	h	311.4±0.1	1.26227E-05	11.6	0.0000148	1.4			1.17±0.12
109Pd	13.7012±0.0024	h	602.5±0.1	3.15085E-06	9.2	0.00000343	0.0			1.09±0.09
109Pd	13.7012±0.0024	h	636.3±0.1	3.94097E-06	8.5	0.00000462	0.0			1.17±0.09
109Pd	13.7012±0.0024	h	647.3±0.1	9.63563E-06	7.2	0.0000113	0.5			1.17±0.07
109Pd	13.7012±0.0024	h	781.4±0.2	4.43239E-06	13.0	0.00000461	0.0			1.04±0.13
109Pd	4.696±0.003	m	188.9±0.1	0.000537354	5.5	0.000494	0.3	0.000512194	5.5	0.92±0.06 0.96±0.06
111Pd	5.5±0.1	h	172.2±0.1	2.5823E-05	10.0	0.0000107	1.4			0.41±0.10
108Ag	2.395±0.006	m	433.938±0.005	0.001737077	15.5	0.00159	1.9			0.92±0.16
108Ag	2.395±0.006	m	618.86±0.05	0.000925182	16.2	0.000933	0.0			1.01±0.16
108Ag	2.395±0.006	m	632.98±0.05	0.006117531	16.4	0.0061	2.0	0.00683012	5.7	1.00±0.16 0.89±0.06
109Ag	39.6±0.2	s	88.0336±0.0001	0.001461141	5.9	0.00171	0.0			1.17±0.06
110Ag	24.56±0.11	s	657.76±0.0011	0.037427131	9.4	0.0306	0.4	0.034428246	2.7	0.82±0.09 0.89±0.03
110Ag	249.78±0.02	d	446.812±0.003	0.001345247	1.9	0.00136	1.5			1.01±0.02
110Ag	249.78±0.02	d	620.3553±0.0017	0.001002486	3.2	0.00102	0.7			1.02±0.03
110Ag	249.78±0.02	d	657.76±0.0011	0.034784782	1.3	0.035	0.7			1.01±0.01
110Ag	249.78±0.02	d	677.6217±0.0012	0.003892004	1.4	0.00393	1.3			1.01±0.02
110Ag	249.78±0.02	d	687.0091±0.0018	0.002377218	1.3	0.00243	1.1			1.02±0.02
110Ag	249.78±0.02	d	706.676±0.0015	0.006073884	1.4	0.00603	0.8			0.99±0.02
110Ag	249.78±0.02	d	744.2755±0.0018	0.001735922	1.4	0.00169	1.2			0.97±0.02
110Ag	249.78±0.02	d	763.9424±0.0017	0.008222595	1.3	0.00827	0.7			1.01±0.02
110Ag	249.78±0.02	d	818.0244±0.0018	0.002701552	1.4	0.00269	1.1			1.00±0.02
110Ag	249.78±0.02	d	884.6781±0.0013	0.02727351	2.1	0.0269	0.7			0.99±0.02
110Ag	249.78±0.02	d	937.485±0.003	0.012719038	1.5	0.0127	0.8			1.00±0.02
110Ag	249.78±0.02	d	1384.2931±0.002	0.009103455	2.4	0.00912	0.9			1.00±0.03
110Ag	249.78±0.02	d	1475.7792±0.0023	0.001485301	1.8	0.0015	0.7			1.01±0.02
110Ag	249.78±0.02	d	1505.028±0.002	0.004850262	1.8	0.00484	0.8			1.00±0.02
110Ag	249.78±0.02	d	1562.294±0.0018	0.000445959	2.8	0.000435	0.9			0.98±0.03
115Cd	53.46±0.05	h	527.901±0.007	0.000431049	5.8	0.000477	1.5			1.11±0.06
113In	99.476±0.023	m	391.698±0.003	8.8715E-05	5.0	0.0000599	0.8			0.68±0.05
114In	49.51±0.01	d	190.27±0.03	0.000984129	9.9	0.00106	0.8			1.08±0.10
114In	49.51±0.01	d	558.43±0.03	0.000277593	11.8	0.000286	0.7			1.03±0.12
114In	49.51±0.01	d	725.24±0.03	0.000277593	11.8	0.00029	0.6			1.04±0.12
115In	4.486±0.004	h	336.241±0.025	0.000686448	7.6	0.000773	1.7			1.13±0.08
116In	54.29±0.17	m	138.326±0.008	0.092892266	8.2	0.101	1.4	0.08886	3.5	1.09±0.08 1.14±0.04
116In	54.29±0.17	m	416.86±0.03	0.781247778	8.6	0.754	1.1	0.7477456	4.2	0.97±0.09 1.01±0.04
116In	54.29±0.17	m	818.7±0.2	0.323932005	8.3	0.336	1.2	0.3095319	3.9	1.04±0.08 1.09±0.04
116In	54.29±0.17	m	1097.3±0.2	1.586314085	7.7	1.6	1.3	1.518097463	1.9	1.01±0.08 1.05±0.02
116In	54.29±0.17	m	1293.54±0.15	2.38185298	7.7	2.29	0.8	2.278015666	2.3	0.96±0.08 1.01±0.02
116In	54.29±0.17	m	1507.4±0.2	0.281058652	8.2	0.269	1.5	0.269536205	3.2	0.96±0.08 1.00±0.04
116In	54.29±0.17	m	2112.1±0.4	0.438260948	7.9	0.418	1.2	0.419085325	2.9	0.95±0.08 1.00±0.03
113Sn	115.09±0.03	d	255.134±0.01	2.88248E-06	6.3	0.00000195	0.6			0.68±0.06
117Sn	13.76±0.04	d	156.02±0.03	3.2457E-07	33.3	0.00000323	1.5			1.00±0.33
117Sn	13.76±0.04	d	158.56±0.02	1.32694E-05	33.3	0.0000133	1.0			1.00±0.33
123Sn	40.06±0.01	m	160.32±0.05	0.000101985	5.5	0.000102	0.5	9.7552E-05	0.7	1.00±0.06 1.05±0.01
125Sn	9.64±0.03	d	332.1±0.05	6.0213E-08	41.1	5.73E-08	0.0			0.95±0.41

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud			
			Atlas	±(%)	IUPAC	±(%)			Budapest	±(%)	Ratio
125Sn	9.64±0.03	d	822.48±0.05	1.83131E-07	41.1	0.00000021	0.0			1.15±0.41	
125Sn	9.64±0.03	d	1067.1±0.05	4.15262E-07	40.9	0.000000464	0.0			1.12±0.41	
125Sn	9.52±0.05	m	331.9±0.2	0.000128799	4.3	0.000118	2.0	0.0001396	3.6	0.92±0.05	0.85±0.04
122Sb	2.7238±0.0002	d	564.24±0.04	0.040461554	1.9	0.0438	1.6	0.044274586	0.2	1.08±0.02	0.99±0.02
122Sb	2.7238±0.0002	d	692.65±0.04	0.002205155	3.8	0.00238	2.1	0.002394107	3.4	1.08±0.04	0.99±0.04
124Sb	60.2±0.03	d	602.7275±0.0017	0.028432875	3.1	0.0296	0.6			1.04±0.03	
124Sb	60.2±0.03	d	645.8537±0.0013	0.002157487	3.1	0.00221	0.7			1.02±0.03	
124Sb	60.2±0.03	d	722.7842±0.0022	0.003127616	3.1	0.00319	0.8			1.02±0.03	
124Sb	60.2±0.03	d	1690.975±0.004	0.013829751	3.1	0.0141	1.1			1.02±0.03	
124Sb	60.2±0.03	d	2090.936±0.005	0.001595084	3.1	0.00158	2.0			0.99±0.04	
124Sb	93±5	s	498.4±0.1	0.000308459	7.6	0.000143	0.0	0.000203803	28.0	0.70±0.28	1.28±0.13
124Sb	93±5	s	602.72±0.04	0.000308459	26.1	0.000143	0.0	0.000203803	37.0	0.70±0.37	1.28±0.13
124Sb	93±5	s	645.82±0.04	0.00030229	7.6	0.000143	0.0	0.000199727	28.0	0.72±0.28	1.28±0.13
125Sb	2.75855±0.00025	y	176.314±0.002	9.2059E-06	3.9	0.000000247	0.0			0.03±0.04	
125Sb	2.75855±0.00025	y	427.874±0.004	3.98831E-05	3.9	0.00000123	0.0			0.03±0.04	
125Sb	2.75855±0.00025	y	463.365±0.004	1.41503E-05	3.9	0.000000443	0.0			0.03±0.04	
125Sb	2.75855±0.00025	y	606.713±0.003	6.77467E-06	3.9	0.000000171	0.0			0.03±0.04	
125Sb	2.75855±0.00025	y	635.95±0.003	1.5284E-05	3.9	0.000000491	0.0			0.03±0.04	
128I	24.99±0.02	m	442.901±0.01	0.012781084	1.6	0.0112	1.7	0.009439951	1.7	0.88±0.02	1.19±0.02
128I	24.99±0.02	m	526.557±0.014	0.001219315	1.7	0.00107	1.5	0.000896795	0.5	0.88±0.02	1.19±0.02
131I	8.0233±0.0019	d	80.185±0.0019	2.83749E-05	5.2	0.0000249	0.0			0.88±0.05	
131I	8.0233±0.0019	d	284.305±0.005	6.59578E-05	5.2	0.0000662	0.6			1.00±0.05	
131I	8.0233±0.0019	d	364.489±0.005	0.000883791	5.2	0.000867	0.8			0.98±0.05	
131I	8.0233±0.0019	d	636.989±0.004	7.90188E-05	5.2	0.0000758	0.0			0.96±0.05	
134Cs	2.0652±0.0004	y	563.246±0.005	0.039725729	3.6	0.0414	1.7			1.04±0.04	
134Cs	2.0652±0.0004	y	569.331±0.003	0.07324342	3.6	0.0734	1.5			1.00±0.04	
134Cs	2.0652±0.0004	y	604.721±0.002	0.465102628	3.6	0.476	2.1			1.02±0.04	
134Cs	2.0652±0.0004	y	795.864±0.004	0.407167287	3.6	0.415	1.9			1.02±0.04	
134Cs	2.0652±0.0004	y	801.953±0.004	0.041393276	3.6	0.0411	19.5			0.99±0.20	
134Cs	2.912±0.002	h	127.502±0.003	0.005151234	5.0	0.00548	1.6	0.004657086	3.2	1.06±0.05	1.18±0.04
131Ba	11.5±0.06	d	123.805±0.003	4.06552E-05	10.4	0.000039	0.8			0.96±0.10	
131Ba	11.5±0.06	d	133.609±0.007	2.98182E-06	10.4	0.00000324	0.0			1.09±0.10	
131Ba	11.5±0.06	d	216.078±0.008	2.75851E-05	10.4	0.0000275	1.5			1.00±0.11	
131Ba	11.5±0.06	d	373.246±0.011	1.97036E-05	10.4	0.0000192	0.4			0.97±0.10	
131Ba	11.5±0.06	d	486.522±0.012	2.92927E-06	10.4	0.00000344	0.0			1.17±0.10	
131Ba	11.5±0.06	d	496.326±0.013	6.56788E-05	10.4	0.0000684	0.2			1.04±0.10	
131Ba	11.5±0.06	d	620.111±0.017	2.01634E-06	10.4	0.00000234	0.0			1.16±0.10	
133Ba	38.9±0.1	h	275.925±0.007	1.36794E-06	3.4	0.00000227	0.0			1.66±0.03	
139Ba	83.06±0.28	m	165.8575±0.0011	0.001045796	17.3	0.00105	0.7	0.001075898	10.8	1.00±0.17	0.98±0.11
141Ce	32.508±0.01	d	145.4433±0.0014	0.003694965	3.4	0.00366	0.9			0.99±0.04	
140La	1.6785±0.00017	d	328.761±0.004	0.028263857	1.5	0.0287	1.0	0.01796743	1.4	1.02±0.02	1.60±0.02
140La	1.6785±0.00017	d	487.022±0.006	0.062642492	1.0	0.0637	0.9	0.040103304	1.4	1.02±0.01	1.59±0.02
140La	1.6785±0.00017	d	815.781±0.006	0.032231668	0.7	0.0332	0.6	0.02055474	0.8	1.03±0.01	1.62±0.01
140La	1.6785±0.00017	d	1596.203±0.013	0.129633269	0.5	0.134	1.1	0.083943833	1.5	1.03±0.01	1.60±0.02
143Ce	33.039±0.006	h	231.55±0.002	3.30331E-05	3.1	0.0000337	1.5			1.02±0.03	
143Ce	33.039±0.006	h	293.266±0.002	0.00068819	2.3	0.000689	0.6			1.00±0.02	
143Ce	33.039±0.006	h	350.619±0.003	5.19583E-05	2.4	0.0000514	0.6			0.99±0.02	
143Ce	33.039±0.006	h	664.571±0.015	9.15293E-05	2.4	0.0000918	1.5			1.00±0.03	



Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values						IUPAC/Atl	IUPAC/Bud
			Atlas	±(%)	IUPAC	±(%)	Budapest	±(%)		
143Ce	33.039±0.006	h	721.929±0.013	8.67119E-05	2.4	0.0000878	0.9			1.01±0.03
142Pr	19.12±0.04	h	1575.6±0.5	0.006310665	11.1	0.00612	0.7	0.006036294	2.8	0.97±0.11 1.01±0.03
147Nd	10.98±0.01	d	91.105±0.002	0.001035961	5.6	0.00102	2.5			0.98±0.06
147Nd	10.98±0.01	d	120.48±0.05	1.47106E-05	12.0	0.0000128	0.0			0.87±0.12
147Nd	10.98±0.01	d	275.374±0.015	2.97321E-05	8.4	0.0000286	2.0			0.96±0.09
147Nd	10.98±0.01	d	319.411±0.018	7.25173E-05	8.0	0.0000678	0.9			0.93±0.08
147Nd	10.98±0.01	d	398.155±0.02	3.2322E-05	8.5	0.000029	0.0			0.90±0.09
147Nd	10.98±0.01	d	439.895±0.022	4.45463E-05	9.0	0.0000422	1.4			0.95±0.09
147Nd	10.98±0.01	d	531.016±0.022	0.000485866	7.9	0.000456	1.1			0.94±0.08
147Nd	10.98±0.01	d	685.9±0.04	3.01465E-05	8.4	0.0000268	0.0			0.89±0.08
149Nd	1.728±0.001	h	114.314±0.011	0.000408367	8.2	0.000405	0.0			0.99±0.08
149Nd	1.728±0.001	h	208.147±0.009	5.42466E-05	4.7	0.0000571	0.0			1.05±0.05
149Nd	1.728±0.001	h	211.309±0.007	0.000551847	6.2	0.000526	0.0			0.95±0.06
149Nd	1.728±0.001	h	240.22±0.007	8.38808E-05	6.2	0.0000772	0.0			0.92±0.06
149Nd	1.728±0.001	h	267.693±0.008	0.00012858	5.4	0.000116	0.0			0.90±0.05
149Nd	1.728±0.001	h	270.166±0.007	0.000228465	5.4	0.000212	0.0			0.93±0.05
149Nd	1.728±0.001	h	326.554±0.01	9.71251E-05	5.2	0.000091	0.0			0.94±0.05
149Nd	1.728±0.001	h	540.509±0.01	0.000140169	5.9	0.000135	0.0			0.96±0.06
149Nd	1.728±0.001	h	654.831±0.013	0.000169417	6.8	0.000166	0.0			0.98±0.07
151Nd	12.44±0.07	m	255.68±0.01	0.000124572	7.4	0.000131	0.0			1.05±0.07
151Nd	12.44±0.07	m	1180.89±0.02	0.000112227	7.4	0.000109	0.0			0.97±0.07
149Pm	53.08±0.05	h	285.95±0.01	6.60512E-05	7.0	0.000061	1.1			0.92±0.07
151Pm	28.4±0.04	h	340.08±0.01	0.000189858	5.5	0.000173	0.0			0.91±0.06
153Sm	1.92855±0.00005	d	69.673±0.00013	0.036226801	3.0	0.0352	1.1			0.97±0.03
153Sm	1.92855±0.00005	d	103.18012±0.00017	0.224100674	3.1	0.231	0.4			1.03±0.03
155Sm	22.3±0.2	m	141.411±0.011	0.000518826	7.1	0.000483	1.2			0.93±0.07
155Sm	22.3±0.2	m	245.73±0.05	0.000978918	6.0	0.000905	1.4			0.92±0.06
152Eu	13.522±0.016	y	121.7817±0.0003	11.02075693	3.4	12.8	0.8			1.16±0.04
152Eu	13.522±0.016	y	244.6974±0.0008	2.928782642	3.4	3.44	0.3			1.17±0.03
152Eu	13.522±0.016	y	344.2785±0.0012	10.31474575	3.4	11.9	0.8			1.15±0.04
152Eu	13.522±0.016	y	443.965±0.003	1.086171046	3.5	1.39	1.2			1.28±0.04
152Eu	13.522±0.016	y	778.9045±0.0024	5.031299452	3.4	5.7	0.9			1.13±0.04
152Eu	13.522±0.016	y	867.38±0.003	1.645937053	3.4	1.88	1.1			1.14±0.04
152Eu	13.522±0.016	y	1112.076±0.003	5.201983474	3.4	6.07	0.8			1.17±0.04
152Eu	13.522±0.016	y	1408.013±0.0003	8.08809511	3.4	9.36	0.6			1.16±0.03
152Eu	9.3116±0.0013	h	121.777±0.005	1.52200967	16.9	1.48	0.0	1.445264573	2.7	0.97±0.17 1.02±0.03
152Eu	9.3116±0.0013	h	344.31±0.03	0.514525536	16.7	0.498	0.0	0.490076078	10.7	0.97±0.17 1.02±0.11
152Eu	9.3116±0.0013	h	841.594±0.008	3.080991236	16.8	3.02	0.0	2.929945452	2.2	0.98±0.17 1.03±0.02
152Eu	9.3116±0.0013	h	963.39±0.012	2.535655787	16.7	2.49	0.0	2.404394698	0.9	0.98±0.17 1.04±0.01
154Eu	8.601±0.004	y	247.9288±0.0007	0.154287431	2.5	0.155	0.0			1.00±0.02
154Eu	8.601±0.004	y	591.755±0.003	0.110845106	2.5	0.108	1.6			0.97±0.03
154Eu	8.601±0.004	y	723.3014±0.0022	0.448978663	2.5	0.446	1.6			0.99±0.03
154Eu	8.601±0.004	y	756.802±0.0023	0.101440067	2.5	0.108	0.0			1.06±0.03
154Eu	8.601±0.004	y	873.1834±0.0023	0.272522211	2.5	0.272	1.5			1.00±0.03
154Eu	8.601±0.004	y	996.25±0.05	0.235125983	2.4	0.23	0.0			0.98±0.02
154Eu	8.601±0.004	y	1274.429±0.004	0.781513983	2.4	0.777	1.2			0.99±0.03
153Gd	240.4±1	d	97.431±0.00021	0.005665455	3.9	0.00586	1.4			1.03±0.04
153Gd	240.4±1	d	103.18012±0.00017	0.004122107	3.9	0.00421	1.4			1.02±0.04

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud			
			Atlas	±(%)	IUPAC	±(%)			Budapest	±(%)	Ratio
159Gd	18.479±0.007	h	363.543±0.0018	0.000855538	9.1	0.000849	1.5			0.99±0.09	
161Gd	3.55±0.05	m	102.315±0.01	0.000564286	22.2	0.000788	0.0			1.40±0.22	
161Gd	3.55±0.05	m	165.213±0.015	0.000104796	22.8	0.000107	0.0			1.02±0.23	
161Gd	3.55±0.05	m	283.55±0.03	0.000241837	21.8	0.000284	0.0			1.17±0.22	
161Gd	3.55±0.05	m	314.92±0.02	0.000923011	21.8	0.00103	0.0			1.12±0.22	
161Gd	3.55±0.05	m	360.94±0.02	0.002442553	21.6	0.00272	0.0			1.11±0.22	
161Gd	3.55±0.05	m	480.12±0.02	0.000108827	22.1	0.000104	0.0			0.96±0.22	
160Tb	73.2±0.2	d	86.7882±0.0004	0.040474435	2.8	0.042	1.2			1.04±0.03	
160Tb	73.2±0.2	d	197.0352±0.0011	0.015948965	2.7	0.0162	4.9			1.02±0.06	
160Tb	73.2±0.2	d	215.6464±0.0012	0.012364616	2.6	0.0127	0.4			1.03±0.03	
160Tb	73.2±0.2	d	298.58±0.0019	0.080393156	2.7	0.0825	12.1			1.03±0.12	
160Tb	73.2±0.2	d	879.383±0.003	0.092618844	2.6	0.0942	1.0			1.02±0.03	
160Tb	73.2±0.2	d	962.317±0.004	0.030193743	2.8	0.0305	0.0			1.01±0.03	
160Tb	73.2±0.2	d	966.171±0.003	0.077244116	2.7	0.0784	0.0			1.01±0.03	
160Tb	73.2±0.2	d	1177.962±0.004	0.045753709	2.7	0.0471	10.6			1.03±0.11	
160Tb	73.2±0.2	d	1199.89±0.03	0.007335412	2.7	0.00753	1.3			1.03±0.03	
160Tb	73.2±0.2	d	1271.88±0.008	0.02290464	2.6	0.0235	0.9			1.03±0.03	
160Tb	73.2±0.2	d	1312.14±0.04	0.008808052	2.9	0.00898	0.9			1.02±0.03	
165Dy	2.334±0.001	h	94.7±0.003	0.338475445	12.7	0.357	1.4	0.13024105	4.7	1.05±0.13	2.74±0.05
165Dy	2.334±0.001	h	279.763±0.012	0.047116418	12.8	0.0488	0.8			1.04±0.13	
165Dy	2.334±0.001	h	361.68±0.02	0.07945433	12.8	0.0836	0.7			1.05±0.13	
165Dy	2.334±0.001	h	633.415±0.02	0.053711127	11.9	0.0562	1.6			1.05±0.12	
165Dy	2.334±0.001	h	715.328±0.02	0.050532954	11.9	0.0523	1.1			1.03±0.12	
165Dy	1.257±0.006	m	108.16±0.003	0.175509845	14.9	0.188	0.0	0.167101724	3.7	1.07±0.15	1.13±0.04
165Dy	1.257±0.006	m	515.467±0.025	0.089096919	16.5	0.0925	0.0	0.085148158	3.2	1.04±0.16	1.09±0.03
166Ho	26.795±0.029	h	80.5725±0.0013	0.050792825	2.2	0.0494	1.0	0.046849596	1.3	0.97±0.02	1.05±0.02
166Ho	26.795±0.029	h	1379.446±0.01	0.00723507	4.2	0.00695	1.6	0.006500835	3.2	0.96±0.04	1.07±0.04
166Ho	26.795±0.029	h	1581.852±0.015	0.001442361	2.8	0.0014	2.1			0.97±0.04	
166Ho	26.795±0.029	h	1662.424±0.015	0.000915046	4.6	0.000875	0.7			0.96±0.05	
171Er	7.516±0.002	h	111.621±0.004	0.003384348	6.0	0.00341	0.9			1.01±0.06	
171Er	7.516±0.002	h	116.656±0.006	0.000379707	5.2	0.000381	0.0			0.00±0.05	
171Er	7.516±0.002	h	124.017±0.004	0.00150232	5.6	0.00152	0.6			1.01±0.06	
171Er	7.516±0.002	h	237.14±0.04	4.98572E-05	5.6	0.0000523	0.0			1.05±0.06	
171Er	7.516±0.002	h	295.901±0.014	0.004771105	5.3	0.00479	1.5			1.00±0.06	
171Er	7.516±0.002	h	308.291±0.018	0.010631805	5.2	0.0104	1.4			0.98±0.05	
170Tm	127.8±0.6	d	84.25474±0.00008	0.032213175	4.1	0.0326	1.5			1.01±0.04	
169Yb	32.018±0.005	d	63.12044±0.00004	0.015906724	7.4	0.0204	0.0			1.28±0.07	
169Yb	32.018±0.005	d	109.77924±0.00004	0.006268802	7.4	0.00779	0.0			1.24±0.07	
169Yb	32.018±0.005	d	130.52293±0.00006	0.004109387	7.4	0.00507	0.0			1.23±0.07	
169Yb	32.018±0.005	d	177.21307±0.00006	0.008059888	7.4	0.0104	0.0			1.29±0.07	
169Yb	32.018±0.005	d	197.95675±0.00007	0.012974542	7.4	0.0164	0.0			1.26±0.07	
169Yb	32.018±0.005	d	307.73757±0.00009	0.003627672	7.4	0.00434	0.0			1.20±0.07	
175Yb	4.185±0.001	d	113.805±0.004	0.0093927	2.8	0.00942	1.3	0.004811549	3.4	1.00±0.03	1.96±0.04
175Yb	4.185±0.001	d	137.658±0.006	0.000571868	7.2	0.000569	0.6			0.99±0.07	
175Yb	4.185±0.001	d	144.863±0.006	0.001632541	2.8	0.00159	1.5			0.97±0.03	
175Yb	4.185±0.001	d	282.522±0.014	0.014887749	2.7	0.0146	0.3	0.007684633	3.3	0.98±0.03	1.90±0.03
175Yb	4.185±0.001	d	396.329±0.02	0.031947959	3.1	0.0312	0.6	0.016384652	3.5	0.98±0.03	1.90±0.04
177Yb	1.911±0.003	h	121.6±0.1	0.000152884	11.0	0.000164	0.0			1.07±0.11	

**Table 2.** Comparison of *Atlas of Neutron Resonances* thermal neutron radiative cross sections  $\sigma_0$  [3] with cross sections derived from IUPAC  $k_0$  values [1,2] and Budapest Reactor  $\gamma$ -ray  $\sigma_0 P_\gamma$  measurements [3].

Target Isotope	Energy Mode	Half-life	$s_0(\text{Atlas})$	$s_0(\text{IUPAC})$	$s_0(\text{Budapest})$
19F 20F	0B-	11.07±0.06 s	0.00951±0.00009	0.00907±0.00011	0.0096±0.0008
22Ne 23Ne	0B-	37.24±0.12 s	0.0455±0.0006		0.046±0.001
23Na 24Na	0B-	14.9574±0.002 h	0.517±0.004	0.515±0.003	0.53±0.008
23Na 24Na	472.2IT	20.2±0.07 ms	0.4±0.03		0.478±0.004
26Mg 27Mg	0B-	9.458±0.012 m	0.0384±0.0006	0.0371±0.0005	0.0378±0.0013
27Al 28Al	0B-	2.2414±0.0012 m	0.231±0.003	0.226±0.002	0.232±0.003
30Si 31Si	0B-	157.3±0.3 m	0.107±0.002	0.0902±0.0006	
36S 37S	0B-	5.05±0.02 m	0.236±0.006	0.16±0.003	1.22±0.33
37Cl 38Cl	0B-	37.24±0.05 m	0.433±0.006	0.436±0.008	0.553±0.016
37Cl 38Cl	671.4IT	715±3 ms	0.047±0.01		0.05±0.003
40Ar 41Ar	0B-	109.61±0.04 m	0.66±0.01	0.637±0.001	
41K 42K	0B-	12.36±0.012 h	1.46±0.03	1.417±0.017	1.644±0.008
46Ca 47Ca	0B-	4.536±0.003 d	0.74±0.07	0.71±0.017	
48Ca 49Ca	0B-	8.718±0.006 m	1.09±0.14	1.125±0.01	1.22±0.29
45Sc 46Sc	0B-	83.788±0.00022 d	27.2±0.2	26.2±0.3	
46Ca 47Sc	0B-	3.3492±0.0006 d	0.74±0.07	0.602±0.01	
45Sc 46Sc	142.5IT	18.75±0.04 s	9.8±1.1		7.9±0.3
50Ti 51Ti	0B-	5.76±0.01 m	0.179±0.003	0.175±0.003	0.178±0.002
51V 52V	0B-	3.743±0.005 m	4.94±0.04	4.79±0.06	4.82±0.08
50Cr 51Cr	0EC	27.703±0.003 d	15.4±0.2	15.2±0.08	
55Mn 56Mn	0B-	2.57878±0.0046 h	13.36±0.05	13.25±0.1	13.25±0.04
58Fe 59Fe	0B-	44.495±0.008 d	1.32±0.03	1.29±0.02	
59Co 60Co	0B-	5.271±0.0008 y	37.18±0.06	37.26±0.24	
59Co 60Co	58.6IT,B-	10.467±0.006 m	20.4±0.8	20.8±0.3	20.1±0.6
64Ni 65Ni	0B-	2.5172±0.0003 h	1.64±0.04	1.61±0.02	0.84±0.09
63Cu 64Cu	0EC	12.701±0.002 h	4.5±0.02	4.6±0.04	4.72±0.13
65Cu 66Cu	0B-	5.12±0.14 m	2.17±0.03	1.99±0.01	2.1±0.05
64Zn 65Zn	0EC	244.01±0.09 d	0.79±0.02	0.733±0.003	
68Zn 69Zn	438.6IT,B-	13.76±0.02 h	0.072±0.004	0.0699±0.0004	0.072±0.003
68Zn 69Zn	0B-	56.4±0.9 m	1.07±0.1		
70Zn 71Zn	0B-	2.45±0.1 m	0.083±0.005	0.0216±0.0007	
70Zn 71Zn	157.7B-	3.96±0.05 h	0.0087±0.0005		
71Ga 72Ga	0B-	14.1±0.02 h	4.61±0.15	5±0.13	4.37±0.11
71Ga 72Ga	119.7IT	39.68±0.13 ms	0.15±0.05		0.22±0.008
74Ge 75Ge	0B-	82.78±0.04 m	0.52±0.04	0.4548±0.0007	0.39±0.05
74Ge 75Ge	139.7IT,B-	47.7±0.5 s	0.164±0.01	0.1392±0.0013	0.162±0.006
76Ge 77Ge	0B-	11.3±0.01 h	0.077±0.003	0.0615±0.0002	0.37±0.02
76Ge 77Ge	159.7B-,IT	52.9±0.6 s	0.1±0.01	0.1084±0.0011	0.139±0.023
70Ge 71Ge	198.4IT	20.4±0.17 ms	0.28±0.07		0.41±0.03
72Ge 73Ge	66.7IT	0.499±0.011 s	0.5±0.01		0.47±0.04
74Ge 75Ge	0B-	82.78±0.04 m	0.36±0.04		0.43±0.05
75As 76As	0B-	26.24±0.09 h	4.09±0.08	4.17±0.1	4.48±0.16
74Se 75Se	0B-	119.79±0.04 d	52.2±0.8	50±1	

Target	Isotope	Energy Mode	Half-life		$S_0(\text{Atlas})$	$S_0(\text{IUPAC})$	$S_0(\text{Budapest})$
76Se	77Se	161.9 IT	17.36 ± 0.05	s	20 ± 1	18.87 ± 0.1	17.2 ± 0.5
79Br	80Br	0 B-, EC	17.68 ± 0.02	m	10.32 ± 0.25	7.97 ± 0.05	8.1 ± 0.6
79Br	80Br	85.8 IT	4.4205 ± 0.08	h	2.44 ± 0.08		0.66 ± 0.06
81Br	82Br	0 B-	35.282 ± 0.007	h	2.35 ± 0.05	2.56 ± 0.06	0.107 ± 0.002
81Br	82Br	45.9 IT, B-	6.13 ± 0.09	m	2.12 ± 0.05		
78Kr	79Kr	129.8 IT	50 ± 3	s	0.18 ± 0.03		0.165 ± 0.021
80Kr	81Kr	190.6 IT, EC	13.1 ± 0.03	s	4.53 ± 0.65		4.7 ± 0.7
82Kr	83Kr	41.5 IT	1.83 ± 0.03	h	15.1 ± 2.7		19 ± 3
84Kr	85Kr	304.9 IT, B-	4.48 ± 0.008	h	0.09 ± 0.013		0.0901 ± 0.0009
86Kr	87Kr	0 B-	76.3 ± 0.6	m	0.003 ± 0.002		0.003 ± 0.0001
85Rb	86Rb	0 B-, EC	18.642 ± 0.018	d	0.494 ± 0.007	0.502 ± 0.005	0.483 ± 0.008
85Rb	86Rb	556 IT	1.017 ± 0.003	m	0.056 ± 0.003		0.057 ± 0.007
87Rb	88Rb	0 B-	17.78 ± 0.11	m	0.122 ± 0.003	0.11 ± 0.003	0.12 ± 0.005
84Sr	85Sr	0 EC	64.85 ± 0.007	d	0.74 ± 0.06	0.695 ± 0.006	
84Sr	85Sr	238.7 IT, EC	67.63 ± 0.04	m	0.623 ± 0.06	0.6138 ± 0.0006	0.61 ± 0.07
86Sr	87Sr	388.5 IT, EC	2.815 ± 0.012	h	0.77 ± 0.06	0.769 ± 0.004	0.97 ± 0.03
89Y	90Y	681.7 IT, B-	3.19 ± 0.06	h	0.001 ± 0.0002	0.00104 ± 0.00002	0.00172 ± 0.0001
94Zr	95Zr	0 B-	64.032 ± 0.006	d	0.0494 ± 0.0017	0.0506 ± 0.0009	
96Zr	97Zr	0 B-	16.744 ± 0.011	m	0.0229 ± 0.001	0.02155 ± 0.00005	0.039 ± 0.002
93Nb	94Nb	40.9 IT, B-	6.263 ± 0.004	m		0.862 ± 0.014	
94Zr	95Nb	0 B-	34.991 ± 0.006	d	0.0488 ± 0.0017	0.0546 ± 0.0008	
96Zr	97Nb	0 B-	72.1 ± 0.7	m	0.0229 ± 0.001	0.0197 ± 0.0002	
96Zr	97Nb	743.4 IT	52.7 ± 1.8	s	0.0227 ± 0.001	0.01975 ± 0.00006	
93Nb	94Nb	0 B-	20300 ± 1600	y	1.15 ± 0.05		
98Mo	99Mo	0 B-	2.7479 ± 0.0005	d	0.13 ± 0.006	0.132 ± 0.003	0.123 ± 0.004
100Mo	101Mo	0 B-	14.61 ± 0.03	m	0.199 ± 0.003	0.207 ± 0.007	
98Mo	99Tc	0 IT, B-	6.0067 ± 0.001	h	0.13 ± 0.006	0.1133 ± 0.0006	0.123 ± 0.003
100Mo	101Tc	0 B-	14.22 ± 0.01	m	0.199 ± 0.003	0.199 ± 0.003	0.189 ± 0.012
99Tc	100Tc	0 B-, EC	15.8 ± 0.1	s	22.8 ± 1.3		22.6 ± 1.5
96Ru	97Ru	0 EC	2.9 ± 0.1	d	0.29 ± 0.02	0.2295 ± 0.0012	
102Ru	103Ru	0 B-	39.26 ± 0.02	d	1.27 ± 0.04	1.154 ± 0.008	
104Ru	105Ru	0 B-	4.44 ± 0.02	h	0.491 ± 0.01	0.489 ± 0.014	0.862 ± 0.014
102Ru	103Ru	238.2 IT	1.69 ± 0.07	ms			0.115 ± 0.022
103Rh	104Rh	0 B-, EC	42.3 ± 0.4	s	143.5 ± 1.5	170 ± 3	171 ± 32
103Rh	104Rh	129 IT, B-	4.34 ± 0.03	m	10.6 ± 3		
104Ru	105Rh	0 B-	35.36 ± 0.06	h	0.491 ± 0.01	0.5039 ± 0.0013	
104Ru	105Rh	129.8 IT	43 ± 0.3	s	0.139 ± 0.005	0.119 ± 0.002	
108Pd	109Pd	0 B-	13.7012 ± 0.0024	h	7.6 ± 0.5	8.34 ± 0.13	
108Pd	109Pd	189 IT	4.696 ± 0.003	m	0.185 ± 0.01	0.1701 ± 0.0005	0.185 ± 0.01
110Pd	111Pd	172.2 IT, B-	5.5 ± 0.1	h	0.033 ± 0.003	0.0137 ± 0.0002	
107Ag	108Ag	0 B-, EC	2.395 ± 0.006	m	37.6 ± 1.2	37.9 ± 0.9	44 ± 7
108Pd	109Ag	88 IT	39.6 ± 0.2	s	7.6 ± 0.4	8.894 ± 0.006	
109Ag	110Ag	0 B-, EC	24.56 ± 0.11	s	87.2 ± 3	71.3 ± 0.3	84 ± 8
109Ag	110Ag	116.5 B-, IT	249.78 ± 0.02	d	3.95 ± 0.05	3.95 ± 0.15	
114Cd	115Cd	0 B-	53.46 ± 0.05	h	0.294 ± 0.016	0.325 ± 0.004	
114Cd	115Cd	181 B-	44.6 ± 0.3	d	0.036 ± 0.007		

Target Isotope	Energy Mode	Half-life	$s_0$ (Atlas)	$s_0$ (IUPAC)	$s_0$ (Budapest)	
112Sn 113In	391.7 IT	99.476 ± 0.023	m	0.8 ± 0.04	0.54 ± 0.004	
113In 114In	502 IT	43.1 ± 0.06	ms	3.1 ± 0.7		
113In 114In	190.3 IT, EC	49.51 ± 0.01	d	8.1 ± 0.8	8.48 ± 0.11	
113In 114In	0 B-, EC	71.9 ± 0.01	s	11.6 ± 0.9		
114Cd 115In	336.2 IT, B-	4.486 ± 0.004	h	0.28 ± 0.016	0.315 ± 0.005	
115In 116In	127.3 B-	54.29 ± 0.17	m	162 ± 12	159 ± 5	162.2 ± 2.2
115In 116In	289.7 IT	2.18 ± 0.04	s	81 ± 8		44 ± 3
112Sn 113Sn	0 EC	115.09 ± 0.03	d	0.8 ± 0.04	0.541 ± 0.007	
112Sn 113Sn	77.4 IT, EC	21.4 ± 0.4	m	0.29 ± 0.03		
116Sn 117Sn	314.6 IT	13.76 ± 0.04	d	0.006 ± 0.002	0.006 ± 0.000011	
122Sn 123Sn	24.6 B-	40.06 ± 0.01	m	0.146 ± 0.008	0.146 ± 0.0007	0.146 ± 0.001
124Sn 125Sn	0 B-	9.64 ± 0.03	d	0.0042 ± 0.0013	0.00444 ± 0.00007	
124Sn 125Sn	27.5 B-	9.52 ± 0.05	m	0.13 ± 0.005	0.119 ± 0.002	0.147 ± 0.006
121Sb 122Sb	0 B-, EC	2.7238 ± 0.0002	d	5.83 ± 0.11	6.3 ± 0.16	6.68 ± 0.02
121Sb 122Sb	163.6 IT	4.21 ± 0.02	m	0.06 ± 0.01		0.063 ± 0.007
123Sb 124Sb	0 B-	60.2 ± 0.03	d	3.94 ± 0.12	4.05 ± 0.1	
123Sb 124Sb	10.9 IT, B-	93 ± 5	s	0.037 ± 0.01	0.02613 ± 0.00004	0.021 ± 0.002
123Sb 124Sb	36.8 IT	20.2 ± 0.2	m	0.019 ± 0.01		
124Sn 125Sb	0 B-	2.75855 ± 0.00025	y	0.134 ± 0.005	0.00385 ±	
130Te 131Te	0 B-	25 ± 0.1	m	0.187 ± 0.01		0.27 ± 0.003
130Te 131Te	0 B-, IT	30 ± 2	h	0.01 ± 0.003		
127I 128I	0 B-, EC	24.99 ± 0.02	m	6.15 ± 0.06	5.39 ± 0.12	4.74 ± 0.06
130Te 131I	0 B-	8.0233 ± 0.0019	d	0.195 ± 0.01	0.179 ± 0.002	
133Cs 134Cs	0 B-, EC	2.0652 ± 0.0004	y	30.3 ± 1.1	30.8 ± 1.3	
133Cs 134Cs	138.7 IT	2.912 ± 0.002	h	2.6 ± 0.1	2.77 ± 0.05	2.46 ± 0.11
130Ba 131Ba	0 EC	11.5 ± 0.06	d	8.7 ± 0.9	9.8 ± 0.14	
130Ba 131Ba	187.1 IT	14.6 ± 0.2	m	0.98 ± 0.05		
132Ba 133Ba	288.2 IT, EC	38.9 ± 0.1	h	0.5 ±	0.8297 ± 0.0007	
138Ba 139Ba	0 B-	83.06 ± 0.28	m	0.404 ± 0.04	0.406 ± 0.003	0.44 ± 0.08
139La 140La	0 B-	1.6785 ± 0.00017	d	9.04 ± 0.04	9.27 ± 0.17	6.03 ± 0.02
140Ce 141Ce	0 B-	32.508 ± 0.01	d	0.58 ± 0.02	0.575 ± 0.005	
142Ce 143Ce	0 B-	33.039 ± 0.006	h	0.97 ± 0.02	0.968 ± 0.018	0.153 ± 0.004
136Ce 137Ce	254.3 IT, EC	34.4 ± 0.3	h	0.95 ± 0.25		1 ± 0.3
136Ce 137Ce	0 EC	9 ± 0.3	h	6.5 ± 1		3.95 ± 0.18
141Pr 142Pr	0 B-, EC	19.12 ± 0.04	h	11.5 ± 0.3	11.15 ± 0.07	11.5 ± 1.3
146Nd 147Nd	0 B-	10.98 ± 0.01	d	1.49 ± 0.06	1.32 ± 0.19	
148Nd 149Nd	0 B-	1.728 ± 0.001	h	2.58 ± 0.07	2.464 ± 0.007	
150Nd 151Nd	0 B-	12.44 ± 0.07	m	1.04 ± 0.04	1.049 ± 0.013	
148Nd 149Pm	0 B-	53.08 ± 0.05	h	2.58 ± 0.07	2.38 ± 0.03	
150Nd 151Pm	0 B-	28.4 ± 0.04	h	1.04 ± 0.04	0.9477 ± 0.0009	
152Sm 153Sm	0 B-	1.92855 ± 0.00005	d	206 ± 6	210 ± 2	
154Sm 155Sm	0 B-	22.3 ± 0.2	m	8.3 ± 0.5	7.7 ± 0.15	
151Eu 152Eu	0 EC, B-	13.522 ± 0.016	y	5900 ± 200	6885 ± 164	
151Eu 152Eu	45.6 B-, EC	9.3116 ± 0.0013	h	3300 ± 200	3219 ± 6	3284 ± 209
151Eu 152Eu	147.8 IT	96 ± 1	m	4 ± 2		4 ± 2
153Eu 154Eu	0 B-	8.601 ± 0.004	y	312 ± 7	316 ± 9	

Target Isotope	Energy Mode	Half-life		$S_0(\text{Atlas})$	$S_0(\text{IUPAC})$	$S_0(\text{Budapest})$
152Gd 153Gd	0 EC	240.4 ± 1	d	735 ± 20	755 ± 15	
158Gd 159Gd	0 B-	18.479 ± 0.007	h	2.2 ± 0.2	2.18 ± 0.03	
160Gd 161Gd	0 B-	3.55 ± 0.05	m	1.4 ± 0.3	1.54 ± 0.04	
159Tb 160Tb	0 B-	73.2 ± 0.2	d	23.4 ± 0.4	23.7 ± 0.7	
164Dy 165Dy	0 B-	2.334 ± 0.001	h	2610 ± 280	2726 ± 71	1050 ± 90
164Dy 165Dy	108.2 IT, B-	1.257 ± 0.006	m	1610 ± 240	1697 ± 2	1606 ± 53
165Ho 166Ho	0 B-	26.795 ± 0.029	h	61.2 ± 1.1	58.9 ± 1.7	58.9 ± 1
170Er 171Er	0 B-	7.516 ± 0.002	h	8.85 ± 0.3	9.07 ± 0.2	
166Er 167Er	207.8 IT	2.269 ± 0.006	s	15 ± 2		15.1 ± 0.6
169Tm 170Tm	0 B-, EC	127.8 ± 0.6	d	105 ± 2	106 ± 2	
168Yb 169Yb	0 EC	32.018 ± 0.005	d	2300 ± 170	2875 ± 6	
174Yb 175Yb	0 B-	4.185 ± 0.001	d	63.2 ± 1.5	62.1 ± 1.4	34 ± 0.7
176Yb 177Yb	0 B-	1.911 ± 0.003	h	2.85 ± 0.05	2.93 ± 0.01	
174Yb 175Yb	514.9 IT	68.2 ± 0.3	ms			37 ± 4
175Lu 176Lu	122.9 B-, EC	3.664 ± 0.019	h	16.7 ± 0.4	16.7 ± 0.3	
176Lu 177Lu	0 B-	6.647 ± 0.04	d	2020 ± 70	2193 ± 3	2161 ± 103
176Lu 177Lu	970.2 IT, B-	160.4 ± 0.3	d	2.8 ± 0.7		
174Hf 175Hf	0 EC	70 ± 2	d	549 ± 7	576 ± 6	
178Hf 179Hf	275 IT	18.67 ± 0.04	s	53 ± 6	58.89 ± 0.05	63.5 ± 1.2
179Hf 180Hf	1141.5 IT, B-	5.47 ± 0.04	h	0.445 ± 0.003	0.452 ± 0.015	
180Hf 181Hf	0 B-	42.39 ± 0.06	d	13.04 ± 0.07	12.79 ± 0.15	
181Ta 182Ta	0 B-	114.43 ± 0.03	d	20.5 ± 0.5	20.5 ± 0.4	
181Ta 182Ta	519.6 IT	15.84 ± 0.1	m	0.013 ± 0.002		
186W 187W	0 B-	23.72 ± 0.06	h	38.1 ± 0.5	42.2 ± 0.7	41.8 ± 0.6
185Re 186Re	0 B-, EC	3.7186 ± 0.0017	d	112 ± 2	109.7 ± 1.4	130 ± 20
187Re 188Re	0 B-	17.005 ± 0.004	h	76.4 ± 1	74.5 ± 1.8	75 ± 3
187Re 188Re	172.1 IT	18.59 ± 0.04	m	2.05 ± 0.09	2.06 ± 0.05	
184Os 185Os	0 EC	93.6 ± 0.5	d	3000 ± 150	3752 ± 56	
190Os 191Os	0 B-	15.4 ± 0.1	d	13.1 ± 0.3	3.48 ± 0.06	
190Os 191Os	74.4 IT	13.1 ± 0.05	h	9.2 ± 0.7		
192Os 193Os	0 B-	30.11 ± 0.01	h	3.12 ± 0.16	3.1 ± 0.09	
193Ir 194Ir	0 B-	19.3 ± 0.1	h	111 ± 5	116.5 ± 1.9	111 ± 8
198Pt 199Pt	0 B-	30.8 ± 0.21	m	3.61 ± 0.11		3.7 ± 0.6
198Pt 199Pt	0 IT	13.6 ± 0.4	s	0.35 ± 0.04		
196Pt 197Pt	0 B-	19.8915 ± 0.0019	h	0.58 ± 0.03		0.71 ± 0.13
197Au 198Au	0 B-	2.6944 ± 0.0008	d	98.65 ± 0.09	98.65 ± 0.09	100.04 ± 0.15
198Pt 199Au	0 B-	3.139 ± 0.007	d	3.61 ± 0.11	3.37 ± 0.06	
196Hg 197Hg	0 EC	64.14 ± 0.05	h	3080 ± 180		
196Hg 197Hg	298.9 IT, EC	23.8 ± 0.1	h	107.3 ± 1.5	95.4 ± 1	
202Hg 203Hg	0 B-	46.594 ± 0.012	d	4.89 ± 0.05	4.34 ± 0.07	
204Hg 205hg	0 B-	5.14 ± 0.09	m	0.43 ± 0.1	0.439 ± 0.01	
206Pb 207Pb	1633.4 IT	0.805 ± 0.01	s			0.006 ± 0.0009
232Th 233Pa	0 B-	26.975 ± 0.013	d	7.35 ± 0.03	7.33 ± 0.12	
238U 239U	0 B-	23.45 ± 0.02	m	2.68 ± 0.019	3.1 ± 0.04	
238U 239Np	0 B-	2.356 ± 0.003	d	2.68 ± 0.019	2.66 ± 0.06	

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud		
			Atlas	±(%)	IUPAC	±(%)			Budapest	±(%)
177Yb	1.911±0.003	h	138.6±0.1	6.21903E-05	12.0	0.0000648	0.0			1.04±0.12
177Yb	1.911±0.003	h	150.3±0.1	0.000899168	11.1	0.000894	0.0			0.99±0.11
177Yb	1.911±0.003	h	899.2±0.1	3.05769E-05	9.6	0.0000312	0.0			1.02±0.10
177Yb	1.911±0.003	h	941.8±0.1	4.74201E-05	9.1	0.0000487	0.0			1.03±0.09
177Yb	1.911±0.003	h	1028.3±0.3	2.8763E-05	9.4	0.0000294	0.0			1.02±0.09
177Yb	1.911±0.003	h	1080.5±0.4	0.000259126	9.2	0.000268	0.0			1.03±0.09
177Yb	1.911±0.003	h	1120±0.4	2.61717E-05	9.1	0.0000274	0.0			1.05±0.09
177Yb	1.911±0.003	h	1150.1±0.2	3.03178E-05	9.3	0.0000296	0.0			0.98±0.09
177Yb	1.911±0.003	h	1241.8±0.4	0.000155476	10.0	0.000162	0.0			1.04±0.10
176Lu	3.664±0.019	h	88.361±0.009	0.017297412	5.5	0.0173	1.5			1.00±0.06
177Lu	6.647±0.04	d	112.9498±0.0004	0.03874332	3.6	0.0415	0.0	0.039597587	4.6	1.07±0.04 1.05±0.05
177Lu	6.647±0.04	d	208.3662±0.0004	0.064863816	3.5	0.0714	0.0			1.10±0.04
175Hf	70±2	d	343.4±0.08	0.008639088	3.8	0.00906	1.0			1.05±0.04
179Hf	18.67±0.04	s	214.335±0.003	0.159296459	11.3	0.177	0.2	0.182334606	1.8	1.11±0.11 0.97±0.02
180Hf	5.47±0.04	h	93.325±0.012	0.000121613	2.0	0.000124	0.5			1.02±0.02
180Hf	5.47±0.04	h	215.426±0.008	0.000577329	1.4	0.000591	1.5			1.02±0.02
180Hf	5.47±0.04	h	332.275±0.011	0.000668205	1.4	0.000674	2.1			1.01±0.03
180Hf	5.47±0.04	h	443.163±0.015	0.000581339	1.6	0.000588	1.9			1.01±0.02
180Hf	5.47±0.04	h	500.697±0.013	0.000101567	2.3	0.000102	0.9			1.00±0.02
181Hf	42.39±0.06	d	133.021±0.019	0.02319592	1.3	0.0237	0.5			1.02±0.01
181Hf	42.39±0.06	d	345.93±0.06	0.008097014	1.0	0.00793	0.0			0.98±0.01
181Hf	42.39±0.06	d	482.18±0.09	0.043115092	0.7	0.0456	0.9			1.06±0.01
182Ta	114.43±0.03	d	67.75001±0.00019	0.097573902	3.4	0.0908	0.0			0.93±0.03
182Ta	114.43±0.03	d	100.1065±0.0003	0.033378371	3.1	0.0318	0.0			0.95±0.03
182Ta	114.43±0.03	d	152.4308±0.0003	0.016400016	3.1	0.0161	0.7			0.98±0.03
182Ta	114.43±0.03	d	222.1096±0.0004	0.017721932	3.0	0.0178	1.0			1.00±0.03
182Ta	114.43±0.03	d	1121.3008±0.0017	0.08261973	3.0	0.0827	0.8			1.00±0.03
182Ta	114.43±0.03	d	1189.0503±0.0017	0.038409913	3.0	0.0388	0.8			1.01±0.03
182Ta	114.43±0.03	d	1221.4066±0.0017	0.063865052	3.0	0.0645	0.8			1.01±0.03
182Ta	114.43±0.03	d	1231.0157±0.0017	0.027082748	3.0	0.0272	0.7			1.00±0.03
187W	23.72±0.06	h	134.247±0.007	0.010887467	3.4	0.0113	0.7	0.011403671	1.9	1.04±0.03 0.99±0.02
187W	23.72±0.06	h	479.55±0.022	0.026882634	3.5	0.0297	1.0	0.028129055	1.9	1.10±0.04 1.06±0.02
187W	23.72±0.06	h	551.52±0.04	0.006250212	3.6	0.00691	0.5	0.006548965	2.3	1.11±0.04 1.06±0.02
187W	23.72±0.06	h	618.26±0.04	0.007728757	3.6	0.00865	0.5	0.008102037	2.3	1.12±0.04 1.07±0.02
187W	23.72±0.06	h	685.73±0.04	0.033603293	3.6	0.0371	0.5	0.03518847	2.2	1.10±0.04 1.05±0.02
187W	23.72±0.06	h	772.89±0.05	0.005074097	3.5	0.00561	0.7	0.005321713	2.0	1.11±0.04 1.05±0.02
186Re	3.7186±0.0017	d	122.33±0.1	0.002834791	2.0	0.00279	1.1	0.002680646	8.0	0.98±0.02 1.04±0.08
186Re	3.7186±0.0017	d	137.157±0.008	0.044284799	1.9	0.0433	0.7	0.05672246	0.6	0.98±0.02 0.76±0.01
188Re	17.005±0.004	h	155.041±0.004	0.081587839	4.2	0.0777	0.6	0.076773689	3.5	0.95±0.04 1.01±0.04
188Re	17.005±0.004	h	477.992±0.025	0.005474973	8.9	0.00529	0.8	0.005179007	2.9	0.97±0.09 1.02±0.03
188Re	17.005±0.004	h	632.981±0.021	0.006870555	7.9	0.00683	1.5	0.006454994	1.0	0.99±0.08 1.06±0.02
188Re	17.005±0.004	h	634.98±0.07	0.000794408	8.2	0.000808	1.6			1.02±0.08
188Re	17.005±0.004	h	829.47±0.04	0.002200725	7.4	0.00217	0.0			0.99±0.07
188Re	17.005±0.004	h	931.345±0.01	0.002952192	7.4	0.00285	0.0			0.97±0.07
188Re	18.59±0.04	m	92.43±0.03	0.000741736	6.7	0.000777	1.5			1.05±0.07
188Re	18.59±0.04	m	105.96±0.1	0.001557646	6.5	0.0015	1.3			0.96±0.07
185Os	93.6±0.5	d	646.116±0.009	0.005141348	6.4	0.00643	1.6			1.25±0.07
191Os	15.4±0.1	d	129.431±0.005	0.010959611	8.7	0.00291	1.7			0.27±0.09

Isotope	Half-life	Eg (keV)	k <sub>0</sub> Values				IUPAC/Atl	IUPAC/Bud			
			Atlas	±(%)	IUPAC	±(%)			Budapest	±(%)	Ratio
193Os	30.11±0.01	h	138.92±0.03	0.000596285	7.9	0.000535	1.5			0.90±0.08	
193Os	30.11±0.01	h	142.13±0.008	1.04902E-05	12.3	0.00000949	1.6			0.90±0.12	
193Os	30.11±0.01	h	251.62±0.04	3.03664E-05	9.7	0.0000304	0.0			1.00±0.10	
193Os	30.11±0.01	h	280.444±0.023	0.000173916	8.2	0.000179	0.5			1.03±0.08	
193Os	30.11±0.01	h	298.83±0.05	2.59494E-05	10.6	0.0000283	0.0			1.09±0.11	
193Os	30.11±0.01	h	321.59±0.04	0.000178333	8.1	0.000178	0.9			1.00±0.08	
193Os	30.11±0.01	h	361.81±0.05	4.14087E-05	10.2	0.0000381	0.0			0.92±0.10	
193Os	30.11±0.01	h	387.48±0.03	0.000176125	8.1	0.000173	0.1			0.98±0.08	
193Os	30.11±0.01	h	460.49±0.03	0.000552116	8.1	0.000555	1.4			1.01±0.08	
194Ir	19.3±0.1	h	293.541±0.014	0.018916853	12.8	0.0203	1.8	0.018281687	3.4	1.07±0.13	1.11±0.04
194Ir	19.3±0.1	h	328.448±0.014	0.099124309	13.7	0.103	1.0	0.09452463	3.3	1.04±0.14	1.09±0.03
194Ir	19.3±0.1	h	645.146±0.02	0.008928755	14.3	0.00938	0.0	0.008517604	2.7	1.05±0.14	1.10±0.03
194Ir	19.3±0.1	h	938.69±0.025	0.004540045	14.1	0.00476	0.0			1.05±0.14	
198Au	2.6944±0.0008	d	411.80205±0.00017		1	0.1	1.0	0.968879878	0.2	1.00±0.00	1.03±0.00
199Au	3.139±0.007	d	158.37947±0.00009	0.001108062	3.5	0.00103	1.5			0.93±0.04	
199Au	3.139±0.007	d	208.20597±0.00011	0.000241557	3.7	0.000226	1.0			0.94±0.04	
197Hg	23.8±0.1	h	133.98±0.05	0.000561406	1.6	0.000499	1.0			0.89±0.02	
203Hg	46.594±0.012	d	279.1952±0.001	0.012395115	1.0	0.011	1.7			0.89±0.02	
205hg	5.14±0.09	m	203.7±0.2	6.77094E-06	51.1	0.00000691	0.2			1.02±0.51	
233Pa	26.975±0.013	d	300.129±0.005	0.004369001	3.2	0.00437	0.3			1.00±0.03	
233Pa	26.975±0.013	d	311.904±0.005	0.025320346	0.7	0.0252	0.6			1.00±0.01	
233Pa	26.975±0.013	d	340.476±0.005	0.002959005	0.8	0.00295	0.7			1.00±0.01	
233Pa	26.975±0.013	d	375.404±0.005	0.000452787	1.1	0.000449	0.7			0.99±0.01	
233Pa	26.975±0.013	d	398.492±0.005	0.000932054	1.1	0.000926	0.5			0.99±0.01	
233Pa	26.975±0.013	d	415.764±0.005	0.001156461	0.6	0.00116	0.9			1.00±0.01	
239U	23.45±0.02	m	74.664±0.001	0.011492536	2.5	0.0133	1.2			1.16±0.03	
239Np	2.356±0.003	d	106.123±0.002	0.006143368	3.9	0.00652	1.5			1.06±0.04	
239Np	2.356±0.003	d	209.753±0.002	0.000798871	1.1	0.00078	0.5			0.98±0.01	
239Np	2.356±0.003	d	277.599±0.001	0.003373013	1.0	0.0034	0.8			1.01±0.01	
239Np	2.356±0.003	d	285.46±0.002	0.000184535	1.5	0.000183	0.0			0.99±0.01	
239Np	2.356±0.003	d	315.88±0.003	0.000373741	1.4	0.000368	1.5			0.98±0.02	
239Np	2.356±0.003	d	334.31±0.002	0.000481192	1.2	0.000481	1.0			1.00±0.02	



**Table 3.** Energy-ordered table of  $k_0$  values derived from *Atlas of Neutron Resonances* [3] thermal neutron radiative cross sections and evaluated  $\gamma$ -ray transition probabilities [4,5].

Target	Half-life	$E_g(\text{keV})$	$k_0(\text{BNL})$	Target	Half-life	$E_g(\text{keV})$	$k_0(\text{BNL})$	Target	Half-life	$E_g(\text{keV})$	$k_0(\text{BNL})$
98Mo	2.7479 d	2.17	4.78E-14	98Mo	2.7479 d	40.58	6.98E-06	150Nd	28.4 h	64.88	1.59E-05
98Mo	6.0067 h	2.17	5.06E-14	186W	23.72 h	40.75	2.45E-06	148Nd	1.728 h	65.23	3.31E-07
150Nd	28.4 h	4.82	5.13E-07	46Ca	4.536 d	41.06	9.11E-11	148Nd	1.728 h	65.42	6.62E-07
100Mo	14.61 m	6.28	2.27E-06	232Th	26.975 d	41.66	9.27E-06	181Ta	114.43 d	65.72	6.92E-03
180Hf	42.39 d	6.30	6.17E-06	190Os	15.4 d	41.85	1.94E-06	150Nd	28.4 h	65.83	9.68E-06
186W	23.72 h	7.10	4.20E-06	102Ru	39.26 d	42.63	4.30E-07	192Os	30.11 h	65.87	3.31E-07
168Yb	32.018 d	8.41	1.25E-04	181Ta	114.43 d	42.72	6.57E-04	74Ge	82.78 m	66.00	4.29E-06
100Mo	14.61 m	9.32	8.79E-06	238U	23.45 m	43.53	9.50E-04	74Ge	82.78 m	66.00	6.19E-06
82Kr	1.83 h	9.41	2.41E-03	186W	23.72 h	43.66	2.49E-06	74Se	119.79 d	66.05	1.37E-04
136Ce	9.0 h	10.61	1.43E-06	238U	2.356 d	44.66	3.04E-05	150Nd	12.44 m	67.02	1.57E-07
123Sb	93 s	10.86	9.31E-11	108Pd	13.7012 h	44.70	4.34E-07	148Nd	1.728 h	67.20	9.38E-07
133Cs	2.912 h	11.24	4.43E-04	81Br	6.13 m	45.95	6.64E-05	164Dy	2.334 h	67.71	1.35E-03
132Ba	38.9 h	12.33	1.18E-07	190Os	15.4 d	47.05	1.02E-06	181Ta	114.43 d	67.75	9.76E-02
170Er	7.516 h	12.39	5.04E-06	238U	2.356 d	49.41	2.80E-05	238U	2.356 d	67.86	2.34E-05
151Eu	96 m	12.60	7.54E-05	198Pt	3.139 d	49.83	9.98E-06	164Dy	1.257 m	67.90	7.00E-04
72Ge	0.499 s	13.06	3.54E-06	71Ga	14.10 h	50.88	5.53E-06	152Sm	1.92855 d	68.26	9.96E-06
152Gd	240.4 d	14.06	3.91E-06	168Yb	32.018 d	51.51	1.23E-06	139La	1.6785 d	68.92	1.04E-04
74Se	119.79 d	14.88	1.48E-07	232Th	26.975 d	51.80	2.65E-07	150Nd	12.44 m	68.98	1.07E-05
100Mo	14.61 m	15.61	5.59E-09	154Sm	22.3 m	53.10	3.92E-06	148Nd	1.728 h	69.51	1.38E-06
71Ga	39.68 ms	16.40	1.32E-04	102Ru	39.26 d	53.28	3.67E-05	152Sm	1.92855 d	69.67	3.62E-02
186W	23.72 h	16.45	7.73E-06	72Ge	0.499 s	53.53	4.10E-04	152Gd	240.4 d	69.67	4.73E-04
232Th	26.975 d	17.20	2.71E-06	152Sm	1.92855 d	54.19	1.46E-05	150Nd	28.4 h	69.70	3.99E-06
151Eu	96 m	18.21	3.31E-04	130Ba	11.5 d	54.89	1.44E-07	184Os	93.6 d	71.31	1.75E-05
124Sn	2.75855 y	19.80	2.72E-08	238U	23.45 m	55.18	1.95E-08	164Dy	2.334 h	71.50	2.22E-04
152Gd	240.4 d	19.81	2.34E-08	103Rh	4.34 m	55.81	2.80E-04	160Gd	3.55 m	71.57	2.42E-06
152Sm	1.92855 d	19.81	6.51E-07	160Gd	3.55 m	56.29	1.53E-04	176Lu	6.647 d	71.64	1.08E-03
168Yb	32.018 d	20.74	6.95E-05	142Ce	33.039 h	57.36	1.89E-04	186W	23.72 h	72.00	1.37E-02
148Nd	1.728 h	22.70	1.16E-07	179Hf	5.47 h	57.55	3.41E-04	148Nd	1.728 h	72.75	1.27E-05
70Ge	20.4 ms	23.44	7.88E-06	164Dy	1.257 m	57.80	4.73E-04	148Nd	53.08 h	72.98	6.61E-10
74Se	119.79 d	24.38	3.32E-06	164Dy	2.334 h	57.86	1.31E-03	192Os	30.11 h	73.04	4.53E-04
139La	1.6785 d	24.60	1.36E-06	158Gd	18.479 h	58.00	1.81E-04	148Nd	1.728 h	74.32	2.37E-05
150Nd	28.4 h	25.69	8.16E-06	150Nd	12.44 m	58.28	3.14E-06	148Nd	1.728 h	74.66	2.10E-05
154Sm	22.3 m	25.69	1.37E-04	153Eu	8.601 y	58.40	8.73E-05	238U	23.45 m	74.66	1.15E-02
121Sb	4.21 m	26.09	1.94E-07	148Nd	1.728 h	58.53	3.02E-05	232Th	26.975 d	75.27	8.61E-04
232Th	26.975 d	28.56	4.70E-05	59Co	10.467 m	58.60	1.48E-02	152Gd	240.4 d	75.42	1.52E-05
186W	23.72 h	29.23	7.39E-06	148Nd	1.728 h	58.88	2.76E-05	152Sm	1.92855 d	75.42	1.48E-03
86Kr	76.3 m	29.40	5.78E-09	110Pd	5.5 h	59.77	7.66E-08	148Nd	1.728 h	75.69	4.86E-06
164Dy	2.334 h	29.72	3.97E-04	150Nd	28.4 h	59.93	2.09E-07	121Sb	4.21 m	76.06	7.99E-07
148Nd	1.728 h	30.00	3.70E-07	150Nd	28.4 h	61.00	5.89E-08	150Nd	28.4 h	76.22	1.71E-06
154Sm	22.3 m	30.50	1.47E-04	121Sb	4.21 m	61.41	3.26E-04	148Nd	1.728 h	77.10	1.30E-05
238U	23.45 m	31.13	1.49E-05	238U	2.356 d	61.46	3.04E-04	198Pt	30.8 m	77.20	4.15E-05
150Nd	12.44 m	31.67	3.82E-06	154Sm	22.3 m	61.55	5.87E-05	151Eu	96 m	77.23	1.80E-04
181Ta	114.43 d	31.74	1.15E-03	74Ge	47.7 s	61.92	2.03E-09	196Hg	23.8 h	77.35	4.81E-07
82Kr	1.83 h	32.15	2.14E-05	104Ru	4.44 h	62.39	1.25E-06	196Pt	19.8915 h	77.35	2.70E-04
150Nd	28.4 h	35.20	2.85E-07	102Ru	39.26 d	62.41	3.62E-08	186W	23.72 h	77.37	8.74E-06
124Sn	2.75855 y	35.49	7.98E-06	150Nd	28.4 h	62.91	1.75E-06	112Sn	21.4 m	77.38	5.86E-10
114Cd	53.46 h	35.57	6.61E-06	160Gd	3.55 m	62.91	2.42E-06	160Gd	3.55 m	77.39	4.31E-05
186W	23.72 h	36.38	9.07E-06	154Sm	22.3 m	63.10	2.94E-06	74Ge	47.7 s	77.86	5.40E-10
148Nd	1.728 h	36.70	3.86E-07	168Yb	32.018 d	63.12	1.59E-02	169Tm	127.8 d	78.59	4.42E-05
79Br	4.4205 h	37.05	1.26E-02	187Re	18.59 m	63.60	3.12E-03	154Sm	22.3 m	78.65	6.66E-05
104Ru	35.36 h	38.72	4.69E-07	150Nd	12.44 m	63.81	2.92E-07	130Ba	11.5 d	78.73	1.03E-06
102Ru	39.26 d	39.76	5.73E-06	139La	1.6785 d	64.13	1.89E-05	160Gd	3.55 m	79.41	2.42E-06
232Th	26.975 d	40.35	1.92E-05	154Sm	22.3 m	64.50	1.96E-06	158Gd	18.479 h	79.51	3.40E-06

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
154Sm	22.3 m	80.00	8.32E-06	179Hf	5.47 h	93.33	1.22E-04	148Nd	1.728 h	107.79	1.82E-06
130Te	8.0233 d	80.19	2.84E-05	168Yb	32.018 d	93.61	9.28E-04	164Dy	1.257 m	108.16	1.76E-01
148Nd	1.728 h	80.31	9.60E-06	159Tb	73.2 d	93.92	1.74E-04	96Ru	2.9 d	108.79	3.98E-07
153Eu	8.601 y	80.40	6.27E-05	150Nd	12.44 m	94.40	1.35E-07	124Sn	2.75855 y	109.28	9.22E-08
165Ho	26.795 h	80.57	5.08E-02	176Yb	1.911 h	94.40	2.07E-07	130Te	25 m	109.40	6.46E-07
150Nd	12.44 m	80.74	2.02E-06	164Dy	2.334 h	94.70	3.38E-01	139La	1.6785 d	109.42	2.95E-04
100Mo	14.61 m	80.92	1.56E-05	148Nd	1.728 h	94.88	8.83E-07	150Nd	28.4 h	109.56	7.21E-07
74Se	119.79 d	80.94	9.47E-07	164Dy	2.334 h	95.93	8.74E-05	164Dy	2.334 h	109.59	5.56E-05
104Ru	4.44 h	81.20	9.84E-07	164Dy	1.257 m	95.96	2.28E-03	168Yb	32.018 d	109.78	6.27E-03
153Eu	8.601 y	81.99	6.94E-05	74Se	119.79 d	96.73	4.21E-04	181Ta	114.43 d	110.41	2.06E-04
175Lu	3.664 h	82.10	1.36E-05	192Os	30.11 h	96.82	1.38E-05	124Sn	2.75855 y	110.90	1.48E-09
190Os	15.4 d	82.43	9.64E-06	152Sm	1.92855 d	96.88	5.36E-05	238U	23.45 m	111.00	4.71E-06
130Ba	11.5 d	82.58	1.97E-08	148Nd	1.728 h	96.90	7.17E-07	193Ir	19.3 h	111.40	1.29E-05
152Gd	240.4 d	83.37	3.85E-05	148Nd	1.728 h	97.00	3.09E-05	96Zr	16.744 m	111.60	9.57E-09
152Sm	1.92855 d	83.37	1.47E-03	160Gd	3.55 m	97.04	5.04E-06	170Er	7.516 h	111.62	3.38E-03
154Sm	22.3 m	84.10	5.97E-07	160Gd	3.55 m	97.04	5.04E-06	150Nd	12.44 m	112.15	9.88E-07
169Tm	127.8 d	84.25	3.22E-02	152Gd	240.4 d	97.43	5.67E-03	148Nd	1.728 h	112.52	2.54E-06
181Ta	114.43 d	84.68	6.26E-03	152Sm	1.92855 d	97.43	5.91E-03	71Ga	14.10 h	112.52	7.49E-05
150Nd	12.44 m	85.12	1.73E-05	150Nd	12.44 m	97.87	1.23E-07	176Lu	6.647 d	112.95	3.87E-02
170Er	7.516 h	85.60	9.91E-06	150Nd	28.4 h	98.05	3.04E-06	150Nd	28.4 h	113.10	8.16E-08
160Gd	3.55 m	85.79	6.05E-06	192Os	30.11 h	98.70	2.32E-06	102Ru	39.26 d	113.25	2.94E-07
130Te	8.0233 d	85.90	9.69E-10	150Nd	28.4 h	98.74	4.94E-07	71Ga	14.10 h	113.50	3.16E-06
79Br	4.4205 h	85.90	1.03E-04	164Dy	2.334 h	98.80	7.95E-05	181Ta	114.43 d	113.67	4.46E-03
150Nd	12.44 m	86.08	4.49E-07	115In	54.29 m	99.81	4.76E-04	186W	23.72 h	113.75	9.51E-05
232Th	26.975 d	86.60	1.32E-03	150Nd	28.4 h	100.02	2.15E-05	174Yb	4.185 d	113.81	9.39E-03
238U	23.45 m	86.72	1.24E-05	150Nd	12.44 m	100.10	2.92E-07	174Hf	70 d	113.81	3.02E-05
159Tb	73.2 d	86.79	4.05E-02	181Ta	114.43 d	100.11	3.34E-02	150Nd	12.44 m	113.88	7.86E-07
110Pd	5.5 h	87.00	2.31E-08	186W	23.72 h	100.38	1.08E-05	148Nd	1.728 h	114.31	4.08E-04
136Ce	34.4 h	87.20	2.31E-09	150Nd	28.4 h	100.60	1.01E-07	96Ru	2.9 d	114.40	5.69E-09
164Dy	2.334 h	87.59	1.35E-03	179Hf	5.47 h	100.70	6.39E-07	102Ru	39.26 d	114.97	6.11E-07
164Dy	1.257 m	87.70	6.48E-04	81Br	35.282 h	100.89	2.05E-05	164Dy	2.334 h	115.10	6.75E-04
108Pd	39.6 s	88.03	1.46E-03	110Pd	5.5 h	101.80	2.23E-07	186W	23.72 h	115.50	6.38E-06
108Pd	13.7012 h	88.04	1.43E-03	150Nd	28.4 h	101.93	1.08E-05	100Mo	14.61 m	115.76	1.22E-07
238U	2.356 d	88.06	1.40E-06	238U	2.356 d	101.97	1.87E-06	181Ta	114.43 d	116.42	1.02E-03
175Lu	3.664 h	88.36	1.73E-02	160Gd	3.55 m	102.32	5.64E-04	109Ag	249.78 d	116.48	2.95E-06
150Nd	28.4 h	88.80	1.04E-07	150Nd	12.44 m	102.45	4.15E-06	115In	54.29 m	116.50	1.41E-03
174Hf	70 d	89.36	2.47E-04	150Nd	28.4 h	102.70	2.66E-07	170Er	7.516 h	116.66	3.80E-04
160Gd	3.55 m	89.43	2.02E-06	71Ga	39.68 ms	103.14	1.07E-03	150Nd	12.44 m	116.80	3.29E-04
152Gd	240.4 d	89.49	1.35E-05	152Gd	240.4 d	103.18	4.12E-03	148Nd	1.728 h	116.93	2.32E-06
152Sm	1.92855 d	89.49	1.21E-03	152Sm	1.92855 d	103.18	2.24E-01	124Sn	2.75855 y	116.96	3.55E-07
98Mo	6.0067 h	89.60	7.11E-09	186W	23.72 h	103.80	1.24E-05	151Eu	9.3116 h	117.30	3.64E-03
164Dy	2.334 h	89.75	2.70E-04	232Th	26.975 d	103.86	5.65E-04	168Yb	32.018 d	117.38	1.44E-05
151Eu	96 m	89.85	1.84E-02	108Pd	13.7012 h	103.90	3.66E-07	238U	23.45 m	117.66	3.22E-05
150Nd	12.44 m	89.96	1.29E-05	154Sm	22.3 m	104.32	1.96E-02	152Sm	1.92855 d	118.11	1.76E-06
154Sm	22.3 m	90.10	2.45E-06	100Mo	14.61 m	104.70	6.54E-07	168Yb	32.018 d	118.19	6.75E-04
148Nd	1.728 h	90.12	1.10E-06	150Nd	28.4 h	104.84	2.96E-05	110Pd	5.5 h	118.70	7.97E-08
146Nd	10.98 d	91.11	1.04E-03	150Nd	12.44 m	104.90	3.37E-07	164Dy	2.334 h	119.47	6.75E-04
150Nd	28.4 h	91.70	4.75E-08	168Yb	32.018 d	105.19	9.39E-07	164Dy	1.257 m	119.50	1.58E-04
232Th	26.975 d	92.10	1.32E-06	160Gd	3.55 m	105.64	2.98E-05	176Yb	1.911 h	119.70	2.07E-07
81Br	35.282 h	92.19	2.20E-04	100Mo	14.61 m	105.95	1.15E-06	109Ag	249.78 d	120.23	6.23E-06
130Ba	11.5 d	92.28	8.21E-07	187Re	18.59 m	105.96	1.56E-03	146Nd	10.98 d	120.48	1.47E-05
187Re	18.59 m	92.43	7.42E-04	238U	2.356 d	106.12	6.14E-03	74Se	119.79 d	121.12	2.11E-03
148Nd	1.728 h	92.89	1.19E-06	238U	2.356 d	106.47	1.14E-05	74Ge	47.7 s	121.15	8.78E-08
150Nd	28.4 h	92.97	2.85E-07	186W	23.72 h	106.60	3.23E-05	184Os	93.6 d	121.20	1.54E-06
186W	23.72 h	93.22	6.38E-06	192Os	30.11 h	107.01	8.89E-05	181Ta	114.43 d	121.50	6.20E-06

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
70Zn	2.45 m	121.52	4.93E-07	180Hf	42.39 d	136.26	3.13E-03	150Nd	12.44 m	149.61	2.47E-06
176Yb	1.911 h	121.60	1.53E-04	176Lu	6.647 d	136.72	2.94E-04	130Te	25 m	149.72	7.18E-04
160Gd	3.55 m	121.70	4.03E-07	180Hf	42.39 d	136.86	4.61E-04	150Nd	28.4 h	150.10	7.59E-08
150Nd	28.4 h	121.77	7.59E-07	148Nd	1.728 h	137.05	1.32E-06	176Yb	1.911 h	150.30	8.99E-04
151Eu	9.3116 h	121.78	1.52E+00	185Re	3.7186 d	137.16	4.43E-02	76Ge	11.30 h	150.60	6.36E-08
151Eu	13.522 y	121.78	1.10E+01	130Ba	11.5 d	137.36	5.25E-08	130Te	25 m	151.10	1.80E-06
185Re	3.7186 d	122.33	2.83E-03	81Br	35.282 h	137.40	2.73E-05	84Sr	64.850 d	151.16	1.19E-09
142Ce	33.039 h	122.40	1.38E-07	158Gd	18.479 h	137.52	4.71E-07	84Sr	67.63 m	151.19	1.07E-05
148Nd	1.728 h	122.42	5.46E-06	174Yb	4.185 d	137.66	5.72E-04	84Kr	4.480 h	151.20	9.59E-04
153Eu	8.601 y	123.07	9.05E-01	154Sm	22.3 m	138.30	1.96E-05	152Sm	1.92855 d	151.62	8.12E-05
186W	23.72 h	123.66	3.09E-05	115In	54.29 m	138.33	9.29E-02	181Ta	114.43 d	152.43	1.64E-02
130Ba	11.5 d	123.81	4.07E-05	150Nd	28.4 h	138.38	3.42E-07	151Eu	9.3116 h	152.90	3.08E-04
170Er	7.516 h	124.02	1.50E-03	186W	23.72 h	138.50	5.38E-06	164Dy	2.334 h	153.80	5.40E-04
238U	2.356 d	124.40	2.34E-06	176Yb	1.911 h	138.60	6.22E-05	164Dy	1.257 m	153.80	1.41E-02
115In	54.29 m	124.75	2.86E-04	133Cs	2.912 h	138.73	1.60E-06	186W	23.72 h	154.40	1.95E-05
150Nd	28.4 h	125.20	1.03E-07	133Cs	2.912 h	138.73	1.60E-06	192Os	30.11 h	154.74	4.20E-06
184Os	93.6 d	125.36	2.25E-05	150Nd	12.44 m	138.89	5.95E-05	187Re	17.005 h	155.00	3.17E-05
153Eu	8.601 y	125.39	1.57E-04	150Nd	28.4 h	138.90	2.28E-07	187Re	17.005 h	155.04	8.16E-02
151Eu	13.522 y	125.69	7.37E-03	192Os	30.11 h	138.92	5.96E-04	148Nd	1.728 h	155.10	7.17E-07
150Nd	12.44 m	125.74	2.02E-07	148Nd	1.728 h	139.21	1.08E-05	150Nd	28.4 h	155.50	2.09E-07
148Nd	1.728 h	126.63	2.37E-06	150Nd	28.4 h	139.28	4.18E-06	148Nd	1.728 h	155.87	1.26E-04
150Nd	28.4 h	126.80	2.47E-08	104Ru	4.44 h	139.33	8.94E-07	116Sn	13.76 d	156.02	3.25E-07
100Mo	14.22 m	127.22	1.08E-05	74Ge	47.7 s	139.68	6.75E-04	187Re	18.59 m	156.03	8.90E-05
133Cs	2.912 h	127.50	5.15E-03	142Ce	33.039 h	139.74	1.24E-06	150Nd	28.4 h	156.18	1.25E-06
133Cs	2.912 h	127.50	5.15E-03	98Mo	6.0067 h	140.51	6.05E-04	153Eu	8.601 y	156.20	2.19E-04
130Ba	11.5 d	128.09	1.97E-08	98Mo	2.7479 d	140.51	6.12E-04	76Ge	11.30 h	156.36	1.35E-06
81Br	35.282 h	129.29	4.30E-06	164Dy	2.334 h	140.54	1.99E-04	181Ta	114.43 d	156.39	6.25E-03
164Dy	2.334 h	129.39	4.77E-05	148Nd	1.728 h	141.06	8.28E-07	168Yb	32.018 d	156.73	3.57E-06
190Os	15.4 d	129.43	1.10E-02	130Te	25 m	141.20	2.94E-07	130Ba	11.5 d	157.15	2.46E-07
153Eu	8.601 y	129.50	3.14E-04	186W	23.72 h	141.22	8.06E-06	198Pt	3.139 d	158.38	1.11E-03
104Ru	43 s	129.57	1.07E-04	154Sm	22.3 m	141.41	5.19E-04	116Sn	13.76 d	158.56	1.33E-05
104Ru	4.44 h	129.78	1.07E-04	150Nd	28.4 h	141.70	8.54E-08	98Mo	2.7479 d	158.78	9.91E-08
84Kr	4.480 h	129.81	3.84E-06	192Os	30.11 h	142.13	1.05E-05	150Nd	12.44 m	158.79	7.86E-07
84Sr	67.63 m	129.82	1.26E-07	45Sc	18.75 s	142.53	2.82E-01	76Ge	11.30 h	159.11	3.88E-07
84Sr	64.850 d	129.83	4.94E-10	71Ga	14.10 h	142.53	6.01E-06	46Ca	3.3492 d	159.38	1.05E-06
78Kr	50 s	130.01	4.35E-06	58Fe	44.495 d	142.65	1.35E-06	76Ge	52.9 s	159.70	2.75E-05
196Hg	23.8 h	130.20	4.57E-06	98Mo	2.7479 d	142.68	1.44E-07	153Eu	8.601 y	159.90	2.24E-05
150Nd	28.4 h	130.43	5.70E-07	98Mo	6.0067 h	142.68	1.57E-07	151Eu	9.3116 h	160.00	1.54E-04
168Yb	32.018 d	130.52	4.11E-03	185Re	3.7186 d	143.00	3.48E-09	122Sn	40.06 m	160.32	1.02E-04
139La	1.6785 d	131.12	6.37E-04	150Nd	28.4 h	143.17	1.80E-06	178Hf	18.67 s	160.70	4.70E-03
153Eu	8.601 y	131.58	2.49E-04	48Ca	8.718 m	143.20	3.72E-08	174Hf	70 d	161.30	2.33E-06
148Nd	1.728 h	131.70	9.38E-08	150Nd	28.4 h	143.20	8.54E-08	76Se	17.36 s	162.00	2.64E-02
180Hf	42.39 d	133.02	2.32E-02	174Yb	4.185 d	144.86	1.63E-03	153Eu	8.601 y	162.09	2.46E-05
109Ag	249.78 d	133.33	2.71E-05	108Pd	13.7012 h	145.10	4.43E-07	98Mo	2.7479 d	162.37	7.79E-08
130Ba	11.5 d	133.61	2.98E-06	140Ce	32.508 d	145.44	3.69E-03	115In	2.18 s	162.39	5.25E-01
160Gd	3.55 m	133.68	6.45E-06	140Ce	32.508 d	145.44	3.69E-03	176Yb	1.911 h	162.50	2.85E-06
196Hg	23.8 h	133.98	5.61E-04	153Eu	8.601 y	146.05	5.82E-04	115In	54.29 m	162.60	1.98E-03
108Pd	13.7012 h	134.20	5.20E-07	150Nd	28.4 h	146.20	1.40E-07	184Os	93.6 d	162.85	3.73E-05
150Nd	28.4 h	134.22	1.71E-07	176Yb	1.911 h	147.30	8.03E-06	150Nd	28.4 h	162.94	7.40E-06
186W	23.72 h	134.25	1.09E-02	150Nd	28.4 h	147.53	1.29E-06	104Ru	4.44 h	163.46	2.95E-06
153Eu	8.601 y	134.84	1.61E-04	151Eu	13.522 y	148.01	1.36E-02	150Nd	28.4 h	163.58	1.31E-05
150Nd	28.4 h	134.90	3.42E-08	123Sb	60.2 d	148.21	1.14E-06	150Nd	12.44 m	163.60	1.68E-07
192Os	30.11 h	136.00	6.07E-08	150Nd	28.4 h	148.50	4.56E-07	130Te	8.0233 d	163.93	2.34E-07
74Se	119.79 d	136.00	7.16E-03	136Ce	9.0 h	148.83	1.60E-09	196Hg	23.8 h	164.97	4.39E-06
74Ge	47.7 s	136.01	3.51E-07	104Ru	4.44 h	149.10	3.31E-05	160Gd	3.55 m	165.21	1.05E-04

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
115In	54.29 m	165.50	1.38E-05	100Mo	14.22 m	179.60	2.38E-06	142Ce	33.039 h	197.60	4.13E-08
186W	23.72 h	165.67	1.08E-06	81Br	35.282 h	179.80	5.06E-06	170Er	7.516 h	197.70	4.46E-06
138Ba	83.06 m	165.86	1.05E-03	192Os	30.11 h	180.03	2.54E-05	168Yb	32.018 d	197.96	1.30E-02
153Eu	8.601 y	165.90	5.60E-05	153Eu	8.601 y	180.70	8.96E-05	148Nd	1.728 h	198.00	1.05E-06
150Nd	12.44 m	165.99	5.16E-07	192Os	30.11 h	181.00	4.42E-08	186W	23.72 h	198.34	2.12E-06
110Pd	5.5 h	166.00	7.97E-08	98Mo	2.7479 d	181.07	4.11E-05	181Ta	114.43 d	198.35	3.41E-03
238U	2.356 d	166.39	3.74E-06	160Gd	3.55 m	181.23	3.02E-05	74Ge	82.78 m	198.60	4.46E-05
152Sm	1.92855 d	166.55	4.67E-06	238U	2.356 d	181.70	1.92E-05	74Ge	82.78 m	198.60	6.44E-05
154Sm	22.3 m	167.16	9.79E-06	192Os	30.11 h	181.81	2.71E-05	74Se	119.79 d	198.61	1.82E-04
150Nd	28.4 h	167.75	7.02E-05	96Zr	16.744 m	182.90	4.65E-09	124Sn	2.75855 y	198.65	1.79E-08
150Nd	12.44 m	167.88	8.87E-07	150Nd	12.44 m	183.19	3.82E-06	148Nd	1.728 h	198.93	2.96E-05
150Nd	28.4 h	168.39	7.78E-06	154Sm	22.3 m	183.40	4.89E-07	150Nd	12.44 m	199.68	2.24E-06
160Gd	3.55 m	168.47	3.31E-06	104Ru	4.44 h	183.60	1.88E-06	238U	23.45 m	201.19	4.71E-07
186W	23.72 h	168.50	3.02E-06	100Mo	14.22 m	184.12	6.59E-06	192Os	30.11 h	201.50	3.86E-07
100Mo	14.61 m	169.00	1.14E-07	165Ho	26.795 h	184.41	1.16E-05	196Hg	23.8 h	201.80	1.49E-06
110Pd	5.5 h	169.10	3.51E-07	153Eu	8.601 y	184.72	8.29E-05	150Nd	28.4 h	201.96	7.40E-06
154Sm	22.3 m	169.10	9.79E-06	96Ru	2.9 d	185.00	1.54E-08	96Zr	16.744 m	202.50	4.24E-09
150Nd	12.44 m	169.20	6.28E-07	148Nd	1.728 h	185.49	2.21E-06	153Eu	8.601 y	202.50	6.72E-04
136Ce	34.4 h	169.26	1.15E-07	198Pt	30.8 m	185.80	9.20E-05	89Y	3.19 h	202.53	2.28E-05
187Re	18.59 m	169.54	1.48E-05	238U	23.45 m	186.15	7.59E-06	193Ir	19.3 h	202.91	2.27E-05
164Dy	2.334 h	170.22	2.86E-04	150Nd	28.4 h	186.59	1.52E-06	154Sm	22.3 m	203.10	9.79E-06
198Pt	30.8 m	170.60	6.11E-07	238U	23.45 m	187.40	1.55E-06	204Hg	5.14 m	203.70	6.77E-06
26Mg	9.4580 m	170.69	2.91E-06	100Mo	14.61 m	187.41	1.82E-06	94Zr	34.991 d	204.12	5.44E-08
150Nd	12.44 m	170.76	3.37E-06	153Eu	8.601 y	188.24	5.35E-03	124Sn	2.75855 y	204.14	4.23E-07
150Nd	12.44 m	170.76	2.42E-05	148Nd	1.728 h	188.64	3.81E-05	150Nd	28.4 h	204.17	1.10E-06
122Sn	40.06 m	170.90	8.16E-09	148Nd	1.728 h	188.80	2.21E-07	150Nd	28.4 h	205.70	7.59E-08
148Nd	1.728 h	171.17	6.84E-07	108Pd	4.696 m	188.90	5.37E-04	168Yb	32.018 d	205.99	1.23E-06
150Nd	12.44 m	171.40	1.23E-06	123Sb	60.2 d	189.61	1.85E-06	150Nd	12.44 m	206.16	3.59E-07
176Yb	1.911 h	171.50	1.55E-07	113In	49.51 d	190.27	9.84E-04	186W	23.72 h	206.24	1.76E-04
110Pd	5.5 h	172.20	2.58E-05	80Kr	13.10 s	190.46	1.74E-03	150Nd	28.4 h	206.70	3.04E-07
152Sm	1.92855 d	172.30	3.06E-06	160Gd	3.55 m	191.38	2.58E-05	150Nd	28.4 h	207.00	6.27E-08
124Sn	2.75855 y	172.72	2.60E-07	196Pt	19.8915 h	191.44	5.80E-05	151Eu	13.522 y	207.60	2.29E-03
152Gd	240.4 d	172.85	7.03E-06	151Eu	9.3116 h	191.60	1.54E-04	150Nd	12.44 m	207.70	3.82E-07
152Sm	1.92855 d	172.85	5.64E-04	198Pt	30.8 m	191.69	6.47E-05	166Er	2.269 s	207.80	2.67E-02
139La	1.6785 d	173.55	1.71E-04	100Mo	14.61 m	191.92	7.60E-05	124Sn	2.75855 y	208.08	3.32E-07
70Ge	20.4 ms	174.95	1.54E-03	238U	23.45 m	191.97	6.44E-07	148Nd	1.728 h	208.15	5.42E-05
164Dy	2.334 h	174.96	1.03E-04	148Nd	1.728 h	192.03	1.21E-05	198Pt	3.139 d	208.21	2.42E-04
150Nd	12.44 m	175.07	5.34E-05	58Fe	44.495 d	192.35	4.06E-06	148Nd	53.08 h	208.28	3.10E-08
170Er	7.516 h	175.63	1.47E-05	151Eu	13.522 y	192.60	2.64E-03	186W	23.72 h	208.29	8.40E-07
150Nd	12.44 m	176.09	2.36E-06	150Nd	28.4 h	192.90	6.27E-08	176Lu	6.647 d	208.37	6.49E-02
198Pt	30.8 m	176.20	7.74E-07	168Yb	32.018 d	193.15	2.67E-06	76Ge	11.30 h	208.98	1.59E-06
148Nd	1.728 h	176.27	1.05E-06	76Ge	11.30 h	194.76	2.99E-06	150Nd	28.4 h	209.00	1.46E-05
124Sn	2.75855 y	176.31	9.21E-06	76Ge	52.9 s	194.80	9.16E-07	153Eu	8.601 y	209.40	5.60E-05
159Tb	73.2 d	176.49	1.90E-05	150Nd	28.4 h	195.50	2.28E-07	151Eu	13.522 y	209.41	2.13E-03
150Nd	28.4 h	176.52	7.21E-06	153Eu	8.601 y	195.50	4.48E-05	164Dy	2.334 h	209.70	9.53E-05
150Nd	28.4 h	177.16	3.23E-05	154Sm	22.3 m	195.70	2.25E-06	238U	2.356 d	209.75	7.99E-04
168Yb	32.018 d	177.21	8.06E-03	100Mo	14.61 m	195.93	1.16E-05	170Er	7.516 h	210.10	1.16E-06
130Te	8.0233 d	177.21	2.89E-06	115In	54.29 m	196.50	1.41E-03	123Sb	60.2 d	210.31	1.59E-06
76Ge	11.30 h	177.28	3.02E-07	146Nd	10.98 d	196.64	7.56E-06	170Er	7.516 h	210.60	1.06E-04
148Nd	1.728 h	177.82	3.31E-06	238U	23.45 m	196.85	5.06E-07	158Gd	18.479 h	210.78	1.45E-06
96Zr	72.1 m	178.00	7.21E-09	153Eu	8.601 y	197.00	3.58E-05	76Ge	11.30 h	211.03	5.20E-05
154Sm	22.3 m	178.30	4.89E-07	159Tb	73.2 d	197.04	1.59E-02	148Nd	1.728 h	211.31	5.52E-04
186W	23.72 h	178.80	1.68E-05	150Nd	12.44 m	197.27	1.80E-06	150Nd	12.44 m	211.36	5.72E-07
124Sn	2.75855 y	178.84	4.63E-08	148Nd	1.728 h	197.40	2.76E-07	100Mo	14.61 m	211.98	1.90E-06
181Ta	114.43 d	179.39	7.30E-03	192Os	30.11 h	197.40	6.63E-07	151Eu	13.522 y	212.57	7.60E-03

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
168Yb	32.018 d	213.94	1.05E-06	142Ce	33.039 h	231.55	3.30E-05	198Pt	30.8 m	246.46	6.19E-05
148Nd	1.728 h	213.95	8.50E-06	238U	23.45 m	231.70	7.13E-07	159Tb	73.2 d	246.49	6.39E-05
176Yb	1.911 h	214.20	2.59E-08	84Sr	67.63 m	231.86	7.02E-05	130Ba	11.5 d	246.89	8.87E-07
178Hf	18.67 s	214.34	1.59E-01	153Eu	8.601 y	232.01	5.37E-04	150Nd	28.4 h	247.10	1.52E-07
81Br	35.282 h	214.80	3.29E-06	130Te	8.0233 d	232.18	2.80E-08	150Nd	28.4 h	247.80	2.47E-07
150Nd	28.4 h	215.30	7.59E-08	150Nd	28.4 h	232.43	8.73E-06	153Eu	8.601 y	247.93	1.54E-01
179Hf	5.47 h	215.43	5.77E-04	98Mo	6.0067 h	232.70	5.74E-11	232Th	26.975 d	248.38	4.03E-05
76Ge	11.30 h	215.50	4.83E-05	150Nd	28.4 h	232.70	7.40E-07	98Mo	2.7479 d	249.03	2.39E-08
76Ge	52.9 s	215.53	4.73E-05	150Nd	12.44 m	232.92	2.81E-07	150Nd	12.44 m	249.29	2.81E-06
159Tb	73.2 d	215.65	1.24E-02	100Mo	14.22 m	233.70	1.10E-06	74Se	119.79 d	249.30	1.11E-08
96Ru	2.9 d	215.70	2.84E-04	184Os	93.6 d	234.16	2.72E-05	130Ba	11.5 d	249.43	3.95E-06
130Ba	11.5 d	216.08	2.76E-05	192Os	30.11 h	234.58	7.18E-06	176Lu	6.647 d	249.67	1.26E-03
136Ce	9.0 h	217.03	7.02E-09	124Sn	9.64 d	234.70	1.49E-09	150Nd	28.4 h	250.50	7.59E-08
151Eu	9.3116 h	218.10	9.24E-06	94Zr	64.032 d	235.69	5.31E-07	148Nd	1.728 h	250.83	7.17E-07
96Zr	16.744 m	218.90	2.46E-08	150Nd	28.4 h	236.20	7.97E-07	174Yb	4.185 d	251.47	4.19E-04
192Os	30.11 h	219.00	1.21E-06	150Nd	28.4 h	236.60	1.35E-06	192Os	30.11 h	251.62	3.04E-05
76Ge	11.30 h	219.13	2.45E-07	150Nd	28.4 h	236.70	1.63E-06	151Eu	13.522 y	251.63	2.60E-02
192Os	30.11 h	219.13	3.86E-05	153Eu	8.601 y	237.00	1.34E-04	164Dy	1.257 m	251.73	1.05E-03
109Ag	249.78 d	219.35	2.65E-05	150Nd	28.4 h	237.10	4.37E-06	114Cd	53.46 h	252.00	1.41E-09
198Pt	30.8 m	219.36	1.08E-05	170Er	7.516 h	237.14	4.99E-05	150Nd	12.44 m	252.23	1.12E-06
153Eu	8.601 y	219.40	5.15E-05	151Eu	13.522 y	237.31	9.70E-04	96Zr	16.744 m	254.17	1.68E-07
154Sm	22.3 m	220.10	5.48E-07	158Gd	18.479 h	237.34	5.58E-07	148Nd	1.728 h	254.23	1.82E-06
151Eu	9.3116 h	220.80	2.77E-05	159Tb	73.2 d	237.64	1.85E-05	150Nd	28.4 h	254.28	1.42E-06
109Ag	249.78 d	221.08	2.51E-05	100Mo	14.22 m	238.25	1.24E-06	136Ce	34.4 h	254.29	2.89E-06
81Br	35.282 h	221.48	6.85E-04	148Nd	53.08 h	238.38	4.62E-09	123Sb	60.2 d	254.39	4.69E-06
130Te	25 m	221.57	3.45E-07	96Zr	72.1 m	238.40	7.21E-09	238U	2.356 d	254.40	2.55E-05
100Mo	14.61 m	221.80	4.10E-07	148Nd	1.728 h	238.61	1.89E-05	148Nd	53.08 h	254.57	1.12E-07
181Ta	114.43 d	222.11	1.77E-02	150Nd	12.44 m	238.63	4.04E-06	76Ge	11.30 h	254.74	3.56E-07
150Nd	12.44 m	222.18	3.93E-07	84Sr	67.63 m	238.78	2.30E-07	104Ru	4.44 h	254.88	1.25E-06
148Nd	1.728 h	224.49	5.08E-07	186W	23.72 h	239.19	1.06E-04	112Sn	115.09 d	255.13	2.88E-06
104Ru	4.44 h	225.08	2.32E-06	151Eu	13.522 y	239.42	3.10E-03	238U	23.45 m	255.25	6.44E-07
198Pt	30.8 m	225.36	4.32E-06	148Nd	1.728 h	239.60	2.76E-07	150Nd	12.44 m	255.68	1.25E-04
158Gd	18.479 h	226.04	1.58E-05	150Nd	12.44 m	239.60	3.14E-06	151Eu	9.3116 h	256.99	2.16E-04
168Yb	32.018 d	226.30	9.03E-08	130Ba	11.5 d	239.63	3.38E-06	148Nd	53.08 h	257.77	7.27E-09
238U	2.356 d	226.38	6.05E-05	159Tb	73.2 d	239.70	6.48E-06	150Nd	12.44 m	258.00	2.47E-07
148Nd	1.728 h	226.85	3.48E-06	198Pt	30.8 m	240.01	4.89E-06	148Nd	1.728 h	258.07	8.00E-06
150Nd	28.4 h	227.18	2.85E-06	150Nd	28.4 h	240.09	3.23E-05	150Nd	28.4 h	258.11	1.90E-06
150Nd	28.4 h	227.81	4.18E-07	148Nd	1.728 h	240.22	8.39E-05	232Th	26.975 d	258.45	1.81E-05
238U	2.356 d	227.83	1.19E-04	168Yb	32.018 d	240.33	4.15E-05	238U	23.45 m	258.47	5.98E-07
124Sn	2.75855 y	227.89	1.76E-07	102Ru	39.26 d	241.88	1.49E-06	160Gd	3.55 m	258.62	3.99E-05
238U	2.356 d	228.18	2.60E-03	139La	1.6785 d	241.96	5.92E-04	164Dy	2.334 h	259.53	1.38E-03
164Dy	2.334 h	228.30	3.97E-05	148Nd	53.08 h	242.10	3.96E-09	238U	23.45 m	260.77	5.29E-07
232Th	26.975 d	228.57	2.78E-06	98Mo	2.7479 d	242.29	9.57E-09	114Cd	53.46 h	260.90	3.05E-05
154Sm	22.3 m	228.70	1.37E-05	159Tb	73.2 d	242.50	2.32E-05	153Eu	8.601 y	260.90	4.93E-05
154Sm	22.3 m	229.00	7.83E-07	133Cs	2.0652 y	242.74	1.30E-04	186W	23.72 h	261.00	1.34E-05
150Nd	28.4 h	229.01	1.90E-07	133Cs	2.0652 y	242.74	1.30E-04	168Yb	32.018 d	261.08	6.09E-04
153Eu	8.601 y	229.01	5.37E-05	151Eu	13.522 y	244.70	2.93E+00	150Nd	28.4 h	261.40	9.49E-08
181Ta	114.43 d	229.32	8.59E-03	151Eu	9.3116 h	244.70	5.39E-03	186W	23.72 h	262.70	1.34E-05
109Ag	249.78 d	229.42	4.39E-06	193Ir	19.3 h	244.83	5.83E-05	104Ru	4.44 h	262.83	1.24E-04
148Nd	1.728 h	229.57	1.03E-05	115In	54.29 m	245.00	1.05E-03	115In	54.29 m	262.95	3.33E-03
174Hf	70 d	229.60	7.02E-05	104Ru	4.44 h	245.21	4.74E-07	148Nd	53.08 h	263.23	2.05E-07
150Nd	12.44 m	229.90	2.81E-07	148Nd	1.728 h	245.50	4.41E-06	148Nd	1.728 h	263.40	4.97E-07
71Ga	14.10 h	230.60	1.27E-05	148Nd	1.728 h	245.72	1.71E-05	150Nd	12.44 m	263.56	6.62E-06
159Tb	73.2 d	230.63	2.48E-04	154Sm	22.3 m	245.73	9.79E-04	181Ta	114.43 d	264.08	8.53E-03
114Cd	53.46 h	231.44	1.16E-05	186W	23.72 h	246.28	1.46E-04	109Ag	249.78 d	264.25	2.21E-06

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
76Ge	11.30 h	264.44	9.09E-05	150Nd	28.4 h	278.20	6.65E-08	130Ba	11.5 d	294.52	2.33E-07
74Ge	82.78 m	264.60	4.29E-04	124Sn	9.52 m	278.40	9.02E-08	168Yb	32.018 d	294.54	3.97E-07
74Ge	82.78 m	264.60	6.19E-04	115In	54.29 m	278.49	4.05E-03	96Zr	16.744 m	294.80	1.23E-08
74Se	119.79 d	264.66	7.24E-03	196Hg	23.8 h	279.00	1.02E-04	150Nd	28.4 h	294.80	1.14E-07
76Ge	52.9 s	264.70	4.83E-08	202Hg	46.594 d	279.20	1.24E-02	148Nd	1.728 h	294.80	1.21E-05
139La	1.6785 d	266.55	6.69E-04	202Hg	46.594 d	279.20	1.24E-02	102Ru	39.26 d	294.98	2.51E-05
164Dy	2.334 h	266.80	1.03E-04	74Ge	47.7 s	279.48	7.43E-08	100Mo	14.22 m	295.17	2.01E-07
151Eu	9.3116 h	266.91	2.46E-04	74Se	119.79 d	279.54	3.07E-03	150Nd	28.4 h	295.20	1.33E-07
109Ag	249.78 d	266.91	1.51E-05	74Ge	82.78 m	279.70	3.10E-07	109Ag	24.56 s	295.30	6.35E-05
114Cd	53.46 h	266.99	1.44E-06	74Ge	82.78 m	279.70	2.14E-06	153Eu	8.601 y	295.70	5.37E-05
153Eu	8.601 y	267.44	3.05E-04	164Dy	2.334 h	279.76	4.71E-02	130Te	8.0233 d	295.80	9.03E-09
130Te	25 m	267.50	4.31E-08	153Eu	8.601 y	279.90	6.72E-05	170Er	7.516 h	295.90	4.77E-03
148Nd	1.728 h	267.69	1.29E-04	154Sm	22.3 m	280.00	3.92E-06	151Eu	13.522 y	295.94	1.71E-01
76Ge	11.30 h	268.10	3.64E-07	150Nd	28.4 h	280.09	1.96E-06	153Eu	8.601 y	296.00	3.14E-05
150Nd	12.44 m	268.67	1.35E-06	104Ru	35.36 h	280.10	3.14E-06	185Re	3.7186 d	296.93	2.49E-07
176Yb	1.911 h	268.70	8.03E-06	130Te	25 m	280.17	1.80E-07	130Te	25 m	297.09	7.18E-08
196Pt	19.8915 h	268.78	3.66E-06	81Br	35.282 h	280.30	7.33E-06	130Te	25 m	297.09	4.45E-07
153Eu	8.601 y	269.80	1.57E-04	192Os	30.11 h	280.44	1.74E-04	96Zr	16.744 m	297.20	9.71E-09
151Eu	13.522 y	269.86	2.33E-03	232Th	26.975 d	280.61	7.28E-06	150Nd	12.44 m	297.30	8.98E-08
148Nd	1.728 h	270.17	2.28E-04	84Sr	67.63 m	281.01	3.35E-10	159Tb	73.2 d	297.30	2.87E-05
74Ge	82.78 m	270.20	1.29E-07	148Nd	53.08 h	281.24	1.59E-07	150Nd	28.4 h	297.80	3.23E-07
74Ge	82.78 m	270.20	1.86E-07	100Mo	14.22 m	281.60	1.10E-07	198Pt	30.8 m	298.20	1.34E-06
124Sn	9.64 d	270.60	4.57E-09	148Nd	1.728 h	282.40	3.59E-07	159Tb	73.2 d	298.58	8.04E-02
150Nd	28.4 h	270.72	5.70E-07	124Sn	9.64 d	282.45	7.89E-10	150Nd	28.4 h	298.60	5.13E-08
160Gd	3.55 m	270.87	3.55E-05	148Nd	1.728 h	282.46	1.31E-05	232Th	26.975 d	298.81	9.93E-05
150Nd	12.44 m	270.89	2.69E-06	174Yb	4.185 d	282.52	1.49E-02	192Os	30.11 h	298.83	2.59E-05
151Eu	9.3116 h	271.06	1.60E-02	160Gd	3.55 m	283.55	2.42E-04	130Te	25 m	299.94	4.09E-07
151Eu	13.522 y	271.13	3.03E-02	130Te	8.0233 d	284.31	6.60E-05	232Th	26.975 d	300.13	4.37E-03
232Th	26.975 d	271.56	2.14E-04	150Nd	12.44 m	284.70	3.59E-07	176Yb	1.911 h	300.50	2.85E-07
110Pd	5.5 h	272.00	1.32E-07	238U	2.356 d	285.46	1.85E-04	150Nd	12.44 m	300.58	1.54E-05
96Zr	16.744 m	272.40	3.42E-08	148Nd	53.08 h	285.95	6.61E-05	193Ir	19.3 h	300.74	2.65E-03
115In	54.29 m	272.40	2.24E-03	151Eu	13.522 y	285.98	3.88E-03	148Nd	1.728 h	301.13	8.00E-06
151Eu	9.3116 h	272.41	2.19E-03	124Sn	9.64 d	286.20	2.49E-10	153Eu	8.601 y	301.25	2.28E-04
130Te	8.0233 d	272.50	6.23E-07	108Pd	13.7012 h	286.30	5.59E-08	150Nd	28.4 h	301.80	1.14E-07
238U	2.356 d	272.84	1.80E-05	104Ru	4.44 h	286.30	5.36E-07	150Nd	12.44 m	301.80	5.39E-07
148Nd	1.728 h	273.24	3.86E-06	170Er	7.516 h	286.50	1.32E-06	238U	23.45 m	301.98	3.45E-07
81Br	35.282 h	273.48	2.43E-04	154Sm	22.3 m	287.10	2.94E-07	232Th	26.975 d	301.99	6.62E-06
148Nd	1.728 h	273.50	1.77E-06	148Nd	1.728 h	287.70	2.76E-07	75As	26.24 h	302.20	1.03E-05
158Gd	18.479 h	273.62	5.08E-08	148Nd	1.728 h	288.19	1.47E-05	130Te	8.0233 d	302.40	4.95E-08
153Eu	8.601 y	274.00	8.73E-05	232Th	26.975 d	288.42	1.06E-05	150Nd	28.4 h	302.50	2.28E-07
158Gd	18.479 h	274.16	4.14E-07	192Os	30.11 h	288.79	1.99E-05	150Nd	28.4 h	302.80	2.09E-07
100Mo	14.61 m	274.97	3.57E-07	71Ga	14.10 h	289.31	1.05E-04	186W	23.72 h	303.10	6.72E-07
150Nd	28.4 h	275.21	5.70E-05	110Pd	5.5 h	289.80	8.29E-07	115In	54.29 m	303.80	3.33E-03
146Nd	10.98 d	275.37	2.97E-05	192Os	30.11 h	290.00	6.63E-08	74Se	119.79 d	303.92	1.62E-04
148Nd	1.728 h	275.44	1.39E-05	153Eu	8.601 y	290.00	7.39E-05	238U	23.45 m	304.17	4.02E-07
151Eu	13.522 y	275.45	1.25E-02	158Gd	18.479 h	290.29	2.35E-06	84Kr	4.480 h	304.87	1.79E-04
150Nd	12.44 m	275.52	1.12E-07	148Nd	1.728 h	290.37	1.34E-06	96Zr	16.744 m	305.10	4.10E-09
186W	23.72 h	275.61	2.55E-06	150Nd	28.4 h	290.75	7.02E-06	153Eu	8.601 y	305.10	3.90E-04
132Ba	38.9 h	275.93	1.37E-06	168Yb	32.018 d	291.19	1.56E-06	148Nd	53.08 h	305.22	5.48E-08
148Nd	1.728 h	276.96	7.28E-06	123Sb	60.2 d	291.40	2.53E-06	158Gd	18.479 h	305.55	4.50E-06
148Nd	53.08 h	277.09	6.14E-07	150Nd	12.44 m	292.15	4.71E-07	71Ga	14.10 h	306.00	1.16E-05
170Er	7.516 h	277.43	9.58E-05	150Nd	28.4 h	292.40	9.49E-08	104Ru	35.36 h	306.10	9.64E-05
238U	2.356 d	277.60	3.37E-03	102Ru	39.26 d	292.70	4.75E-07	104Ru	4.44 h	306.66	1.52E-06
150Nd	28.4 h	277.62	5.13E-07	142Ce	33.039 h	293.27	6.88E-04	150Nd	28.4 h	306.74	2.01E-06
130Te	25 m	278.17	1.03E-06	193Ir	19.3 h	293.54	1.89E-02	100Mo	14.22 m	306.83	3.66E-04

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
139La	1.6785 d	307.08	2.99E-05	150Nd	12.44 m	320.09	5.16E-06	238U	2.356 d	334.31	4.81E-04
154Sm	22.3 m	307.30	2.74E-06	232Th	26.975 d	320.73	3.38E-06	150Nd	12.44 m	334.65	4.04E-07
168Yb	32.018 d	307.74	3.63E-03	124Sn	2.75855 y	321.04	5.61E-07	58Fe	44.495 d	334.80	3.68E-07
110Pd	5.5 h	308.10	1.12E-07	150Nd	12.44 m	321.06	1.68E-06	123Sb	60.2 d	335.80	2.16E-05
153Eu	8.601 y	308.20	5.37E-05	176Lu	6.647 d	321.32	1.35E-03	114Cd	4.486 h	336.24	6.86E-04
170Er	7.516 h	308.29	1.06E-02	192Os	30.11 h	321.59	1.78E-04	114Cd	53.46 h	336.24	7.21E-04
150Nd	28.4 h	308.97	6.83E-07	238U	23.45 m	321.71	2.76E-07	176Yb	1.911 h	336.60	2.85E-07
108Pd	13.7012 h	309.10	1.93E-06	150Nd	28.4 h	321.87	8.16E-07	168Yb	32.018 d	336.62	3.54E-06
159Tb	73.2 d	309.56	2.66E-03	100Mo	14.22 m	322.01	1.50E-07	71Ga	14.10 h	336.63	5.90E-05
150Nd	12.44 m	310.40	2.47E-07	153Eu	8.601 y	322.02	1.48E-03	150Nd	12.44 m	337.12	3.48E-07
150Nd	28.4 h	310.80	1.42E-07	238U	2.356 d	322.26	1.21E-06	159Tb	73.2 d	337.32	1.04E-03
150Nd	28.4 h	310.80	3.04E-07	98Mo	6.0067 h	322.40	6.56E-10	76Ge	11.30 h	337.63	3.91E-07
148Nd	1.728 h	310.98	1.09E-05	187Re	17.005 h	322.93	8.70E-05	192Os	30.11 h	337.70	1.66E-07
124Sn	9.52 m	311.20	9.02E-08	198Pt	30.8 m	323.60	8.96E-06	74Ge	82.78 m	338.00	1.72E-07
100Mo	14.22 m	311.28	8.64E-07	150Nd	12.44 m	323.80	1.12E-07	74Ge	82.78 m	338.00	2.48E-07
124Sn	9.64 d	311.30	3.74E-10	150Nd	28.4 h	323.94	1.03E-05	160Gd	3.55 m	338.07	6.85E-05
108Pd	13.7012 h	311.40	1.26E-05	148Nd	53.08 h	323.95	3.24E-08	142Ce	33.039 h	338.30	1.38E-08
232Th	26.975 d	311.90	2.53E-02	96Ru	2.9 d	324.49	3.58E-05	76Ge	11.30 h	338.66	1.13E-06
187Re	17.005 h	312.00	2.31E-04	130Te	8.0233 d	324.65	2.37E-07	87Rb	17.78 m	338.95	4.97E-07
238U	23.45 m	312.05	1.26E-06	150Nd	12.44 m	324.68	4.04E-06	104Ru	4.44 h	339.40	2.68E-07
153Eu	8.601 y	312.30	4.03E-04	151Eu	13.522 y	324.83	2.86E-02	150Nd	28.4 h	340.08	1.90E-04
41K	12.360 h	312.60	1.76E-05	150Nd	28.4 h	325.20	1.23E-07	151Eu	9.3116 h	340.10	1.08E-03
150Nd	12.44 m	312.63	1.12E-07	76Ge	11.30 h	325.60	4.55E-08	151Eu	13.522 y	340.40	1.20E-02
76Ge	11.30 h	313.30	3.45E-08	130Te	8.0233 d	325.79	2.91E-06	232Th	26.975 d	340.48	2.96E-03
116Sn	13.76 d	314.30	6.50E-11	150Nd	28.4 h	325.80	8.92E-07	150Nd	28.4 h	341.00	6.27E-07
148Nd	53.08 h	314.85	5.94E-09	104Ru	4.44 h	326.14	2.01E-05	109Ag	249.78 d	341.30	8.11E-07
150Nd	28.4 h	314.92	5.32E-07	150Nd	12.44 m	326.30	2.36E-07	150Nd	12.44 m	341.95	4.94E-07
160Gd	3.55 m	314.92	9.23E-04	148Nd	1.728 h	326.55	9.71E-05	148Nd	1.728 h	342.81	1.77E-06
124Sn	2.75855 y	314.95	5.74E-09	133Cs	2.0652 y	326.59	7.72E-05	130Te	25 m	342.95	7.32E-06
150Nd	28.4 h	315.10	6.65E-08	133Cs	2.0652 y	326.59	7.72E-05	104Ru	4.44 h	343.30	5.36E-07
151Eu	13.522 y	315.17	1.92E-02	148Nd	53.08 h	327.53	7.93E-08	174Hf	70 d	343.40	8.64E-03
153Eu	8.601 y	315.40	1.57E-04	100Mo	14.61 m	327.70	8.74E-07	238U	23.45 m	343.74	4.48E-07
238U	2.356 d	315.88	3.74E-04	168Yb	32.018 d	328.00	2.43E-06	114Cd	53.46 h	344.20	1.26E-10
168Yb	32.018 d	316.20	1.19E-06	114Cd	53.46 h	328.38	5.18E-08	151Eu	13.522 y	344.28	1.03E+01
151Eu	13.522 y	316.20	1.20E-03	193Ir	19.3 h	328.45	9.91E-02	151Eu	9.3116 h	344.31	5.15E-01
104Ru	4.44 h	316.44	2.10E-04	139La	1.6785 d	328.76	2.83E-02	150Nd	28.4 h	344.90	1.78E-05
150Nd	12.44 m	316.56	3.93E-07	150Nd	28.4 h	329.00	1.14E-07	64Zn	244.01 d	344.95	3.12E-07
110Pd	5.5 h	316.90	2.95E-08	148Nd	1.728 h	329.18	4.41E-07	150Nd	12.44 m	344.99	3.37E-07
192Os	30.11 h	317.00	1.44E-07	151Eu	13.522 y	329.43	5.00E-02	238U	23.45 m	345.12	7.13E-07
198Pt	30.8 m	317.03	1.37E-04	150Nd	28.4 h	329.75	1.86E-06	115In	54.29 m	345.20	8.34E-04
71Ga	14.10 h	317.50	1.21E-05	153Eu	8.601 y	329.90	2.04E-04	130Te	25 m	345.60	1.44E-07
102Ru	39.26 d	317.72	5.28E-10	96Zr	16.744 m	330.43	2.11E-08	180Hf	42.39 d	345.93	8.10E-03
102Ru	39.26 d	317.77	1.58E-06	151Eu	13.522 y	330.54	2.33E-03	150Nd	28.4 h	346.10	3.23E-07
100Mo	14.61 m	318.00	9.58E-07	104Ru	4.44 h	330.85	1.26E-05	123Sb	60.2 d	346.10	1.82E-06
130Te	8.0233 d	318.09	8.66E-07	124Sn	9.52 m	331.90	1.29E-04	153Eu	8.601 y	346.72	6.49E-04
148Nd	1.728 h	318.20	1.82E-07	124Sn	9.64 d	332.10	6.02E-08	150Nd	12.44 m	347.13	3.37E-06
68Zn	56.4 m	318.40	7.71E-08	148Nd	1.728 h	332.17	3.75E-07	59Co	5.2710 y	347.14	9.89E-05
174Hf	70 d	318.90	1.73E-05	179Hf	5.47 h	332.28	6.68E-04	100Mo	14.61 m	347.56	4.26E-07
104Ru	35.36 h	318.90	3.61E-04	103Rh	4.34 m	332.60	3.08E-07	148Nd	1.728 h	347.84	3.42E-06
176Yb	1.911 h	319.10	2.07E-07	150Nd	12.44 m	332.78	5.84E-06	158Gd	18.479 h	348.28	1.74E-05
146Nd	10.98 d	319.41	7.25E-05	81Br	35.282 h	332.90	4.55E-06	150Nd	28.4 h	348.80	7.78E-08
153Eu	8.601 y	320.00	2.24E-05	192Os	30.11 h	333.30	3.86E-07	148Nd	1.728 h	349.23	2.93E-05
151Eu	13.522 y	320.03	6.59E-04	185Re	3.7186 d	333.39	2.91E-07	150Nd	28.4 h	349.81	1.20E-06
50Ti	5.76 m	320.08	3.77E-04	100Mo	14.61 m	333.61	2.98E-06	159Tb	73.2 d	349.92	4.45E-05
50Cr	27.703 d	320.08	2.65E-03	168Yb	32.018 d	333.95	6.17E-07	104Ru	4.44 h	349.96	5.45E-06

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
148Nd	53.08 h	350.00	7.33E-09	158Gd	18.479 h	363.54	8.56E-04	124Sn	2.75855 y	380.45	2.05E-06
76Ge	11.30 h	350.10	2.82E-08	114Cd	53.46 h	363.95	9.58E-08	148Nd	1.728 h	380.79	1.10E-06
104Ru	4.44 h	350.18	1.92E-05	130Te	8.0233 d	364.49	8.84E-04	100Mo	14.61 m	381.12	1.32E-06
192Os	30.11 h	350.20	9.94E-07	193Ir	19.3 h	364.87	3.10E-04	150Nd	28.4 h	381.20	1.71E-07
142Ce	33.039 h	350.62	5.20E-05	150Nd	12.44 m	365.35	7.07E-07	71Ga	14.10 h	381.24	1.50E-04
148Nd	53.08 h	350.71	3.17E-08	109Ag	249.78 d	365.45	3.39E-05	122Sn	40.06 m	381.40	5.00E-08
124Sn	9.64 d	350.95	1.13E-08	64Ni	2.5172 h	366.27	2.59E-05	238U	23.45 m	381.43	3.45E-07
181Ta	114.43 d	351.05	2.15E-05	98Mo	2.7479 d	366.42	8.16E-06	58Fe	44.495 d	382.00	2.99E-08
130Ba	11.5 d	351.20	1.28E-07	148Nd	1.728 h	366.63	1.15E-05	153Eu	8.601 y	382.00	2.22E-04
130Te	25 m	351.48	2.44E-07	150Nd	12.44 m	366.90	2.24E-07	112Sn	115.09 d	382.90	8.20E-11
148Nd	1.728 h	351.63	2.49E-05	76Ge	11.30 h	367.40	2.36E-05	107Ag	2.395 m	383.13	3.13E-06
151Eu	13.522 y	351.66	5.43E-03	151Eu	13.522 y	367.79	3.34E-01	150Nd	12.44 m	383.20	2.02E-07
150Nd	28.4 h	352.30	1.33E-07	153Eu	8.601 y	368.21	6.72E-05	100Mo	14.22 m	383.83	1.17E-07
148Nd	1.728 h	352.78	1.16E-06	100Mo	14.61 m	368.40	4.10E-07	130Te	25 m	384.06	9.34E-06
186W	23.72 h	352.86	1.92E-06	150Nd	28.4 h	369.00	1.39E-07	100Mo	14.61 m	384.40	2.13E-07
100Mo	14.61 m	352.97	5.85E-07	130Ba	11.5 d	369.12	1.90E-08	148Nd	1.728 h	384.69	5.68E-06
74Ge	82.78 m	353.00	7.72E-07	104Ru	4.44 h	369.45	8.94E-07	151Eu	13.522 y	385.69	1.94E-03
74Ge	82.78 m	353.00	1.11E-06	100Mo	14.61 m	370.00	4.94E-07	124Sn	9.52 m	386.00	1.16E-07
174Hf	70 d	353.30	2.35E-05	123Sb	60.2 d	370.42	1.11E-05	124Sn	9.64 d	386.60	2.08E-10
150Nd	28.4 h	353.32	8.92E-07	153Eu	8.601 y	370.71	1.25E-04	168Yb	32.018 d	386.67	1.37E-07
148Nd	53.08 h	353.46	6.61E-09	168Yb	32.018 d	370.86	3.07E-07	109Ag	249.78 d	387.07	1.91E-05
130Te	25 m	353.58	2.01E-07	142Ce	33.039 h	371.29	3.99E-07	192Os	30.11 h	387.48	1.76E-04
84Sr	64.85 d	354.06	4.94E-10	100Mo	14.61 m	371.60	6.39E-07	151Eu	9.3116 h	387.80	1.54E-04
115In	54.29 m	355.36	2.33E-02	148Nd	1.728 h	371.92	4.75E-07	151Eu	13.522 y	387.90	1.15E-03
96Zr	16.744 m	355.40	3.08E-07	170Er	7.516 h	371.96	4.24E-05	107Ag	2.395 m	388.36	6.42E-06
109Ag	249.78 d	356.43	1.57E-06	130Ba	11.5 d	373.25	1.97E-05	86Sr	2.815 h	388.53	1.49E-03
168Yb	32.018 d	356.74	5.09E-08	238U	23.45 m	373.52	4.83E-06	142Ce	33.039 h	389.64	5.85E-07
150Nd	28.4 h	356.90	6.65E-08	150Nd	12.44 m	373.57	2.24E-07	70Zn	2.45 m	390.00	6.25E-07
164Dy	2.334 h	356.90	7.95E-05	150Nd	12.44 m	373.57	6.85E-07	130Ba	11.5 d	390.05	2.63E-09
150Nd	12.44 m	357.00	3.25E-06	74Se	119.79 d	373.61	3.04E-07	108Pd	13.7012 h	390.60	3.66E-07
148Nd	1.728 h	357.03	9.93E-07	150Nd	28.4 h	374.20	1.86E-07	150Nd	28.4 h	390.67	4.56E-07
151Eu	13.522 y	357.26	1.55E-03	186W	23.72 h	374.31	3.02E-06	148Nd	1.728 h	390.90	1.66E-07
102Ru	39.26 d	357.39	7.77E-07	178Hf	18.67 s	375.00	7.96E-06	150Nd	12.44 m	391.13	3.93E-07
192Os	30.11 h	357.70	1.38E-06	153Eu	8.601 y	375.20	4.48E-05	110Pd	5.5 h	391.30	4.31E-06
142Ce	33.039 h	357.80	9.63E-09	232Th	26.975 d	375.40	4.53E-04	151Eu	13.522 y	391.32	4.85E-04
110Pd	5.5 h	357.90	3.35E-07	186W	23.72 h	375.93	4.37E-06	112Sn	99.476 m	391.70	8.87E-05
103Rh	42.3 s	358.12	4.72E-04	110Pd	5.5 h	376.70	7.02E-07	112Sn	115.09 d	391.70	8.88E-05
100Mo	14.61 m	358.20	1.82E-07	150Nd	28.4 h	376.90	1.33E-07	98Mo	2.7479 d	391.70	1.71E-08
130Te	8.0233 d	358.40	1.07E-07	148Nd	1.728 h	376.90	1.66E-07	150Nd	12.44 m	391.70	1.12E-07
150Nd	28.4 h	358.40	1.29E-07	192Os	30.11 h	377.31	9.94E-06	238U	2.356 d	392.40	3.74E-07
75As	26.24 h	358.40	1.54E-05	150Nd	12.44 m	377.73	4.60E-07	159Tb	73.2 d	392.51	4.11E-03
148Nd	1.728 h	358.49	2.21E-07	100Mo	14.61 m	377.90	6.61E-07	100Mo	14.22 m	393.30	4.14E-07
148Nd	53.08 h	359.57	3.17E-08	192Os	30.11 h	378.00	2.26E-07	104Ru	4.44 h	393.36	7.14E-05
148Nd	1.728 h	360.05	3.26E-06	238U	23.45 m	378.07	2.53E-06	160Gd	3.55 m	394.34	8.87E-06
109Ag	249.78 d	360.23	2.95E-06	150Nd	28.4 h	378.50	8.54E-08	150Nd	12.44 m	394.60	2.47E-07
150Nd	28.4 h	360.90	8.92E-08	99Tc	15.8 s	378.60	1.40E-04	238U	23.45 m	395.30	3.45E-07
160Gd	3.55 m	360.94	2.44E-03	100Mo	14.61 m	378.99	1.28E-06	108Pd	13.7012 h	395.60	6.74E-08
148Nd	1.728 h	361.40	1.38E-07	192Os	30.11 h	379.04	1.93E-06	150Nd	28.4 h	395.63	3.61E-07
164Dy	1.257 m	361.47	3.12E-02	168Yb	32.018 d	379.27	1.08E-07	174Yb	4.185 d	396.33	3.19E-02
164Dy	2.334 h	361.68	7.95E-02	151Eu	13.522 y	379.37	3.22E-04	148Nd	1.728 h	396.76	1.55E-06
192Os	30.11 h	361.81	4.14E-05	159Tb	73.2 d	379.41	4.35E-05	109Ag	249.78 d	396.90	1.36E-05
150Nd	12.44 m	362.70	1.91E-07	150Nd	28.4 h	379.86	7.97E-06	153Eu	8.601 y	397.10	6.49E-04
170Er	7.516 h	362.91	3.25E-06	150Nd	12.44 m	380.10	2.69E-07	139La	1.6785 d	397.67	1.02E-04
238U	23.45 m	363.10	1.95E-07	98Mo	2.7479 d	380.13	6.22E-08	124Sn	9.64 d	398.00	2.08E-11
124Sn	9.64 d	363.50	1.25E-10	232Th	26.975 d	380.28	2.45E-06	51V	3.743 m	398.08	1.62E-05



Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
146Nd	10.98 d	398.16	3.23E-05	204Hg	5.14 m	415.60	3.99E-08	150Nd	12.44 m	430.20	2.24E-07
232Th	26.975 d	398.49	9.32E-04	150Nd	28.4 h	415.70	1.88E-07	176Yb	1.911 h	430.50	5.18E-08
70Zn	2.45 m	398.60	1.00E-07	232Th	26.975 d	415.76	1.16E-03	76Ge	11.30 h	430.60	1.73E-08
100Mo	14.61 m	398.84	3.61E-06	151Eu	13.522 y	416.05	4.23E-02	139La	1.6785 d	432.51	4.07E-03
150Nd	28.4 h	398.90	2.66E-07	87Rb	17.78 m	416.20	3.02E-08	100Mo	14.61 m	432.65	4.56E-07
76Ge	11.30 h	399.01	1.62E-07	76Ge	11.30 h	416.33	3.68E-05	148Nd	1.728 h	432.66	2.76E-07
148Nd	1.728 h	399.10	3.09E-07	142Ce	33.039 h	416.57	1.10E-07	159Tb	73.2 d	432.66	7.13E-05
238U	23.45 m	399.40	1.15E-07	150Nd	28.4 h	416.80	1.31E-07	142Ce	33.039 h	433.00	2.55E-06
123Sb	60.2 d	400.01	4.04E-05	115In	54.29 m	416.86	7.81E-01	174Hf	70 d	433.00	1.48E-04
74Ge	47.7 s	400.20	6.75E-08	160Gd	3.55 m	417.00	1.25E-05	136Ce	9.0 h	433.22	9.29E-08
96Zr	16.744 m	400.42	3.60E-08	198Pt	30.8 m	417.61	1.04E-05	107Ag	2.395 m	433.94	1.74E-03
150Nd	28.4 h	400.50	5.89E-08	110Pd	5.5 h	418.00	4.31E-08	124Sn	9.64 d	434.13	1.04E-09
74Se	119.79 d	400.66	1.41E-03	192Os	30.11 h	418.00	9.94E-07	238U	23.45 m	434.70	1.02E-06
81Br	35.282 h	401.16	2.70E-05	192Os	30.11 h	418.35	7.62E-06	238U	2.356 d	434.70	3.04E-06
153Eu	8.601 y	401.26	4.23E-03	150Nd	12.44 m	418.40	4.49E-07	148Nd	1.728 h	434.90	7.73E-08
71Ga	14.10 h	401.30	1.79E-05	74Se	119.79 d	419.10	1.45E-06	115In	54.29 m	434.90	1.02E-03
150Nd	12.44 m	402.33	2.13E-06	74Ge	82.78 m	419.10	6.95E-06	150Nd	12.44 m	435.90	1.12E-07
130Te	25 m	402.36	7.18E-08	74Ge	82.78 m	419.10	1.00E-05	153Eu	8.601 y	435.90	8.51E-05
86Kr	76.3 m	402.59	6.42E-06	153Eu	8.601 y	419.40	7.61E-05	136Ce	9.0 h	436.59	4.76E-07
75As	26.24 h	403.20	2.67E-05	76Ge	52.9 s	419.50	2.11E-07	152Sm	1.92855 d	436.90	1.30E-05
130Te	25 m	403.30	7.18E-08	76Ge	11.30 h	419.75	2.07E-06	75As	26.24 h	437.30	1.54E-06
153Eu	8.601 y	403.55	5.82E-04	170Er	7.516 h	419.90	1.37E-05	139La	1.6785 d	438.18	2.31E-05
130Ba	11.5 d	404.05	1.84E-06	192Os	30.11 h	420.30	2.32E-05	130Te	25 m	438.30	7.18E-08
150Nd	28.4 h	404.74	5.51E-07	150Nd	28.4 h	420.65	4.75E-07	142Ce	33.039 h	438.43	6.88E-08
130Te	8.0233 d	404.81	6.00E-07	130Te	25 m	421.32	4.38E-07	68Zn	13.76 h	438.63	4.10E-04
164Dy	2.334 h	405.25	1.01E-03	100Mo	14.61 m	421.67	2.27E-06	87Rb	17.78 m	439.20	1.19E-07
151Eu	13.522 y	406.74	3.22E-04	150Nd	12.44 m	421.80	1.12E-06	150Nd	12.44 m	439.22	2.69E-06
150Nd	28.4 h	407.03	1.58E-06	100Mo	14.22 m	422.02	1.32E-07	110Pd	5.5 h	439.30	1.93E-07
150Nd	12.44 m	407.55	4.26E-06	153Eu	8.601 y	422.10	4.93E-05	76Ge	11.30 h	439.44	3.41E-07
104Ru	4.44 h	407.60	1.70E-06	100Mo	14.61 m	422.40	3.95E-07	148Nd	1.728 h	439.60	7.73E-07
238U	23.45 m	407.70	8.16E-07	150Nd	12.44 m	422.60	3.14E-06	146Nd	10.98 d	439.90	4.45E-05
124Sn	2.75855 y	408.07	2.46E-07	70Zn	2.45 m	423.20	6.25E-09	22Ne	37.24 s	439.99	1.40E-03
100Mo	14.61 m	408.69	6.39E-06	151Eu	13.522 y	423.45	1.24E-03	150Nd	28.4 h	440.85	1.27E-05
196Hg	23.8 h	409.10	1.53E-07	148Nd	1.728 h	423.55	1.58E-04	151Eu	13.522 y	440.86	5.16E-03
109Ag	249.78 d	409.40	4.64E-06	150Nd	12.44 m	423.56	8.98E-07	192Os	30.11 h	440.95	1.28E-05
96Zr	16.744 m	410.00	9.57E-09	150Nd	12.44 m	423.56	4.99E-05	148Nd	1.728 h	441.47	6.73E-07
98Mo	2.7479 d	410.27	1.09E-08	160Gd	3.55 m	423.86	7.26E-06	100Mo	14.61 m	442.00	2.20E-07
146Nd	10.98 d	410.48	5.18E-06	108Pd	13.7012 h	423.90	3.76E-07	104Ru	35.36 h	442.80	7.94E-07
150Nd	28.4 h	410.75	5.32E-07	152Sm	1.92855 d	424.40	1.45E-05	127I	24.99 m	442.90	1.28E-02
151Eu	13.522 y	411.12	8.68E+02	150Nd	28.4 h	424.55	4.18E-07	179Hf	5.47 h	443.16	5.81E-04
98Mo	2.7479 d	411.49	1.10E-07	170Er	7.516 h	424.90	3.70E-06	152Sm	1.92855 d	443.20	6.74E-07
197Au	2.6944 d	411.80	1.00E+00	168Yb	32.018 d	425.00	5.85E-07	103Rh	4.34 m	443.50	1.96E-07
151Eu	9.3116 h	412.00	1.54E-04	148Nd	1.728 h	425.22	5.79E-06	148Nd	1.728 h	443.55	2.45E-05
152Sm	1.92855 d	412.05	1.47E-05	198Pt	30.8 m	425.34	3.95E-06	124Sn	2.75855 y	443.56	4.12E-07
108Pd	13.7012 h	413.00	2.60E-06	150Nd	28.4 h	425.60	8.35E-08	148Nd	1.728 h	443.70	2.21E-07
150Nd	12.44 m	413.50	3.37E-07	154Sm	22.3 m	426.20	3.33E-06	150Nd	28.4 h	443.80	1.90E-07
110Pd	5.5 h	413.50	1.42E-06	150Nd	12.44 m	426.47	3.25E-06	102Ru	39.26 d	443.80	2.86E-05
104Ru	4.44 h	413.53	4.29E-05	150Nd	12.44 m	427.20	8.98E-07	123Sb	60.2 d	443.96	5.49E-05
148Nd	1.728 h	413.69	3.70E-07	150Nd	28.4 h	427.25	5.32E-07	151Eu	9.3116 h	443.96	5.36E-03
192Os	30.11 h	413.80	6.63E-07	130Ba	11.5 d	427.57	1.34E-07	151Eu	13.522 y	443.97	1.24E-01
153Eu	8.601 y	414.30	1.10E-04	150Nd	12.44 m	427.65	1.57E-06	151Eu	13.522 y	443.97	1.09E+00
150Nd	12.44 m	414.63	1.46E-06	124Sn	2.75855 y	427.87	3.99E-05	110Pd	5.5 h	444.20	1.00E-07
150Nd	12.44 m	415.20	2.24E-07	71Ga	14.10 h	428.42	1.09E-04	76Ge	11.30 h	444.42	2.91E-08
108Pd	13.7012 h	415.20	4.24E-06	150Nd	28.4 h	429.10	1.33E-07	153Eu	8.601 y	444.49	1.25E-02
110Pd	5.5 h	415.50	1.29E-06	238U	2.356 d	429.50	9.11E-07	139La	1.6785 d	444.57	4.48E-06

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
150Nd	12.44 m	444.70	1.12E-07	76Ge	11.30 h	461.38	2.14E-06	153Eu	8.601 y	478.27	5.02E-03
150Nd	12.44 m	445.53	8.87E-07	238U	2.356 d	461.90	3.74E-07	103Rh	42.3 s	479.10	8.74E-05
150Nd	28.4 h	445.68	3.38E-05	152Sm	1.92855 d	462.00	1.21E-05	136Ce	9.0 h	479.12	2.14E-08
142Ce	33.039 h	446.02	2.41E-07	150Nd	28.4 h	462.24	3.04E-07	71Ga	14.10 h	479.23	5.01E-05
109Ag	249.78 d	446.81	1.35E-03	148Nd	1.728 h	462.34	8.83E-07	150Nd	12.44 m	479.30	8.98E-08
150Nd	12.44 m	446.88	1.57E-06	130Ba	11.5 d	462.68	6.57E-08	103Rh	4.34 m	479.40	1.40E-07
136Ce	9.0 h	447.15	3.19E-06	115In	54.29 m	463.14	2.33E-02	89Y	3.19 h	479.51	2.14E-05
142Ce	33.039 h	447.45	9.63E-07	124Sn	2.75855 y	463.37	1.42E-05	186W	23.72 h	479.55	2.69E-02
238U	2.356 d	447.60	6.07E-08	75As	26.24 h	463.60	1.03E-06	104Ru	4.44 h	479.60	5.28E-07
108Pd	13.7012 h	447.60	3.28E-07	152Sm	1.92855 d	463.60	1.04E-04	164Dy	2.334 h	479.62	4.16E-03
238U	23.45 m	448.15	1.95E-06	150Nd	28.4 h	463.80	7.59E-08	160Gd	3.55 m	480.12	1.09E-04
100Mo	14.61 m	448.60	2.80E-06	153Eu	8.601 y	463.90	9.41E-05	148Nd	1.728 h	480.32	8.83E-07
150Nd	28.4 h	448.70	1.71E-07	150Nd	12.44 m	465.60	1.91E-07	130Ba	11.5 d	480.41	4.60E-07
148Nd	1.728 h	448.80	1.71E-07	168Yb	32.018 d	465.66	8.34E-08	153Eu	8.601 y	480.61	1.07E-04
150Nd	12.44 m	449.20	2.69E-07	198Pt	30.8 m	465.76	2.52E-05	123Sb	60.2 d	481.10	6.88E-06
71Ga	14.10 h	449.55	5.17E-05	75As	26.24 h	466.50	5.13E-06	150Nd	12.44 m	481.92	4.60E-07
84Sr	67.63 m	450.79	8.96E-09	109Ag	249.78 d	467.03	9.18E-06	180Hf	42.39 d	482.18	4.31E-02
84Kr	4.480 h	451.00	1.44E-07	150Nd	28.4 h	467.20	9.49E-08	151Eu	13.522 y	482.31	5.39E-04
103Rh	42.3 s	451.16	1.81E-04	153Eu	8.601 y	467.84	1.35E-03	151Eu	13.522 y	482.31	1.08E-02
150Nd	28.4 h	451.40	2.43E-06	198Pt	30.8 m	468.09	2.77E-05	136Ce	9.0 h	482.47	8.20E-08
130Ba	11.5 d	451.42	5.71E-08	74Se	119.79 d	468.60	4.18E-08	100Mo	14.61 m	482.52	3.57E-07
103Rh	4.34 m	451.50	8.12E-07	123Sb	60.2 d	468.61	1.45E-05	193Ir	19.3 h	482.86	3.48E-04
150Nd	28.4 h	452.20	1.14E-07	74Ge	82.78 m	468.80	8.40E-06	148Nd	1.728 h	483.59	1.43E-06
160Gd	3.55 m	452.20	2.42E-06	74Ge	82.78 m	468.80	1.21E-05	153Eu	8.601 y	483.74	1.12E-04
130Te	25 m	452.32	1.90E-04	100Mo	14.61 m	469.02	3.19E-07	96Ru	2.9 d	483.76	6.54E-09
100Mo	14.61 m	452.50	3.19E-07	104Ru	4.44 h	469.37	3.32E-04	186W	23.72 h	484.15	2.12E-05
168Yb	32.018 d	452.62	1.26E-08	98Mo	2.7479 d	469.63	1.84E-08	192Os	30.11 h	484.25	2.37E-05
70Zn	2.45 m	453.10	2.96E-08	130Te	25 m	469.70	1.58E-07	238U	2.356 d	484.30	2.34E-07
187Re	17.005 h	453.34	3.92E-04	238U	2.356 d	469.80	2.57E-07	87Rb	17.78 m	484.53	2.31E-07
238U	2.356 d	454.20	1.92E-07	124Sn	9.64 d	469.85	6.35E-08	153Eu	8.601 y	484.64	8.73E-05
108Pd	13.7012 h	454.30	2.12E-07	76Ge	11.30 h	470.00	1.36E-08	75As	26.24 h	484.80	6.67E-06
150Nd	28.4 h	454.40	1.14E-07	104Ru	4.44 h	470.10	3.49E-06	152Sm	1.92855 d	485.00	2.91E-06
110Pd	5.5 h	454.50	2.07E-07	81Br	35.282 h	470.30	1.19E-05	110Pd	5.5 h	485.90	4.15E-07
110Pd	5.5 h	454.50	8.93E-07	150Nd	28.4 h	470.50	1.52E-07	159Tb	73.2 d	486.06	2.60E-04
150Nd	12.44 m	454.60	3.48E-07	148Nd	1.728 h	470.50	2.21E-07	187Re	17.005 h	486.09	4.24E-04
186W	23.72 h	454.92	3.63E-05	150Nd	28.4 h	471.30	1.52E-07	192Os	30.11 h	486.11	1.60E-06
238U	23.45 m	455.60	7.36E-07	150Nd	28.4 h	471.40	1.14E-07	130Ba	11.5 d	486.52	2.93E-06
170Er	7.516 h	455.60	9.91E-07	164Dy	2.334 h	472.11	1.35E-04	238U	23.45 m	486.87	1.38E-05
232Th	26.975 d	455.96	7.28E-07	23Na	20.20 ms	472.21	3.63E-02	150Nd	12.44 m	486.98	5.72E-07
150Nd	28.4 h	456.05	3.23E-07	75As	26.24 h	472.80	5.65E-05	139La	1.6785 d	487.02	6.26E-02
164Dy	2.334 h	456.09	4.02E-03	96Zr	16.744 m	473.50	1.09E-08	150Nd	28.4 h	487.10	1.42E-07
150Nd	12.44 m	456.68	6.06E-07	150Nd	28.4 h	473.80	5.70E-08	124Sn	9.64 d	487.20	5.40E-10
75As	26.24 h	456.90	4.06E-05	130Ba	11.5 d	474.20	3.28E-09	70Zn	2.45 m	487.30	1.94E-08
150Nd	28.4 h	457.50	3.80E-08	238U	23.45 m	474.49	8.16E-07	152Sm	1.92855 d	487.75	2.76E-06
98Mo	2.7479 d	457.60	5.06E-08	198Pt	30.8 m	474.68	3.18E-05	170Er	7.516 h	487.90	8.25E-07
176Yb	1.911 h	458.00	1.89E-06	115In	54.29 m	474.90	4.76E-04	150Nd	12.44 m	488.18	9.65E-07
115In	54.29 m	458.50	1.98E-03	168Yb	32.018 d	474.97	7.33E-08	153Eu	8.601 y	488.26	1.57E-04
150Nd	12.44 m	459.80	4.49E-08	133Cs	2.0652 y	475.37	7.04E-03	103Rh	4.34 m	488.50	3.08E-07
192Os	30.11 h	460.49	5.52E-04	133Cs	2.0652 y	475.37	7.04E-03	103Rh	42.3 s	488.50	8.16E-05
103Rh	4.34 m	460.50	2.24E-07	76Ge	11.30 h	475.43	1.67E-06	151Eu	13.522 y	488.68	1.61E-01
103Rh	42.3 s	460.50	1.05E-04	180Hf	42.39 d	475.99	3.76E-04	100Mo	14.22 m	489.10	1.35E-07
96Ru	2.9 d	460.56	4.01E-07	185Re	3.7186 d	476.39	7.05E-09	46Ca	4.536 d	489.23	9.57E-08
150Nd	12.44 m	460.59	8.08E-06	150Nd	12.44 m	476.50	1.35E-07	146Nd	10.98 d	489.24	5.70E-06
154Sm	22.3 m	460.80	1.71E-05	150Nd	28.4 h	477.75	7.97E-07	104Ru	4.44 h	489.48	1.04E-05
130Ba	11.5 d	461.26	7.88E-08	187Re	17.005 h	477.99	5.47E-03	164Dy	2.334 h	489.90	3.26E-04

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
150Nd	28.4 h	490.26	1.06E-06	238U	23.45 m	504.77	1.01E-06	110Pd	5.5 h	519.30	8.93E-08
142Ce	33.039 h	490.37	3.48E-05	100Mo	14.61 m	505.05	1.52E-06	76Ge	11.30 h	520.00	5.00E-07
150Nd	12.44 m	490.78	8.19E-07	198Pt	30.8 m	505.50	2.32E-06	151Eu	13.522 y	520.23	2.08E-02
100Mo	14.61 m	491.50	2.81E-07	100Mo	14.61 m	505.92	4.85E-05	70Zn	2.45 m	520.50	1.32E-08
150Nd	12.44 m	492.24	8.42E-07	130Ba	11.5 d	506.10	2.63E-09	71Ga	14.10 h	520.74	3.00E-05
238U	2.356 d	492.30	1.40E-06	148Nd	53.08 h	506.10	2.64E-09	165Ho	26.795 h	520.80	2.71E-06
114Cd	53.46 h	492.35	1.26E-04	153Eu	8.601 y	506.40	1.41E-04	150Nd	28.4 h	521.10	2.66E-07
130Te	25 m	492.66	5.04E-05	170Er	7.516 h	506.90	3.75E-06	204Hg	5.14 m	521.30	2.23E-09
238U	23.45 m	492.68	1.07E-06	150Nd	28.4 h	507.27	3.99E-07	152Sm	1.92855 d	521.30	5.28E-05
186W	23.72 h	492.80	3.02E-05	96Zr	16.744 m	507.64	7.38E-07	238U	23.45 m	522.07	5.40E-07
136Ce	9.0 h	493.03	1.88E-08	168Yb	32.018 d	507.80	5.42E-10	150Nd	12.44 m	522.10	1.35E-07
109Ag	249.78 d	493.43	3.50E-06	150Nd	12.44 m	507.84	7.07E-07	154Sm	22.3 m	522.54	3.92E-05
151Eu	13.522 y	493.51	3.49E-03	64Ni	2.5172 h	507.90	1.58E-06	142Ce	33.039 h	523.00	2.75E-08
151Eu	13.522 y	493.51	1.08E-02	141Pr	19.12 h	508.80	3.91E-05	151Eu	13.522 y	523.13	4.38E-03
198Pt	30.8 m	493.75	1.55E-04	152Sm	1.92855 d	509.15	1.52E-05	100Mo	14.61 m	523.83	6.61E-07
148Nd	1.728 h	493.85	1.27E-06	153Eu	8.601 y	510.00	1.32E-03	124Sn	9.64 d	524.30	4.15E-10
168Yb	32.018 d	494.36	5.67E-07	150Nd	28.4 h	510.10	7.21E-08	150Nd	12.44 m	524.31	4.26E-06
130Te	25 m	494.85	7.90E-07	154Sm	22.3 m	510.20	3.23E-06	192Os	30.11 h	524.98	2.21E-06
150Nd	28.4 h	494.90	9.49E-08	100Mo	14.61 m	510.21	1.03E-06	123Sb	60.2 d	525.41	4.01E-05
170Er	7.516 h	495.40	3.30E-07	148Nd	1.728 h	510.30	1.32E-06	110Pd	5.5 h	525.60	1.04E-06
150Nd	28.4 h	495.50	1.14E-07	86Kr	76.3 m	510.70	8.99E-09	127I	24.99 m	526.56	1.22E-03
71Ga	14.10 h	495.88	3.11E-05	64Zn	244.01 d	511.00	3.49E-04	151Eu	13.522 y	526.88	5.00E-03
130Te	25 m	496.23	3.59E-07	151Eu	13.522 y	511.00	2.09E-02	150Nd	12.44 m	527.60	2.13E-07
130Ba	11.5 d	496.33	6.57E-05	63Cu	12.701 h	511.00	3.62E-02	148Nd	1.728 h	527.60	2.48E-07
151Eu	13.522 y	496.39	1.63E-03	70Zn	2.45 m	511.60	5.26E-06	114Cd	53.46 h	527.90	4.31E-04
151Eu	13.522 y	496.39	1.90E-03	186W	23.72 h	511.66	7.96E-04	168Yb	32.018 d	528.57	4.69E-08
108Pd	13.7012 h	496.90	2.99E-08	153Eu	8.601 y	512.00	7.17E-04	148Nd	53.08 h	528.60	2.64E-09
100Mo	14.61 m	497.00	6.08E-07	192Os	30.11 h	512.30	2.21E-07	98Mo	2.7479 d	528.79	3.70E-07
102Ru	39.26 d	497.08	7.54E-03	164Dy	2.334 h	512.57	3.02E-04	136Ce	9.0 h	529.30	6.38E-10
107Ag	2.395 m	497.13	5.74E-06	148Nd	1.728 h	512.70	2.76E-07	160Gd	3.55 m	529.50	5.12E-05
124Sn	2.75855 y	497.37	4.37E-09	148Nd	1.728 h	512.70	2.76E-07	193Ir	19.3 h	530.17	1.21E-04
114Cd	4.486 h	497.37	7.03E-07	100Mo	14.61 m	512.83	5.85E-06	123Sb	60.2 d	530.30	1.23E-05
103Rh	4.34 m	497.80	2.52E-07	96Zr	16.744 m	513.41	8.07E-08	238U	23.45 m	530.50	2.76E-07
238U	2.356 d	497.80	7.47E-07	104Ru	4.44 h	513.73	3.84E-06	46Ca	4.536 d	530.60	1.40E-09
103Rh	42.3 s	497.80	6.41E-05	84Sr	64.850 d	514.00	9.74E-05	146Nd	10.98 d	531.02	4.86E-04
142Ce	33.039 h	497.81	7.16E-07	238U	23.45 m	514.10	1.61E-07	96Ru	2.9 d	531.06	8.82E-09
150Nd	12.44 m	498.00	5.61E-08	100Mo	14.61 m	514.10	3.38E-06	76Ge	11.30 h	531.30	7.82E-08
148Nd	1.728 h	498.06	2.21E-07	102Ru	39.26 d	514.60	9.42E-07	152Sm	1.92855 d	531.40	4.19E-04
123Sb	93 s	498.40	2.04E-04	187Re	17.005 h	514.88	2.90E-05	100Mo	14.22 m	531.42	4.14E-06
148Nd	1.728 h	498.62	7.73E-07	192Os	30.11 h	514.95	1.55E-06	148Nd	53.08 h	531.61	3.17E-08
238U	23.45 m	499.20	3.45E-07	168Yb	32.018 d	515.11	1.52E-06	150Nd	12.44 m	531.97	1.02E-06
104Ru	4.44 h	499.30	3.84E-05	100Mo	14.61 m	515.42	3.38E-06	192Os	30.11 h	532.02	1.16E-05
100Mo	14.61 m	499.65	5.82E-06	164Dy	2.334 h	515.47	3.60E-03	150Nd	28.4 h	532.50	2.85E-07
104Ru	4.44 h	500.10	1.05E-05	164Dy	1.257 m	515.47	8.91E-02	238U	23.45 m	532.75	4.83E-07
115In	54.29 m	500.10	8.34E-04	148Nd	1.728 h	515.75	7.73E-07	153Eu	8.601 y	533.10	8.96E-05
168Yb	32.018 d	500.35	3.18E-09	100Mo	14.22 m	516.13	4.06E-07	153Eu	8.601 y	533.10	1.57E-04
179Hf	5.47 h	500.70	1.02E-04	150Nd	12.44 m	516.21	6.06E-07	148Nd	1.728 h	533.20	1.93E-06
130Te	8.0233 d	503.00	3.91E-06	150Nd	28.4 h	516.25	1.63E-06	152Sm	1.92855 d	533.20	2.29E-04
151Eu	13.522 y	503.47	5.95E-02	192Os	30.11 h	516.30	3.31E-07	100Mo	14.61 m	533.57	1.66E-06
150Nd	28.4 h	503.70	3.80E-08	130Ba	11.5 d	517.50	1.97E-09	130Ba	11.5 d	533.70	1.97E-09
150Nd	12.44 m	503.80	7.86E-08	238U	23.45 m	517.92	7.01E-07	151Eu	13.522 y	534.25	1.43E-02
76Ge	52.9 s	503.86	1.11E-07	150Nd	12.44 m	518.00	4.49E-07	76Ge	11.30 h	534.99	1.82E-09
76Ge	11.30 h	503.94	1.18E-07	153Eu	8.601 y	518.00	1.05E-03	238U	23.45 m	535.01	3.10E-07
164Dy	2.334 h	504.10	1.03E-04	170Er	7.516 h	519.20	2.92E-06	151Eu	13.522 y	535.40	2.33E-03
238U	2.356 d	504.20	1.82E-07	110Pd	5.5 h	519.30	3.03E-08	150Nd	12.44 m	535.70	5.61E-08

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
148Nd	53.08 h	535.90	2.44E-07	152Sm	1.92855 d	554.94	3.63E-05	115In	54.29 m	567.40	1.17E-03
115In	54.29 m	536.00	9.77E-04	103Rh	42.3 s	555.81	5.83E-02	148Nd	1.728 h	567.56	3.53E-07
148Nd	1.728 h	536.60	9.93E-07	148Nd	1.728 h	555.88	1.25E-05	102Ru	39.26 d	567.87	2.34E-07
158Gd	18.479 h	536.73	1.16E-07	192Os	30.11 h	556.00	4.42E-07	148Nd	53.08 h	568.36	3.96E-07
150Nd	28.4 h	537.65	3.80E-07	85Rb	1.017 m	556.07	9.71E-04	76Ge	11.30 h	569.22	1.33E-07
98Mo	2.7479 d	537.79	1.02E-08	110Pd	5.5 h	556.10	2.23E-07	153Eu	8.601 y	569.23	2.24E-04
151Eu	13.522 y	538.29	1.63E-03	151Eu	13.522 y	556.56	6.87E-03	96Ru	2.9 d	569.29	2.90E-06
152Sm	1.92855 d	539.10	1.62E-04	148Nd	1.728 h	556.83	9.27E-06	133Cs	2.0652 y	569.33	7.32E-02
104Ru	4.44 h	539.29	2.15E-06	142Ce	33.039 h	556.87	5.09E-07	133Cs	2.0652 y	569.33	7.32E-02
99Tc	15.8 s	539.59	3.34E-02	74Se	119.79 d	556.90	4.30E-09	142Ce	33.039 h	569.91	8.26E-08
100Mo	14.61 m	540.10	3.95E-07	76Ge	11.30 h	557.00	7.27E-08	168Yb	32.018 d	570.89	4.59E-08
148Nd	1.728 h	540.51	1.40E-04	102Ru	39.26 d	557.04	7.19E-05	148Nd	53.08 h	571.08	5.15E-08
164Dy	2.334 h	540.52	5.32E-04	192Os	30.11 h	557.36	1.82E-04	75As	26.24 h	571.50	1.59E-04
150Nd	12.44 m	540.60	3.70E-07	150Nd	12.44 m	557.40	1.68E-07	123Sb	60.2 d	571.60	5.52E-06
122Sn	40.06 m	541.80	2.35E-08	153Eu	8.601 y	557.58	5.98E-03	100Mo	14.61 m	571.62	7.37E-07
74Se	119.79 d	542.02	1.60E-08	187Re	17.005 h	557.71	5.10E-06	154Sm	22.3 m	571.80	4.89E-06
150Nd	12.44 m	542.06	4.26E-06	151Eu	13.522 y	557.91	1.71E-03	151Eu	13.522 y	571.83	1.86E-03
152Sm	1.92855 d	542.70	2.45E-05	96Zr	16.744 m	558.00	4.10E-09	104Ru	4.44 h	572.00	1.79E-07
198Pt	30.8 m	542.98	4.07E-04	148Nd	1.728 h	558.00	2.21E-07	74Se	119.79 d	572.22	4.38E-06
148Nd	53.08 h	544.27	5.28E-08	76Ge	11.30 h	558.02	2.71E-05	150Nd	28.4 h	572.50	4.37E-07
109Ag	249.78 d	544.55	6.63E-06	108Pd	13.7012 h	558.10	9.64E-07	130Ba	11.5 d	572.69	2.19E-07
238U	23.45 m	544.58	8.16E-07	148Nd	53.08 h	558.37	3.24E-07	109Ag	249.78 d	572.80	6.38E-06
150Nd	12.44 m	544.61	4.71E-07	113In	49.51 d	558.43	2.78E-04	150Nd	12.44 m	573.00	1.35E-07
130Te	25 m	544.88	4.45E-06	75As	26.24 h	559.10	5.33E-02	150Nd	28.4 h	573.20	2.47E-07
100Mo	14.22 m	545.05	2.46E-05	104Ru	4.44 h	559.24	2.06E-06	192Os	30.11 h	573.33	2.71E-06
148Nd	1.728 h	545.50	1.93E-07	192Os	30.11 h	559.26	6.79E-05	170Er	7.516 h	573.50	1.62E-06
153Eu	8.601 y	545.60	3.14E-04	170Er	7.516 h	559.50	7.69E-06	186W	23.72 h	573.71	6.38E-07
152Sm	1.92855 d	545.75	5.82E-06	158Gd	18.479 h	559.62	1.61E-06	68Zn	13.76 h	573.90	1.43E-07
164Dy	2.334 h	545.83	1.53E-02	192Os	30.11 h	560.00	3.86E-07	152Sm	1.92855 d	574.10	1.23E-06
168Yb	32.018 d	546.16	5.42E-10	100Mo	14.61 m	560.30	2.89E-07	130Te	25 m	574.90	3.23E-07
130Ba	11.5 d	546.28	4.93E-09	96Ru	2.9 d	560.34	1.08E-07	150Nd	28.4 h	574.97	9.87E-07
148Nd	1.728 h	546.50	1.88E-07	151Eu	13.522 y	561.20	4.19E-04	110Pd	5.5 h	575.00	2.54E-06
148Nd	1.728 h	547.10	3.31E-07	94Zr	34.991 d	561.88	2.91E-08	104Ru	4.44 h	575.07	1.61E-05
148Nd	53.08 h	547.17	3.43E-08	150Nd	28.4 h	562.10	1.61E-07	70Zn	2.45 m	575.10	4.77E-09
151Eu	9.3116 h	547.35	2.00E-03	168Yb	32.018 d	562.41	5.06E-08	150Nd	28.4 h	575.10	2.47E-08
148Nd	1.728 h	547.40	2.21E-07	150Nd	12.44 m	562.73	1.80E-06	75As	26.24 h	575.30	7.70E-05
170Er	7.516 h	547.80	2.81E-06	130Ba	11.5 d	562.87	5.06E-09	148Nd	1.728 h	575.40	1.66E-07
238U	23.45 m	548.10	4.71E-07	151Eu	13.522 y	562.93	1.47E-02	164Dy	2.334 h	575.56	7.44E-03
96Zr	72.1 m	549.25	7.21E-09	151Eu	9.3116 h	562.93	4.78E-02	113In	71.9 s	575.80	3.55E-07
176Yb	1.911 h	549.90	7.77E-08	124Sn	9.64 d	563.00	6.64E-10	186W	23.72 h	576.31	8.06E-06
148Nd	53.08 h	550.01	3.96E-09	75As	26.24 h	563.23	1.37E-03	104Ru	4.44 h	577.00	3.58E-07
150Nd	12.44 m	550.04	5.16E-06	133Cs	2.0652 y	563.25	3.97E-02	150Nd	12.44 m	577.36	3.03E-06
130Ba	11.5 d	550.39	3.02E-09	133Cs	2.0652 y	563.25	3.97E-02	186W	23.72 h	578.72	1.21E-06
130Te	25 m	550.40	2.87E-07	153Eu	8.601 y	563.40	6.27E-05	152Sm	1.92855 d	578.75	2.51E-05
150Nd	28.4 h	550.70	1.31E-07	148Nd	1.728 h	563.80	1.99E-07	148Nd	1.728 h	579.28	1.60E-06
150Nd	12.44 m	551.10	1.12E-07	238U	23.45 m	563.90	2.87E-07	168Yb	32.018 d	579.85	7.37E-07
108Pd	13.7012 h	551.40	2.41E-07	151Eu	13.522 y	563.99	1.77E-01	110Pd	5.5 h	580.00	1.59E-06
186W	23.72 h	551.52	6.25E-03	121Sb	2.7238 d	564.24	4.05E-02	150Nd	12.44 m	580.20	1.35E-07
176Yb	1.911 h	552.00	1.81E-07	186W	23.72 h	564.62	1.48E-05	98Mo	2.7479 d	580.51	2.46E-08
110Pd	5.5 h	552.20	2.23E-07	150Nd	28.4 h	565.00	2.98E-06	84Sr	67.63 m	580.64	7.28E-10
122Sn	40.06 m	552.50	1.22E-08	164Dy	2.334 h	565.72	1.25E-02	158Gd	18.479 h	580.81	5.03E-06
110Pd	5.5 h	552.60	1.91E-08	238U	23.45 m	566.14	4.71E-07	150Nd	28.4 h	581.10	3.80E-08
148Nd	53.08 h	552.92	1.25E-08	151Eu	13.522 y	566.44	5.08E-02	98Mo	2.7479 d	581.30	6.83E-10
150Nd	28.4 h	554.20	1.37E-07	100Mo	14.61 m	566.62	3.42E-06	153Eu	8.601 y	582.01	1.98E-02
81Br	35.282 h	554.35	2.15E-02	130Te	25 m	567.33	1.07E-06	86Kr	76.3 m	582.30	4.49E-09

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
76Ge	11.30 h	582.54	1.32E-06	150Nd	28.4 h	599.10	6.46E-08	76Ge	11.30 h	614.39	1.50E-07
100Mo	14.61 m	582.90	3.34E-07	81Br	35.282 h	599.50	5.06E-06	76Ge	11.30 h	614.39	8.54E-07
148Nd	1.728 h	582.90	3.86E-07	153Eu	8.601 y	600.00	1.34E-04	76Ge	52.9 s	614.43	9.86E-08
148Nd	1.728 h	583.03	1.05E-06	124Sn	2.75855 y	600.60	2.40E-05	121Sb	2.7238 d	615.00	6.47E-06
150Nd	28.4 h	583.10	2.16E-07	168Yb	32.018 d	600.61	4.12E-07	180Hf	42.39 d	615.17	1.25E-04
110Pd	5.5 h	583.40	2.07E-07	150Nd	12.44 m	600.80	2.13E-07	152Sm	1.92855 d	615.51	4.29E-06
152Sm	1.92855 d	584.55	8.12E-06	71Ga	14.10 h	600.95	3.05E-03	152Sm	1.92855 d	615.80	4.29E-06
150Nd	28.4 h	584.90	7.21E-08	130Te	25 m	602.04	4.37E-05	150Nd	12.44 m	615.90	1.46E-07
130Ba	11.5 d	585.04	1.67E-06	96Zr	16.744 m	602.37	2.02E-07	151Eu	13.522 y	616.05	3.57E-03
150Nd	12.44 m	585.22	1.10E-05	150Nd	12.44 m	602.40	3.25E-07	158Gd	18.479 h	616.23	1.37E-07
170Er	7.516 h	586.00	6.60E-07	75As	26.24 h	602.50	1.03E-06	100Mo	14.22 m	616.30	6.22E-08
151Eu	9.3116 h	586.27	2.74E-03	108Pd	13.7012 h	602.50	3.15E-06	79Br	17.68 m	616.30	9.17E-03
151Eu	13.522 y	586.27	1.79E-01	238U	23.45 m	602.68	1.13E-06	100Mo	14.22 m	617.31	2.20E-07
142Ce	33.039 h	587.20	4.29E-06	123Sb	93 s	602.72	2.04E-04	110Pd	5.5 h	617.50	5.58E-08
71Ga	14.10 h	587.44	6.69E-05	123Sb	60.2 d	602.73	2.84E-02	158Gd	18.479 h	617.62	1.15E-06
152Sm	1.92855 d	587.60	3.83E-06	153Eu	8.601 y	602.81	7.39E-05	74Ge	82.78 m	617.70	4.29E-06
238U	23.45 m	587.77	5.40E-06	100Mo	14.61 m	602.98	3.88E-07	74Ge	82.78 m	617.70	6.19E-06
148Nd	1.728 h	588.50	1.21E-07	150Nd	28.4 h	603.00	9.49E-08	74Se	119.79 d	617.80	5.46E-07
164Dy	2.334 h	588.57	3.10E-04	109Ag	249.78 d	603.08	4.05E-06	148Nd	1.728 h	617.90	1.60E-07
186W	23.72 h	588.95	1.50E-04	152Sm	1.92855 d	603.60	3.43E-05	152Sm	1.92855 d	617.90	5.59E-06
193Ir	19.3 h	589.18	1.06E-03	154Sm	22.3 m	603.80	2.94E-06	103Rh	4.34 m	618.00	8.40E-08
146Nd	10.98 d	589.35	1.70E-06	150Nd	28.4 h	604.00	6.83E-08	139La	1.6785 d	618.12	5.57E-05
124Sn	9.52 m	589.60	2.70E-07	152Sm	1.92855 d	604.03	3.43E-05	186W	23.72 h	618.26	7.73E-03
150Nd	12.44 m	589.61	2.47E-06	133Cs	2.0652 y	604.72	4.65E-01	204Hg	5.14 m	618.60	6.09E-09
100Mo	14.61 m	590.10	4.64E-06	133Cs	2.0652 y	604.72	4.65E-01	180Hf	42.39 d	618.66	1.34E-05
100Mo	14.61 m	590.10	8.02E-05	151Eu	9.3116 h	605.00	8.63E-04	107Ag	2.395 m	618.86	9.25E-04
148Nd	1.728 h	590.74	8.83E-08	130Te	25 m	605.55	1.22E-06	150Nd	12.44 m	619.01	2.81E-06
99Tc	15.8 s	590.83	2.73E-02	150Nd	12.44 m	605.80	2.02E-07	81Br	6.13 m	619.09	6.40E-07
148Nd	53.08 h	590.88	1.47E-06	150Nd	28.4 h	605.90	8.16E-08	81Br	35.282 h	619.11	1.32E-02
152Sm	1.92855 d	590.96	9.04E-06	81Br	35.282 h	606.30	3.72E-04	98Mo	2.7479 d	620.03	1.64E-08
104Ru	4.44 h	591.20	1.52E-06	148Nd	1.728 h	606.67	2.21E-07	130Ba	11.5 d	620.11	2.02E-06
153Eu	8.601 y	591.76	1.11E-01	124Sn	2.75855 y	606.71	6.77E-06	109Ag	249.78 d	620.36	1.00E-03
184Os	93.6 d	592.07	8.69E-05	100Mo	14.61 m	606.80	3.04E-07	153Eu	8.601 y	620.52	2.04E-03
150Nd	12.44 m	592.40	2.02E-07	193Ir	19.3 h	607.61	2.95E-05	150Nd	28.4 h	620.60	6.08E-07
150Nd	28.4 h	593.60	8.54E-08	100Mo	14.61 m	608.34	4.26E-06	164Dy	2.334 h	620.64	9.22E-03
193Ir	19.3 h	594.29	4.69E-04	50Ti	5.76 m	608.55	4.78E-06	170Er	7.516 h	621.03	1.47E-05
148Nd	1.728 h	594.40	6.07E-07	170Er	7.516 h	608.60	6.11E-06	104Ru	4.44 h	621.04	1.34E-06
146Nd	10.98 d	594.80	9.84E-06	170Er	7.516 h	609.00	3.30E-06	193Ir	19.3 h	621.29	7.26E-05
114Cd	53.46 h	595.38	2.67E-08	150Nd	28.4 h	609.25	3.99E-07	150Nd	12.44 m	621.30	2.69E-07
110Pd	5.5 h	595.40	1.00E-07	64Ni	2.5172 h	609.50	8.38E-07	98Mo	2.7479 d	621.77	1.79E-07
151Eu	13.522 y	595.61	1.20E-03	152Sm	1.92855 d	609.50	9.80E-05	193Ir	19.3 h	621.97	2.50E-03
130Ba	11.5 d	596.50	2.30E-09	198Pt	30.8 m	609.80	4.07E-07	100Mo	14.22 m	621.99	3.40E-07
150Nd	12.44 m	596.64	3.59E-06	152Sm	1.92855 d	609.95	9.80E-05	103Rh	4.34 m	623.20	1.68E-07
152Sm	1.92855 d	596.70	8.35E-05	164Dy	2.334 h	610.29	5.01E-04	110Pd	5.5 h	623.20	3.19E-07
104Ru	4.44 h	597.10	5.63E-07	102Ru	39.26 d	610.33	4.77E-04	187Re	17.005 h	623.80	1.29E-05
153Eu	8.601 y	597.50	1.23E-04	76Ge	11.30 h	610.96	1.04E-07	238U	23.45 m	624.00	1.61E-06
150Nd	12.44 m	597.60	1.80E-06	100Mo	14.61 m	611.60	5.55E-07	76Ge	11.30 h	624.76	3.07E-07
150Nd	28.4 h	597.70	6.65E-07	102Ru	39.26 d	612.02	8.90E-06	168Yb	32.018 d	624.89	1.75E-06
150Nd	28.4 h	598.00	7.59E-08	150Nd	12.44 m	612.22	6.28E-07	153Eu	8.601 y	625.26	7.10E-03
148Nd	1.728 h	598.06	6.07E-07	186W	23.72 h	612.90	2.69E-06	100Mo	14.61 m	625.30	3.80E-07
192Os	30.11 h	598.10	9.39E-08	153Eu	8.601 y	613.26	2.08E-03	186W	23.72 h	625.52	1.34E-03
152Sm	1.92855 d	598.30	1.38E-05	127I	24.99 m	613.49	2.30E-06	150Nd	12.44 m	625.60	2.58E-07
153Eu	8.601 y	598.30	1.39E-04	148Nd	53.08 h	613.92	3.17E-07	109Ag	249.78 d	626.26	7.89E-05
148Nd	53.08 h	598.42	4.62E-09	168Yb	32.018 d	614.10	3.50E-08	100Mo	14.22 m	627.00	1.79E-06
152Sm	1.92855 d	598.54	1.38E-05	142Ce	33.039 h	614.22	1.93E-07	103Rh	42.3 s	629.60	2.91E-05

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
150Nd	12.44 m	629.74	1.23E-06	193Ir	19.3 h	645.15	8.93E-03	168Yb	32.018 d	663.60	7.33E-07
71Ga	14.10 h	629.96	1.37E-02	96Ru	2.9 d	645.23	2.05E-07	154Sm	22.3 m	664.00	1.57E-05
148Nd	1.728 h	630.24	4.03E-06	110Pd	5.5 h	645.60	7.97E-08	238U	23.45 m	664.08	2.18E-06
185Re	3.7186 d	630.32	1.38E-04	123Sb	93 s	645.82	2.00E-04	148Nd	53.08 h	664.40	1.65E-08
152Sm	1.92855 d	630.50	7.58E-07	123Sb	60.2 d	645.85	2.16E-03	142Ce	33.039 h	664.57	9.15E-05
109Ag	249.78 d	630.62	1.22E-05	184Os	93.6 d	646.12	5.14E-03	153Eu	8.601 y	664.68	6.49E-04
170Er	7.516 h	630.70	8.25E-07	238U	23.45 m	646.17	5.40E-07	151Eu	13.522 y	664.78	3.88E-03
238U	23.45 m	631.09	1.72E-05	112Sn	115.09 d	646.83	5.46E-12	198Pt	30.8 m	665.00	1.47E-06
154Sm	22.3 m	631.20	4.50E-06	151Eu	9.3116 h	646.90	1.54E-04	154Sm	22.3 m	665.00	1.47E-06
136Ce	9.0 h	631.38	2.39E-08	186W	23.72 h	647.30	9.41E-07	75As	26.24 h	665.00	4.11E-05
100Mo	14.22 m	631.74	1.65E-07	108Pd	13.7012 h	647.30	9.64E-06	150Nd	12.44 m	665.21	7.86E-07
76Ge	11.30 h	631.82	1.17E-05	51V	3.743 m	647.47	4.85E-05	148Nd	1.728 h	665.22	3.26E-07
104Ru	4.44 h	632.34	2.86E-06	109Ag	249.78 d	647.80	6.45E-06	75As	26.24 h	665.34	4.16E-04
123Sb	60.2 d	632.39	3.04E-05	150Nd	12.44 m	648.40	5.61E-08	76Ge	11.30 h	665.40	8.18E-09
132Ba	38.9 h	632.50	7.38E-10	154Sm	22.3 m	648.60	1.96E-06	79Br	17.68 m	665.80	1.48E-03
110Pd	5.5 h	632.80	2.84E-06	153Eu	8.601 y	649.44	1.75E-03	109Ag	249.78 d	666.60	1.03E-05
151Eu	9.3116 h	632.80	2.46E-04	198Pt	30.8 m	649.80	2.85E-07	70Zn	2.45 m	666.80	1.48E-07
107Ag	2.395 m	632.98	6.12E-03	153Eu	8.601 y	650.60	2.19E-04	150Nd	12.44 m	668.10	2.24E-07
187Re	17.005 h	632.98	6.87E-03	150Nd	12.44 m	650.80	5.61E-08	192Os	30.11 h	668.30	1.05E-07
168Yb	32.018 d	633.32	2.53E-09	100Mo	14.61 m	650.90	1.06E-07	150Nd	28.4 h	668.50	2.85E-08
164Dy	2.334 h	633.42	5.37E-02	148Nd	1.728 h	651.00	1.32E-06	110Pd	5.5 h	668.50	7.82E-07
150Nd	12.44 m	634.00	2.24E-07	102Ru	39.26 d	651.80	5.73E-07	150Nd	28.4 h	668.70	3.04E-06
76Ge	11.30 h	634.39	3.51E-06	124Sn	9.64 d	652.60	1.74E-09	153Eu	8.601 y	668.90	2.91E-04
152Sm	1.92855 d	634.80	3.98E-06	100Mo	14.61 m	652.70	1.14E-07	150Nd	28.4 h	669.20	2.47E-06
187Re	17.005 h	634.98	7.94E-04	104Ru	4.44 h	652.70	5.81E-06	142Ce	33.039 h	670.12	1.31E-07
104Ru	4.44 h	635.50	2.68E-07	148Nd	1.728 h	653.90	3.86E-07	96Ru	2.9 d	670.21	2.84E-08
148Nd	1.728 h	635.70	1.43E-06	150Nd	28.4 h	654.25	2.03E-06	150Nd	12.44 m	670.39	2.81E-06
124Sn	2.75855 y	635.95	1.53E-05	130Te	25 m	654.26	1.59E-05	170Er	7.516 h	670.70	4.16E-05
148Nd	1.728 h	636.20	1.10E-06	110Pd	5.5 h	654.70	1.20E-07	151Eu	13.522 y	671.16	7.53E-03
150Nd	28.4 h	636.20	1.20E-05	148Nd	1.728 h	654.83	1.69E-04	150Nd	28.4 h	671.28	7.59E-06
108Pd	13.7012 h	636.30	3.94E-06	150Nd	12.44 m	655.00	3.25E-07	37Cl	715 ms	671.36	6.71E-04
150Nd	12.44 m	636.40	2.58E-07	76Ge	11.30 h	655.28	2.09E-08	124Sn	2.75855 y	671.44	2.41E-06
148Nd	53.08 h	636.50	1.98E-07	150Nd	28.4 h	655.60	9.49E-08	148Nd	1.728 h	671.56	2.21E-07
152Sm	1.92855 d	636.50	1.48E-05	115In	54.29 m	655.70	3.10E-03	170Er	7.516 h	671.70	3.63E-06
130Te	8.0233 d	636.99	7.90E-05	104Ru	4.44 h	656.21	3.93E-05	187Re	17.005 h	672.54	6.01E-04
112Sn	115.09 d	638.03	1.33E-09	151Eu	13.522 y	656.49	5.57E-02	76Ge	11.30 h	673.09	2.25E-07
186W	23.72 h	638.65	4.03E-06	75As	26.24 h	657.05	7.03E-03	76Ge	11.30 h	673.09	9.00E-07
104Ru	4.44 h	638.66	4.20E-06	148Nd	1.728 h	657.20	3.86E-07	150Nd	12.44 m	673.22	7.86E-07
76Ge	11.30 h	638.97	6.82E-08	152Sm	1.92855 d	657.21	3.06E-06	100Mo	14.22 m	673.40	1.28E-07
150Nd	12.44 m	639.00	1.80E-07	152Sm	1.92855 d	657.55	3.06E-06	148Nd	1.728 h	673.58	2.32E-07
192Os	30.11 h	639.09	1.05E-06	130Ba	11.5 d	657.60	4.86E-09	86Kr	76.3 m	673.83	2.45E-07
115In	54.29 m	639.10	8.34E-04	109Ag	249.78 d	657.76	3.48E-02	165Ho	26.795 h	674.24	1.54E-04
79Br	17.68 m	639.40	3.58E-04	109Ag	24.56 s	657.76	3.74E-02	158Gd	18.479 h	674.26	2.29E-08
75As	26.24 h	639.50	4.11E-06	96Zr	72.1 m	657.94	1.44E-05	130Ba	11.5 d	674.43	1.85E-07
96Ru	2.9 d	639.72	2.79E-08	238U	23.45 m	658.50	1.38E-07	151Eu	13.522 y	674.68	6.59E-02
186W	23.72 h	641.10	4.37E-05	150Nd	12.44 m	658.61	6.17E-06	151Eu	13.522 y	674.68	6.63E-03
141Pr	19.12 h	642.00	3.77E-06	76Ge	11.30 h	660.06	5.18E-08	142Ce	33.039 h	675.50	1.38E-08
153Eu	8.601 y	642.40	9.85E-05	164Dy	2.334 h	660.08	2.52E-03	148Nd	1.728 h	675.79	5.41E-07
100Mo	14.61 m	642.71	5.07E-06	100Mo	14.61 m	660.64	9.35E-07	197Au	2.6944 d	675.88	8.44E-03
130Te	8.0233 d	642.72	2.39E-06	150Nd	28.4 h	661.55	1.90E-07	100Mo	14.61 m	675.90	1.90E-07
168Yb	32.018 d	642.88	2.92E-08	148Nd	1.728 h	661.90	1.10E-07	164Dy	1.257 m	676.00	2.63E-05
124Sn	9.52 m	643.00	2.06E-07	238U	23.45 m	662.24	4.25E-05	170Er	7.516 h	676.10	4.71E-05
150Nd	12.44 m	643.11	5.61E-07	152Sm	1.92855 d	662.40	3.83E-07	104Ru	4.44 h	676.36	2.96E-04
151Eu	13.522 y	644.37	2.44E-03	123Sb	60.2 d	662.49	8.53E-06	109Ag	249.78 d	676.58	5.16E-05
198Pt	30.8 m	644.63	2.32E-06	150Nd	28.4 h	663.50	7.97E-07	153Eu	8.601 y	676.60	3.52E-03

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
150Nd	12.44 m	676.80	4.49E-07	150Nd	12.44 m	695.70	1.12E-07	142Ce	33.039 h	709.59	1.38E-07
152Sm	1.92855 d	677.00	3.37E-07	130Te	25 m	696.19	1.87E-06	192Os	30.11 h	709.93	2.87E-07
79Br	17.68 m	677.00	1.10E-05	148Nd	1.728 h	696.26	3.64E-06	238U	23.45 m	710.35	2.87E-07
154Sm	22.3 m	677.20	1.76E-06	130Ba	11.5 d	696.49	2.04E-07	168Yb	32.018 d	710.36	1.13E-08
109Ag	249.78 d	677.62	3.89E-03	151Eu	13.522 y	696.87	1.12E-03	81Br	6.13 m	711.20	4.83E-07
150Nd	12.44 m	677.88	2.01E-05	110Pd	5.5 h	697.00	1.12E-07	150Nd	28.4 h	712.00	7.97E-07
148Nd	1.728 h	678.10	1.10E-07	81Br	6.13 m	698.37	9.31E-06	192Os	30.11 h	712.10	2.15E-06
136Ce	9.0 h	678.26	1.60E-09	81Br	35.282 h	698.37	8.57E-03	76Ge	11.30 h	712.35	1.40E-06
150Nd	28.4 h	678.30	3.80E-07	76Ge	11.30 h	698.54	3.85E-07	148Nd	1.728 h	712.59	1.49E-06
151Eu	13.522 y	678.62	1.82E-01	136Ce	9.0 h	698.72	5.59E-08	151Eu	13.522 y	712.84	3.73E-02
150Nd	12.44 m	679.60	3.70E-07	150Nd	28.4 h	699.00	1.61E-07	100Mo	14.61 m	713.04	1.39E-05
115In	54.29 m	679.90	8.34E-04	96Zr	16.744 m	699.20	1.48E-08	150Nd	28.4 h	713.40	7.59E-08
76Ge	11.30 h	680.36	6.55E-08	151Eu	9.3116 h	699.27	1.51E-02	154Sm	22.3 m	713.40	1.57E-06
146Nd	10.98 d	680.52	7.25E-07	193Ir	19.3 h	699.50	1.89E-05	123Sb	60.2 d	713.78	6.62E-04
148Nd	1.728 h	681.34	1.71E-07	151Eu	9.3116 h	700.30	2.31E-03	152Sm	1.92855 d	713.90	1.77E-06
150Nd	12.44 m	682.00	2.69E-07	193Ir	19.3 h	700.55	1.97E-04	238U	23.45 m	714.09	9.31E-07
152Sm	1.92855 d	682.00	1.15E-06	238U	23.45 m	700.93	4.83E-07	176Yb	1.911 h	714.20	2.59E-07
89Y	3.19 h	682.04	7.57E-08	104Ru	4.44 h	701.00	3.58E-07	76Ge	11.30 h	714.35	1.21E-05
159Tb	73.2 d	682.31	1.83E-03	152Sm	1.92855 d	701.80	2.22E-07	198Pt	30.8 m	714.55	5.09E-05
186W	23.72 h	682.34	8.40E-06	100Mo	14.61 m	701.80	1.49E-06	109Ag	249.78 d	714.90	3.39E-06
142Ce	33.039 h	682.82	1.38E-07	108Pd	13.7012 h	701.90	1.22E-06	164Dy	2.334 h	715.33	5.05E-02
151Eu	13.522 y	683.32	1.20E-03	93Nb	6.263 m	702.00	8.15E-07	100Mo	14.22 m	715.53	2.78E-06
124Sn	9.64 d	684.00	4.57E-10	130Te	25 m	702.70	7.90E-08	150Nd	12.44 m	715.70	3.70E-07
76Ge	11.30 h	685.37	4.27E-08	150Nd	12.44 m	702.80	1.68E-07	153Eu	8.601 y	715.77	4.25E-03
76Ge	11.30 h	685.37	1.13E-07	151Eu	13.522 y	703.25	6.98E-04	110Pd	5.5 h	716.00	3.19E-08
186W	23.72 h	685.73	3.36E-02	151Eu	13.522 y	703.25	1.36E-03	84Sr	64.82 d	716.87	3.16E-10
146Nd	10.98 d	685.90	3.01E-05	130Ba	11.5 d	703.44	9.00E-09	184Os	93.6 d	717.42	2.60E-04
100Mo	14.61 m	686.00	2.81E-07	238U	23.45 m	703.48	6.44E-07	150Nd	12.44 m	717.60	1.09E-06
151Eu	13.522 y	686.61	7.76E-03	151Eu	9.3116 h	703.54	1.43E-02	150Nd	28.4 h	717.72	3.42E-05
148Nd	1.728 h	686.94	1.88E-06	151Eu	9.3116 h	703.70	1.54E-04	148Nd	1.728 h	718.43	1.05E-06
109Ag	249.78 d	687.01	2.38E-03	96Zr	16.744 m	703.76	1.49E-07	110Pd	5.5 h	718.90	1.44E-07
79Br	17.68 m	687.40	1.65E-05	110Pd	5.5 h	703.80	5.26E-07	150Nd	28.4 h	719.00	9.49E-08
150Nd	12.44 m	687.50	1.80E-07	79Br	17.68 m	703.80	2.66E-04	152Sm	1.92855 d	719.00	1.91E-07
151Eu	13.522 y	688.67	3.26E-01	148Nd	1.728 h	704.07	7.17E-08	151Eu	13.522 y	719.35	2.29E-02
151Eu	9.3116 h	688.69	1.41E-02	150Nd	28.4 h	704.24	2.85E-06	151Eu	13.522 y	719.35	1.04E-01
115In	54.29 m	689.00	4.53E-03	51V	3.743 m	704.60	3.64E-06	96Zr	72.1 m	719.53	1.33E-08
99Tc	15.8 s	689.40	1.60E-04	114Cd	53.46 h	705.18	1.26E-09	150Nd	12.44 m	719.60	3.93E-07
98Mo	2.7479 d	689.60	2.87E-09	165Ho	26.795 h	705.21	1.13E-04	100Mo	14.22 m	720.02	8.86E-07
114Cd	53.46 h	690.23	9.58E-09	76Ge	11.30 h	705.24	1.80E-07	150Nd	12.44 m	720.30	2.24E-07
96Zr	16.744 m	690.52	2.69E-08	115In	54.29 m	705.70	4.76E-03	204Hg	5.14 m	720.80	3.45E-09
176Yb	1.911 h	691.90	1.55E-07	170Er	7.516 h	705.80	1.98E-06	70Zn	2.45 m	721.40	8.88E-08
41K	12.360 h	692.00	1.71E-07	150Nd	12.44 m	705.85	6.40E-07	142Ce	33.039 h	721.93	8.67E-05
153Eu	8.601 y	692.42	4.01E-02	109Ag	249.78 d	706.68	6.07E-03	123Sb	60.2 d	722.78	3.13E-03
121Sb	2.7238 d	692.65	2.21E-03	152Sm	1.92855 d	706.80	1.76E-07	238U	23.45 m	722.87	6.44E-06
186W	23.72 h	693.06	1.68E-06	104Ru	4.44 h	707.00	1.79E-07	130Te	8.0233 d	722.91	1.95E-05
168Yb	32.018 d	693.46	3.14E-09	108Pd	13.7012 h	707.00	6.26E-07	153Eu	8.601 y	723.30	4.49E-01
170Er	7.516 h	693.90	2.48E-06	238U	23.45 m	707.29	6.78E-07	94Zr	64.032 d	724.19	8.71E-05
164Dy	2.334 h	694.08	1.10E-03	96Zr	16.744 m	707.40	4.65E-09	150Nd	12.44 m	724.28	8.98E-07
152Sm	1.92855 d	694.10	1.53E-07	159Tb	73.2 d	707.60	3.06E-05	150Nd	12.44 m	724.28	1.57E-06
110Pd	5.5 h	694.20	1.59E-06	100Mo	14.61 m	707.80	2.66E-07	104Ru	4.44 h	724.30	8.94E-04
100Mo	14.22 m	694.30	2.23E-07	109Ag	249.78 d	708.13	8.48E-05	136Ce	9.0 h	724.40	1.28E-09
192Os	30.11 h	695.12	3.98E-07	150Nd	28.4 h	709.25	1.16E-06	108Pd	13.7012 h	724.40	7.42E-08
75As	26.24 h	695.20	1.03E-05	136Ce	9.0 h	709.30	1.92E-09	110Pd	5.5 h	724.82	2.23E-07
238U	23.45 m	695.23	1.01E-06	150Nd	12.44 m	709.30	6.73E-08	113In	49.51 d	725.24	2.78E-04
100Mo	14.61 m	695.56	2.78E-05	123Sb	60.2 d	709.32	3.94E-04	164Dy	2.334 h	725.39	1.33E-03

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
148Nd	1.728 h	726.82	8.50E-07	186W	23.72 h	745.22	3.66E-04	185Re	3.7186 d	767.48	1.54E-04
150Nd	28.4 h	727.00	5.70E-08	130Ba	11.5 d	745.50	1.97E-09	142Ce	33.039 h	767.70	5.09E-08
130Te	25 m	727.00	4.88E-06	110Pd	5.5 h	745.60	1.00E-07	103Rh	4.34 m	767.78	1.40E-05
75As	26.24 h	727.00	2.10E-05	238U	23.45 m	745.64	9.08E-07	170Er	7.516 h	767.80	7.43E-07
186W	23.72 h	727.22	4.70E-05	76Ge	11.30 h	745.75	1.63E-06	150Nd	12.44 m	767.89	2.24E-06
150Nd	12.44 m	727.50	8.98E-08	198Pt	30.8 m	746.40	6.92E-07	148Nd	1.728 h	768.17	1.27E-06
148Nd	1.728 h	727.88	3.48E-07	150Nd	12.44 m	746.50	6.73E-08	154Sm	22.3 m	768.40	1.47E-06
151Eu	13.522 y	727.99	4.11E-03	238U	23.45 m	748.08	2.41E-05	84Sr	67.63 m	768.50	2.51E-10
100Mo	14.61 m	728.19	4.10E-07	184Os	93.6 d	749.46	2.06E-07	184Os	93.6 d	768.93	2.31E-07
142Ce	33.039 h	729.87	4.82E-08	148Nd	1.728 h	749.63	2.87E-07	151Eu	13.522 y	768.94	3.41E-02
76Ge	11.30 h	730.40	3.45E-08	76Ge	11.30 h	749.86	1.49E-06	150Nd	28.4 h	769.10	8.92E-07
115In	54.29 m	730.70	1.91E-03	150Nd	12.44 m	751.00	1.12E-07	64Ni	2.5172 h	770.60	5.62E-07
238U	23.45 m	730.92	2.87E-06	139La	1.6785 d	751.65	5.97E-03	64Zn	244.01 d	770.64	3.30E-07
46Ca	4.536 d	731.60	1.85E-10	150Nd	28.4 h	752.82	1.08E-05	136Ce	9.0 h	770.97	1.09E-08
84Kr	4.480 h	731.60	9.59E-08	238U	23.45 m	752.85	3.45E-07	75As	26.24 h	771.74	1.39E-04
84Sr	67.63 m	731.80	1.22E-08	198Pt	30.8 m	752.90	1.18E-06	96Zr	16.744 m	772.00	3.55E-08
150Nd	12.44 m	731.90	1.68E-07	110Pd	5.5 h	753.00	9.57E-08	71Ga	14.10 h	772.00	2.37E-05
170Er	7.516 h	732.50	1.61E-05	150Nd	12.44 m	753.00	5.05E-07	160Gd	3.55 m	772.18	1.45E-07
100Mo	14.61 m	732.98	1.12E-06	158Gd	18.479 h	753.74	1.31E-08	150Nd	28.4 h	772.76	7.59E-06
150Nd	12.44 m	734.00	8.53E-07	150Nd	12.44 m	753.80	2.24E-07	186W	23.72 h	772.89	5.07E-03
99Tc	15.8 s	734.70	4.67E-05	96Ru	2.9 d	753.99	2.50E-07	238U	23.45 m	772.95	8.16E-07
192Os	30.11 h	735.30	1.49E-07	148Nd	1.728 h	754.29	8.28E-07	185Re	3.7186 d	773.32	1.03E-07
151Eu	13.522 y	735.40	2.25E-03	150Nd	28.4 h	755.00	5.70E-08	168Yb	32.018 d	773.39	7.91E-07
81Br	6.13 m	735.60	9.24E-09	75As	26.24 h	755.00	5.13E-07	150Nd	12.44 m	773.62	5.61E-07
81Br	35.282 h	735.64	2.05E-05	150Nd	12.44 m	755.57	9.88E-06	150Nd	12.44 m	773.62	2.24E-06
123Sb	60.2 d	735.74	1.62E-05	151Eu	13.522 y	756.12	2.09E-03	100Mo	14.61 m	774.15	1.46E-06
123Sb	60.2 d	735.74	2.08E-05	94Zr	64.032 d	756.73	1.07E-04	153Eu	8.601 y	774.40	1.79E-04
71Ga	14.10 h	735.75	2.02E-04	153Eu	8.601 y	756.80	1.01E-01	148Nd	1.728 h	774.60	6.62E-08
150Nd	28.4 h	736.12	3.99E-06	130Ba	11.5 d	757.00	6.57E-10	109Ag	249.78 d	774.70	2.21E-06
148Nd	1.728 h	736.18	3.92E-07	150Nd	12.44 m	757.90	3.14E-07	238U	23.45 m	774.73	3.91E-06
150Nd	12.44 m	736.23	4.99E-05	154Sm	22.3 m	758.00	8.81E-07	96Zr	16.744 m	775.00	2.73E-08
108Pd	13.7012 h	736.70	6.65E-07	150Nd	28.4 h	758.50	7.59E-08	123Sb	60.2 d	775.20	2.73E-06
99Tc	15.8 s	736.90	6.67E-06	148Nd	1.728 h	758.65	3.31E-07	76Ge	11.30 h	775.75	2.55E-08
100Mo	14.61 m	737.30	1.44E-07	148Nd	1.728 h	758.65	3.31E-07	100Mo	14.61 m	775.80	4.33E-07
153Eu	8.601 y	737.60	1.41E-04	103Rh	4.34 m	758.78	2.01E-06	192Os	30.11 h	775.90	5.52E-08
104Ru	4.44 h	738.27	1.43E-06	168Yb	32.018 d	760.24	3.00E-10	148Nd	1.728 h	775.97	7.17E-08
71Ga	14.10 h	738.50	3.00E-05	152Sm	1.92855 d	760.50	2.45E-07	75As	26.24 h	776.50	1.03E-06
150Nd	12.44 m	739.20	1.28E-05	176Yb	1.911 h	760.50	2.85E-06	81Br	35.282 h	776.52	2.53E-02
168Yb	32.018 d	739.42	6.61E-10	148Nd	1.728 h	761.46	6.07E-07	81Br	6.13 m	776.52	7.11E-05
98Mo	2.7479 d	739.50	8.28E-05	98Mo	2.7479 d	761.77	1.57E-08	150Nd	12.44 m	777.10	1.68E-07
100Mo	14.61 m	739.54	1.24E-06	110Pd	5.5 h	762.20	1.00E-06	103Rh	4.34 m	777.20	8.12E-07
75As	26.24 h	740.10	1.33E-04	136Ce	34.4 h	762.30	5.03E-08	103Rh	42.3 s	777.77	1.81E-04
148Nd	1.728 h	740.57	3.04E-07	152Sm	1.92855 d	763.80	3.37E-07	98Mo	2.7479 d	777.92	2.92E-05
103Rh	4.34 m	740.69	1.85E-06	109Ag	249.78 d	763.94	8.22E-03	124Sn	9.52 m	778.00	1.67E-08
150Nd	28.4 h	740.80	1.90E-07	151Eu	9.3116 h	764.90	9.24E-05	100Mo	14.61 m	778.29	4.06E-06
150Nd	12.44 m	741.70	3.93E-07	151Eu	13.522 y	764.90	7.37E-02	108Pd	13.7012 h	778.30	5.97E-07
96Zr	16.744 m	743.36	1.37E-05	148Nd	1.728 h	765.10	1.60E-07	151Eu	9.3116 h	778.90	4.01E-04
96Zr	52.7 s	743.36	1.43E-05	159Tb	73.2 d	765.28	6.59E-03	151Eu	13.522 y	778.90	5.03E+00
148Nd	1.728 h	743.50	5.52E-08	150Nd	12.44 m	765.40	1.46E-06	176Yb	1.911 h	779.30	4.92E-06
127I	24.99 m	743.50	1.16E-04	123Sb	60.2 d	765.80	3.53E-06	238U	23.45 m	779.58	2.76E-07
76Ge	11.30 h	743.65	2.99E-07	94Zr	34.991 d	765.80	1.94E-04	115In	54.29 m	780.40	7.62E-03
150Nd	12.44 m	744.00	2.24E-07	76Ge	11.30 h	766.72	1.33E-06	198Pt	30.8 m	780.50	6.52E-07
109Ag	249.78 d	744.28	1.74E-03	46Ca	4.536 d	767.10	2.95E-09	150Nd	12.44 m	780.70	3.03E-07
130Te	25 m	744.40	7.90E-08	103Rh	42.3 s	767.10	3.26E-04	115In	54.29 m	781.10	3.10E-03
170Er	7.516 h	745.00	1.09E-06	186W	23.72 h	767.40	1.95E-06	76Ge	11.30 h	781.26	1.71E-06



Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
148Nd	1.728 h	781.40	8.28E-08	153Eu	8.601 y	800.20	7.17E-04	148Nd	1.728 h	818.18	1.21E-07
108Pd	13.7012 h	781.40	4.43E-06	124Sn	9.64 d	800.28	4.57E-08	115In	54.29 m	818.70	3.24E-01
136Ce	9.0 h	781.57	5.43E-09	192Os	30.11 h	800.90	4.42E-08	160Gd	3.55 m	818.90	2.82E-08
168Yb	32.018 d	781.64	1.08E-09	150Nd	12.44 m	801.00	2.02E-07	238U	23.45 m	819.22	3.45E-05
176Yb	1.911 h	783.30	1.04E-07	153Eu	8.601 y	801.21	2.69E-04	150Nd	12.44 m	819.75	9.09E-07
150Nd	12.44 m	783.40	2.69E-07	133Cs	2.0652 y	801.95	4.14E-02	104Ru	4.44 h	820.00	2.68E-07
170Er	7.516 h	784.09	3.96E-05	133Cs	2.0652 y	801.95	4.14E-02	164Dy	2.334 h	820.11	7.63E-04
192Os	30.11 h	784.20	9.39E-08	76Ge	11.30 h	802.84	4.73E-08	74Se	119.79 d	821.56	1.68E-08
76Ge	11.30 h	784.77	2.22E-06	100Mo	14.61 m	804.29	4.00E-06	104Ru	4.44 h	821.98	4.02E-06
96Ru	2.9 d	785.05	2.39E-07	96Zr	16.744 m	804.52	9.02E-08	150Nd	28.4 h	822.45	2.85E-07
150Nd	28.4 h	785.10	1.86E-06	130Te	25 m	805.57	1.44E-07	124Sn	9.64 d	822.48	1.83E-07
148Nd	53.08 h	785.23	7.93E-09	96Zr	16.744 m	805.60	4.10E-08	99Tc	15.8 s	822.50	3.24E-04
150Nd	12.44 m	785.28	1.23E-06	184Os	93.6 d	805.70	2.57E-09	108Pd	13.7012 h	822.90	7.42E-08
165Ho	26.795 h	785.78	9.31E-05	151Eu	13.522 y	805.70	4.85E-03	98Mo	2.7479 d	822.97	9.03E-07
103Rh	4.34 m	785.88	1.85E-06	104Ru	4.44 h	805.84	8.58E-07	76Ge	11.30 h	823.13	1.01E-06
103Rh	42.3 s	785.88	1.05E-04	148Nd	1.728 h	806.10	5.35E-07	150Nd	12.44 m	823.20	1.91E-07
130Ba	11.5 d	785.92	3.28E-09	142Ce	33.039 h	806.34	4.61E-07	148Nd	53.08 h	824.30	2.64E-09
71Ga	14.10 h	786.44	1.77E-03	46Ca	4.536 d	807.86	9.57E-08	136Ce	34.4 h	824.82	1.16E-07
148Nd	1.728 h	786.73	2.15E-07	150Nd	28.4 h	807.90	4.75E-06	130Te	25 m	825.00	2.87E-07
198Pt	30.8 m	786.80	7.33E-07	148Nd	53.08 h	808.11	3.50E-07	187Re	17.005 h	825.20	9.45E-05
150Nd	12.44 m	787.20	1.57E-07	110Pd	5.5 h	808.50	5.58E-09	76Ge	11.30 h	825.40	7.27E-08
142Ce	33.039 h	787.40	4.13E-08	110Pd	5.5 h	808.50	4.78E-08	151Eu	9.3116 h	825.50	1.54E-04
238U	23.45 m	788.19	1.28E-06	148Nd	1.728 h	808.84	4.03E-06	186W	23.72 h	825.95	2.86E-07
76Ge	11.30 h	788.92	1.64E-07	150Nd	12.44 m	809.23	1.91E-06	151Eu	9.3116 h	826.01	1.54E-04
150Nd	12.44 m	789.95	4.49E-07	148Nd	1.728 h	809.60	3.31E-07	59Co	5.2710 y	826.10	1.00E-04
150Nd	12.44 m	789.95	8.98E-07	75As	26.24 h	809.80	1.95E-05	186W	23.72 h	826.65	2.86E-07
100Mo	14.61 m	790.04	5.25E-07	142Ce	33.039 h	809.98	5.02E-07	81Br	35.282 h	827.83	7.28E-03
153Eu	8.601 y	790.20	2.24E-04	71Ga	14.10 h	810.20	1.11E-03	110Pd	5.5 h	828.30	4.47E-08
176Yb	1.911 h	790.30	3.89E-07	76Ge	11.30 h	810.35	3.83E-06	110Pd	5.5 h	828.30	9.41E-08
123Sb	60.2 d	790.71	2.15E-04	151Eu	13.522 y	810.45	1.23E-01	148Nd	1.728 h	828.60	1.82E-07
142Ce	33.039 h	791.07	2.13E-07	151Eu	9.3116 h	810.47	5.42E-03	150Nd	12.44 m	829.16	1.91E-06
238U	23.45 m	791.30	2.07E-06	187Re	17.005 h	810.49	4.94E-06	187Re	17.005 h	829.47	2.20E-03
198Pt	30.8 m	791.74	2.97E-05	193Ir	19.3 h	810.66	1.89E-05	181Ta	114.43 d	829.70	3.64E-05
150Nd	12.44 m	792.40	3.25E-07	100Mo	14.22 m	811.13	2.38E-07	96Zr	16.744 m	829.79	3.51E-08
150Nd	28.4 h	792.80	1.90E-08	150Nd	28.4 h	811.80	5.70E-07	154Sm	22.3 m	830.00	2.45E-07
121Sb	2.7238 d	793.30	9.31E-06	79Br	17.68 m	812.20	5.50E-05	153Eu	8.601 y	830.30	1.79E-04
148Nd	1.728 h	793.43	4.80E-07	150Nd	12.44 m	812.60	1.05E-06	148Nd	53.08 h	830.53	6.94E-07
238U	23.45 m	793.55	7.01E-07	148Nd	53.08 h	812.92	6.61E-09	115In	54.29 m	830.90	1.48E-03
76Ge	11.30 h	794.33	4.66E-07	238U	23.45 m	812.93	1.84E-05	130Ba	11.5 d	831.62	3.20E-07
186W	23.72 h	794.80	3.02E-05	148Nd	1.728 h	813.19	2.43E-07	238U	23.45 m	831.86	8.16E-07
151Eu	13.522 y	794.81	1.02E-02	76Ge	11.30 h	813.36	2.22E-07	160Gd	3.55 m	832.00	4.03E-08
150Nd	28.4 h	795.74	4.94E-07	86Kr	76.3 m	814.25	2.12E-08	148Nd	1.728 h	832.09	4.97E-07
130Ba	11.5 d	795.85	9.85E-10	100Mo	14.61 m	815.29	7.83E-07	65Cu	5.12 m	833.00	4.84E-05
133Cs	2.0652 y	795.86	4.07E-01	150Nd	12.44 m	815.40	3.59E-07	148Nd	53.08 h	833.40	7.07E-07
133Cs	2.0652 y	795.86	4.07E-01	109Ag	24.56 s	815.50	3.17E-04	71Ga	14.10 h	834.03	5.27E-02
148Nd	1.728 h	795.93	1.49E-07	153Eu	8.601 y	815.53	1.15E-02	160Gd	3.55 m	835.00	3.63E-08
151Eu	9.3116 h	796.10	7.39E-04	139La	1.6785 d	815.78	3.22E-02	160Gd	3.55 m	835.00	3.63E-08
170Er	7.516 h	796.55	1.06E-04	186W	23.72 h	816.56	1.21E-05	160Gd	3.55 m	835.00	3.63E-08
75As	26.24 h	797.00	5.13E-06	123Sb	60.2 d	816.80	2.12E-05	136Ce	34.4 h	835.38	2.71E-08
130Ba	11.5 d	797.45	5.06E-08	110Pd	5.5 h	817.00	7.97E-08	198Pt	30.8 m	835.50	5.70E-07
150Nd	12.44 m	797.53	3.98E-05	150Nd	28.4 h	817.70	7.59E-07	148Nd	53.08 h	835.55	2.31E-08
110Pd	5.5 h	797.80	8.13E-07	150Nd	28.4 h	817.70	1.42E-06	186W	23.72 h	835.55	1.08E-05
100Mo	14.61 m	798.00	2.89E-07	109Ag	24.56 s	818.02	7.49E-05	86Kr	76.3 m	836.37	9.95E-08
150Nd	12.44 m	798.20	1.23E-06	109Ag	249.78 d	818.02	2.70E-03	148Nd	1.728 h	837.40	6.62E-07
76Ge	11.30 h	798.80	8.09E-08	154Sm	22.3 m	818.10	2.45E-07	150Nd	12.44 m	837.50	8.98E-08

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
148Nd	1.728 h	839.24	5.85E-07	123Sb	60.2 d	856.90	6.91E-06	76Ge	11.30 h	875.19	1.32E-06
151Eu	13.522 y	839.36	6.21E-03	75As	26.24 h	857.00	1.03E-06	104Ru	4.44 h	875.85	4.73E-05
103Rh	4.34 m	839.90	1.40E-07	193Ir	19.3 h	857.12	5.37E-05	238U	23.45 m	876.14	4.71E-07
238U	23.45 m	840.30	1.07E-06	96Zr	72.1 m	857.46	6.64E-09	150Nd	12.44 m	876.39	3.25E-06
130Ba	11.5 d	840.90	2.63E-09	76Ge	11.30 h	857.62	5.18E-08	176Yb	1.911 h	876.80	9.85E-07
124Sn	9.52 m	840.90	9.02E-08	160Gd	3.55 m	857.93	8.46E-08	100Mo	14.61 m	877.39	1.35E-05
150Nd	12.44 m	841.07	1.35E-06	103Rh	4.34 m	858.00	1.54E-06	150Nd	28.4 h	877.70	8.54E-07
150Nd	12.44 m	841.07	6.40E-06	150Nd	12.44 m	858.30	8.87E-07	148Nd	1.728 h	877.90	4.41E-08
151Eu	13.522 y	841.57	6.32E-02	100Mo	14.61 m	859.13	5.17E-07	104Ru	4.44 h	878.20	8.94E-06
151Eu	9.3116 h	841.59	3.08E+00	148Nd	1.728 h	859.42	4.19E-07	71Ga	14.10 h	878.32	4.01E-05
130Te	25 m	841.99	2.08E-06	193Ir	19.3 h	859.45	1.29E-05	159Tb	73.2 d	879.38	9.26E-02
198Pt	30.8 m	842.40	4.89E-07	148Nd	53.08 h	859.46	2.31E-06	186W	23.72 h	879.45	1.74E-04
100Mo	14.22 m	842.73	9.26E-07	150Nd	28.4 h	859.80	7.02E-08	154Sm	22.3 m	880.00	7.34E-07
148Nd	1.728 h	842.85	1.10E-06	170Er	7.516 h	860.00	2.48E-07	107Ag	2.395 m	880.26	1.13E-05
76Ge	11.30 h	843.17	3.51E-07	154Sm	22.3 m	861.10	1.27E-06	142Ce	33.039 h	880.46	1.66E-05
26Mg	9.4580 m	843.76	2.61E-04	71Ga	14.10 h	861.11	5.03E-04	184Os	93.6 d	880.52	3.41E-04
238U	23.45 m	844.10	3.79E-05	98Mo	2.7479 d	861.20	4.78E-09	153Eu	8.601 y	880.60	1.81E-03
186W	23.72 h	844.70	3.02E-07	148Nd	1.728 h	861.54	3.75E-07	150Nd	12.44 m	881.14	5.16E-07
187Re	17.005 h	845.07	3.49E-05	108Pd	13.7012 h	862.50	5.20E-08	130Te	25 m	881.15	2.66E-07
151Eu	9.3116 h	845.40	1.94E-03	110Pd	5.5 h	862.80	1.20E-07	148Nd	53.08 h	881.98	5.09E-07
153Eu	8.601 y	845.42	1.31E-02	238U	23.45 m	863.57	1.72E-07	170Er	7.516 h	882.00	6.36E-06
86Kr	76.3 m	845.44	9.50E-07	75As	26.24 h	863.80	1.28E-05	110Pd	5.5 h	882.10	1.71E-07
104Ru	4.44 h	845.91	1.19E-05	186W	23.72 h	864.55	4.13E-04	110Pd	5.5 h	882.10	1.71E-07
238U	23.45 m	846.45	8.96E-06	148Nd	1.728 h	864.90	7.17E-08	75As	26.24 h	882.13	6.67E-05
55Mn	2.5788 h	846.76	5.02E-01	148Nd	1.728 h	865.00	2.81E-07	100Mo	14.61 m	883.39	2.71E-06
104Ru	4.44 h	846.90	5.36E-07	150Nd	12.44 m	865.90	3.37E-07	150Nd	28.4 h	883.68	3.80E-07
133Cs	2.0652 y	847.00	1.43E-06	150Nd	12.44 m	866.40	1.68E-07	76Ge	11.30 h	884.17	2.64E-08
133Cs	2.0652 y	847.00	1.43E-06	150Nd	12.44 m	866.40	6.28E-07	238U	23.45 m	884.50	2.87E-06
150Nd	12.44 m	847.12	7.41E-07	150Nd	28.4 h	867.10	2.47E-08	109Ag	249.78 d	884.68	2.73E-02
100Mo	14.61 m	847.24	3.12E-07	238U	23.45 m	867.30	3.68E-07	148Nd	1.728 h	886.59	1.16E-07
150Nd	12.44 m	848.00	2.24E-07	151Eu	13.522 y	867.38	1.65E+00	150Nd	12.44 m	886.80	3.48E-07
150Nd	28.4 h	848.65	2.37E-06	150Nd	12.44 m	867.60	5.61E-07	100Mo	14.61 m	887.00	7.83E-07
192Os	30.11 h	848.85	6.07E-07	75As	26.24 h	867.64	1.49E-04	150Nd	28.4 h	887.60	2.28E-08
238U	23.45 m	849.10	3.91E-07	139La	1.6785 d	867.84	7.58E-03	100Mo	14.61 m	888.70	9.88E-07
148Nd	1.728 h	849.93	4.64E-07	84Sr	64.82 d	868.06	1.20E-08	150Nd	12.44 m	889.10	3.82E-07
96Ru	2.9 d	850.10	4.55E-09	160Gd	3.55 m	869.30	3.91E-08	76Ge	11.30 h	889.23	2.36E-08
153Eu	8.601 y	850.64	5.40E-03	100Mo	14.61 m	869.70	1.20E-06	45Sc	83.7880 d	889.27	1.26E+00
150Nd	12.44 m	851.80	1.01E-06	170Er	7.516 h	869.70	9.08E-06	238U	23.45 m	889.56	5.40E-06
150Nd	12.44 m	851.80	1.44E-06	151Eu	9.3116 h	870.13	1.91E-02	193Ir	19.3 h	889.98	3.86E-04
104Ru	4.44 h	851.98	2.95E-06	150Nd	12.44 m	870.70	7.18E-07	124Sn	9.64 d	890.50	3.74E-10
130Te	25 m	852.21	4.60E-07	150Nd	12.44 m	870.70	8.98E-07	192Os	30.11 h	891.26	2.32E-07
64Ni	2.5172 h	852.70	5.24E-07	93Nb	6.263 m	871.00	1.29E-04	192Os	30.11 h	891.26	3.98E-07
75As	26.24 h	852.80	2.57E-06	100Mo	14.61 m	871.08	7.15E-06	87Rb	17.78 m	891.30	1.72E-07
100Mo	14.61 m	853.09	1.00E-06	148Nd	1.728 h	871.38	7.17E-07	198Pt	30.8 m	891.30	6.92E-07
150Nd	12.44 m	853.30	1.80E-06	170Er	7.516 h	871.50	3.30E-06	142Ce	33.039 h	891.47	1.31E-07
130Te	25 m	853.83	1.01E-06	68Zn	56.4 m	871.70	1.61E-08	181Ta	114.43 d	891.98	1.34E-04
150Nd	12.44 m	854.00	4.49E-07	159Tb	73.2 d	872.03	6.70E-04	150Nd	12.44 m	892.70	5.50E-07
148Nd	1.728 h	854.74	9.38E-08	150Nd	12.44 m	872.50	1.12E-07	153Eu	8.601 y	892.78	1.15E-02
96Zr	16.744 m	854.89	5.24E-08	150Nd	12.44 m	873.10	1.12E-07	148Nd	1.728 h	893.30	9.38E-08
158Gd	18.479 h	854.95	1.79E-07	153Eu	8.601 y	873.18	2.73E-01	124Sn	9.64 d	893.40	1.25E-08
96Ru	2.9 d	855.44	1.42E-07	148Nd	1.728 h	874.00	9.93E-08	110Pd	5.5 h	894.00	4.78E-08
130Te	25 m	856.08	1.36E-06	238U	23.45 m	874.35	9.08E-07	86Kr	76.3 m	894.02	5.84E-09
48Ca	8.718 m	856.10	1.38E-07	192Os	30.11 h	874.36	2.65E-06	150Nd	28.4 h	894.10	2.28E-08
150Nd	28.4 h	856.20	5.51E-08	150Nd	12.44 m	874.50	8.75E-07	71Ga	14.10 h	894.25	5.45E-03
114Cd	53.46 h	856.25	3.45E-08	184Os	93.6 d	874.81	4.15E-04	100Mo	14.61 m	894.40	2.36E-07

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
238U	23.45 m	895.31	4.25E-07	151Eu	9.3116 h	915.70	2.16E-03	154Sm	22.3 m	932.90	2.45E-06
100Mo	14.61 m	895.89	7.22E-07	136Ce	9.0 h	915.80	9.23E-08	238U	23.45 m	933.08	8.50E-06
76Ge	11.30 h	896.51	2.06E-07	110Pd	5.5 h	916.20	7.97E-08	148Nd	1.728 h	933.24	1.24E-06
151Eu	13.522 y	896.58	2.60E-02	238U	23.45 m	917.41	7.36E-07	100Mo	14.61 m	933.30	2.51E-06
148Nd	1.728 h	896.65	8.28E-08	136Ce	34.4 h	917.45	3.35E-09	186W	23.72 h	933.80	1.68E-05
150Nd	12.44 m	897.65	2.36E-06	153Eu	8.601 y	919.24	2.69E-04	150Nd	28.4 h	933.90	3.23E-08
87Rb	17.78 m	898.03	1.17E-04	150Nd	28.4 h	919.30	1.52E-08	150Nd	12.44 m	934.04	9.88E-07
96Ru	2.9 d	898.08	5.97E-10	151Eu	13.522 y	919.34	1.66E-01	100Mo	14.61 m	934.21	1.72E-05
153Eu	8.601 y	898.36	4.48E-05	139La	1.6785 d	919.53	3.71E-03	130Te	25 m	934.48	9.12E-06
130Te	25 m	898.54	1.44E-06	130Ba	11.5 d	919.60	1.25E-08	124Sn	9.64 d	934.63	8.93E-09
150Nd	28.4 h	898.58	2.09E-07	84Sr	67.63 m	919.80	8.37E-11	150Nd	12.44 m	935.10	1.12E-07
176Yb	1.911 h	899.20	3.06E-05	150Nd	12.44 m	919.93	7.74E-07	51V	3.743 m	935.52	1.23E-04
123Sb	60.2 d	899.60	5.00E-06	148Nd	1.728 h	920.30	8.28E-08	148Nd	1.728 h	935.90	9.93E-08
41K	12.360 h	899.70	2.70E-06	238U	23.45 m	920.87	6.78E-07	175Lu	3.664 h	936.25	4.27E-07
150Nd	12.44 m	900.20	1.23E-06	76Ge	11.30 h	921.04	1.20E-07	150Nd	12.44 m	936.80	3.70E-07
164Dy	2.334 h	900.41	2.38E-04	124Sn	9.64 d	921.43	3.53E-09	151Eu	13.522 y	937.05	1.05E-03
76Ge	11.30 h	900.97	2.04E-07	75As	26.24 h	921.60	1.03E-06	204Hg	5.14 m	937.20	6.30E-09
151Eu	13.522 y	901.18	3.26E-02	150Nd	28.4 h	922.10	1.14E-08	109Ag	249.78 d	937.49	1.27E-02
86Kr	76.3 m	901.50	3.40E-09	238U	23.45 m	922.70	2.76E-07	160Gd	3.55 m	937.53	3.71E-07
198Pt	30.8 m	902.00	2.85E-07	154Sm	22.3 m	923.00	2.45E-07	142Ce	33.039 h	937.82	4.20E-07
124Sn	9.64 d	903.50	5.40E-10	76Ge	11.30 h	923.14	1.16E-06	71Ga	14.10 h	938.40	4.22E-05
150Nd	28.4 h	903.50	2.66E-08	103Rh	4.34 m	923.62	3.92E-07	100Mo	14.22 m	938.65	3.40E-07
100Mo	14.61 m	903.55	9.12E-07	130Ba	11.5 d	923.87	1.01E-06	193Ir	19.3 h	938.69	4.54E-03
153Eu	8.601 y	904.06	1.99E-02	148Nd	1.728 h	923.87	2.15E-06	148Nd	1.728 h	938.79	1.27E-07
150Nd	12.44 m	904.70	7.86E-07	71Ga	14.10 h	924.22	7.85E-05	238U	23.45 m	939.00	9.19E-08
150Nd	12.44 m	904.70	8.98E-07	150Nd	12.44 m	924.40	1.12E-07	76Ge	11.30 h	939.35	4.80E-07
150Nd	12.44 m	905.30	3.37E-07	160Gd	3.55 m	924.55	7.66E-08	71Ga	14.10 h	939.36	1.43E-04
151Eu	13.522 y	906.01	6.21E-03	153Eu	8.601 y	924.63	1.39E-03	150Nd	28.4 h	939.80	3.23E-08
153Eu	8.601 y	906.10	2.64E-04	139La	1.6785 d	925.20	9.57E-03	114Cd	53.46 h	941.42	1.10E-09
36S	5.05 m	906.36	1.66E-09	193Ir	19.3 h	925.26	9.53E-05	103Rh	4.34 m	941.72	1.46E-06
136Ce	34.4 h	906.84	7.28E-10	76Ge	11.30 h	925.47	1.08E-07	176Yb	1.911 h	941.80	4.74E-05
76Ge	11.30 h	906.99	1.60E-06	76Ge	11.30 h	925.47	1.21E-06	148Nd	1.728 h	942.97	6.62E-08
142Ce	33.039 h	907.10	2.06E-08	150Nd	12.44 m	925.50	2.24E-07	150Nd	12.44 m	943.17	3.14E-06
75As	26.24 h	907.50	2.05E-06	150Nd	12.44 m	925.50	8.98E-07	100Mo	14.61 m	943.98	4.48E-07
104Ru	4.44 h	907.64	1.00E-05	150Nd	28.4 h	926.10	3.42E-08	110Pd	5.5 h	944.70	1.04E-07
148Nd	1.728 h	907.69	9.38E-08	151Eu	13.522 y	926.32	1.06E-01	150Nd	12.44 m	945.50	1.12E-07
170Er	7.516 h	907.70	1.05E-04	136Ce	9.0 h	926.35	6.07E-08	76Ge	11.30 h	945.73	5.18E-08
127I	24.99 m	907.84	1.02E-07	181Ta	114.43 d	927.99	1.47E-03	76Ge	11.30 h	945.73	5.18E-08
96Zr	72.1 m	909.55	5.92E-09	238U	23.45 m	928.18	1.38E-06	148Nd	1.728 h	945.80	4.58E-07
70Zn	2.45 m	910.30	1.28E-06	153Eu	8.601 y	928.40	1.01E-04	86Kr	76.3 m	946.69	1.67E-08
154Sm	22.3 m	911.00	2.45E-07	160Gd	3.55 m	928.42	5.24E-08	160Gd	3.55 m	947.75	2.14E-08
150Nd	28.4 h	911.25	2.16E-07	50Ti	5.76 m	928.63	2.79E-05	130Te	25 m	948.54	2.36E-05
148Nd	1.728 h	911.30	3.31E-07	100Mo	14.22 m	928.72	4.58E-07	150Nd	28.4 h	948.72	2.96E-06
160Gd	3.55 m	911.53	7.66E-08	76Ge	11.30 h	928.85	1.76E-06	150Nd	12.44 m	949.05	5.61E-07
100Mo	14.22 m	911.57	2.20E-07	148Nd	1.728 h	929.80	2.32E-07	148Nd	53.08 h	950.60	4.62E-09
124Sn	9.64 d	912.00	2.91E-10	148Nd	53.08 h	930.20	1.25E-08	150Nd	12.44 m	950.80	1.12E-07
150Nd	12.44 m	912.50	8.98E-07	150Nd	12.44 m	930.40	3.37E-07	139La	1.6785 d	950.99	7.22E-04
150Nd	12.44 m	912.50	8.98E-07	151Eu	13.522 y	930.58	2.83E-02	160Gd	3.55 m	951.10	2.22E-08
170Er	7.516 h	912.60	1.27E-05	184Os	93.6 d	931.06	3.19E-06	114Cd	53.46 h	951.19	4.40E-09
76Ge	11.30 h	913.81	6.16E-07	107Ag	2.395 m	931.07	1.81E-06	148Nd	1.728 h	951.30	5.52E-08
130Ba	11.5 d	914.07	6.50E-08	187Re	17.005 h	931.35	2.95E-03	130Te	25 m	951.39	3.45E-06
150Nd	12.44 m	914.28	7.74E-06	238U	23.45 m	931.61	1.13E-06	150Nd	12.44 m	951.85	4.38E-07
148Nd	1.728 h	915.35	4.41E-08	81Br	35.282 h	932.10	3.54E-06	148Nd	1.728 h	952.00	1.60E-07
148Nd	53.08 h	915.50	1.98E-10	115In	54.29 m	932.20	2.14E-03	81Br	35.282 h	952.02	1.11E-04
124Sn	9.64 d	915.55	1.77E-07	160Gd	3.55 m	932.85	1.17E-07	104Ru	4.44 h	952.78	2.86E-07

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
148Nd	53.08 h	952.80	1.85E-08	71Ga	14.10 h	970.55	6.08E-04	130Te	25 m	997.25	3.48E-05
150Nd	28.4 h	953.41	8.16E-07	96Zr	16.744 m	971.34	4.09E-08	154Sm	22.3 m	997.90	3.23E-06
150Nd	12.44 m	954.40	1.91E-07	148Nd	1.728 h	971.77	6.07E-08	130Te	25 m	999.26	2.87E-07
75As	26.24 h	954.60	2.05E-06	160Gd	3.55 m	972.30	9.67E-09	150Nd	12.44 m	999.50	2.13E-07
130Ba	11.5 d	954.61	4.60E-08	115In	54.29 m	972.40	1.28E-02	71Ga	14.10 h	999.86	4.40E-04
160Gd	3.55 m	955.35	3.18E-07	150Nd	12.44 m	973.23	1.45E-06	193Ir	19.3 h	1000.12	3.56E-04
175Lu	3.664 h	956.80	8.65E-08	151Eu	13.522 y	974.09	5.35E-03	186W	23.72 h	1000.82	5.38E-06
142Ce	33.039 h	956.90	2.06E-08	238U	23.45 m	974.54	9.31E-07	151Eu	13.522 y	1001.10	1.78E-03
109Ag	249.78 d	957.35	3.43E-06	110Pd	5.5 h	975.20	1.28E-07	110Pd	5.5 h	1001.20	7.97E-08
75As	26.24 h	957.60	2.05E-06	71Ga	14.10 h	975.50	1.84E-05	98Mo	2.7479 d	1001.34	2.94E-08
150Nd	12.44 m	958.18	4.49E-07	170Er	7.516 h	976.20	1.16E-07	181Ta	114.43 d	1001.70	4.89E-03
150Nd	12.44 m	958.18	4.94E-06	148Nd	1.728 h	976.20	1.38E-07	154Sm	22.3 m	1002.70	4.41E-06
151Eu	13.522 y	958.63	8.15E-03	123Sb	60.2 d	976.23	2.42E-05	142Ce	33.039 h	1002.85	1.21E-06
238U	23.45 m	959.22	1.61E-06	86Kr	76.3 m	976.49	7.32E-09	159Tb	73.2 d	1002.88	3.20E-03
76Ge	11.30 h	959.24	1.18E-07	164Dy	2.334 h	976.74	2.15E-05	150Nd	12.44 m	1003.24	5.27E-07
150Nd	28.4 h	959.70	5.32E-07	104Ru	4.44 h	977.90	3.58E-08	136Ce	34.4 h	1004.49	5.90E-09
181Ta	114.43 d	959.73	8.25E-04	148Nd	1.728 h	978.80	3.31E-07	153Eu	8.601 y	1004.72	4.00E-01
186W	23.72 h	960.17	1.61E-06	148Nd	1.728 h	979.01	1.66E-06	159Tb	73.2 d	1005.00	1.20E-04
150Nd	12.44 m	960.50	4.83E-07	187Re	17.005 h	979.25	5.58E-06	151Eu	13.522 y	1005.27	2.58E-01
98Mo	2.7479 d	960.75	6.49E-07	160Gd	3.55 m	979.37	4.43E-08	130Te	25 m	1005.76	1.44E-07
151Eu	9.3116 h	961.06	4.31E-02	150Nd	12.44 m	979.65	4.71E-07	107Ag	2.395 m	1007.22	4.76E-05
238U	23.45 m	961.09	4.14E-06	100Mo	14.61 m	980.52	1.14E-06	100Mo	14.61 m	1007.40	7.22E-07
176Yb	1.911 h	962.00	8.29E-07	75As	26.24 h	980.90	4.72E-05	76Ge	11.30 h	1007.47	2.27E-08
159Tb	73.2 d	962.32	3.02E-02	153Eu	8.601 y	981.30	1.88E-04	81Br	35.282 h	1007.59	3.87E-04
151Eu	13.522 y	963.39	5.20E-02	150Nd	12.44 m	983.50	2.13E-07	130Te	25 m	1007.96	8.33E-06
151Eu	9.3116 h	963.39	2.54E+00	187Re	17.005 h	984.10	1.82E-06	150Nd	12.44 m	1008.60	3.25E-07
148Nd	1.728 h	963.95	5.35E-07	153Eu	8.601 y	984.50	2.10E-04	108Pd	13.7012 h	1010.00	2.41E-08
151Eu	13.522 y	964.08	5.62E+00	104Ru	4.44 h	984.60	1.97E-07	150Nd	12.44 m	1010.80	1.68E-07
238U	23.45 m	964.30	2.07E-05	164Dy	2.334 h	984.92	6.04E-04	100Mo	14.61 m	1011.05	3.72E-06
148Nd	53.08 h	964.40	6.61E-11	150Nd	12.44 m	985.30	2.02E-07	150Nd	28.4 h	1012.20	3.04E-08
150Nd	28.4 h	964.40	3.99E-08	76Ge	11.30 h	985.73	1.66E-07	100Mo	14.61 m	1012.47	5.44E-05
150Nd	12.44 m	964.74	1.57E-06	98Mo	2.7479 d	986.44	9.57E-09	150Nd	12.44 m	1012.70	8.98E-08
70Zn	2.45 m	964.80	1.27E-07	148Nd	1.728 h	986.68	4.97E-08	153Eu	8.601 y	1012.80	6.72E-05
238U	23.45 m	965.58	5.06E-07	104Ru	4.44 h	987.00	1.34E-07	160Gd	3.55 m	1012.90	1.21E-07
170Er	7.516 h	966.10	4.36E-06	48Ca	8.718 m	987.30	8.08E-08	142Ce	33.039 h	1014.30	2.06E-08
159Tb	73.2 d	966.17	7.72E-02	100Mo	14.61 m	988.05	7.37E-07	26Mg	9.4580 m	1014.44	1.02E-04
108Pd	13.7012 h	966.20	3.57E-08	150Nd	12.44 m	989.71	4.38E-07	204Hg	5.14 m	1014.70	2.10E-09
76Ge	11.30 h	966.40	6.36E-08	151Eu	13.522 y	990.19	1.22E-02	160Gd	3.55 m	1015.10	4.84E-08
176Yb	1.911 h	967.30	1.43E-06	76Ge	52.9 s	990.30	5.22E-08	176Yb	1.911 h	1015.20	4.15E-07
148Nd	1.728 h	967.43	1.77E-07	238U	23.45 m	992.21	7.36E-07	148Nd	1.728 h	1016.10	7.73E-08
150Nd	12.44 m	967.58	1.68E-07	198Pt	30.8 m	992.30	3.66E-07	150Nd	12.44 m	1016.40	2.11E-05
150Nd	12.44 m	967.58	1.57E-06	139La	1.6785 d	992.64	1.36E-05	98Mo	2.7479 d	1017.00	4.78E-09
123Sb	60.2 d	968.20	5.47E-04	148Nd	1.728 h	992.83	3.15E-07	187Re	17.005 h	1017.10	7.89E-05
198Pt	30.8 m	968.32	2.97E-05	93Nb	6.263 m	993.00	1.94E-07	124Sn	9.52 m	1017.30	1.29E-07
186W	23.72 h	968.78	5.04E-05	148Nd	1.728 h	993.05	8.28E-08	124Sn	9.64 d	1017.40	1.37E-08
150Nd	28.4 h	968.90	1.23E-07	136Ce	34.4 h	993.81	5.20E-10	104Ru	4.44 h	1017.47	6.08E-06
130Ba	11.5 d	968.94	5.12E-08	170Er	7.516 h	994.00	9.91E-08	154Sm	22.3 m	1018.00	2.45E-07
150Nd	12.44 m	969.20	6.73E-08	150Nd	12.44 m	994.64	4.71E-07	96Zr	16.744 m	1018.10	5.47E-08
150Nd	12.44 m	969.20	5.50E-07	164Dy	2.334 h	995.09	5.21E-03	100Mo	14.61 m	1018.58	3.04E-06
104Ru	4.44 h	969.44	3.98E-05	151Eu	9.3116 h	995.87	1.48E-02	109Ag	249.78 d	1018.95	5.20E-06
127I	24.99 m	969.46	3.03E-04	23Na	14.9574 h	996.09	5.78E-07	100Mo	14.61 m	1020.00	1.61E-06
148Nd	53.08 h	969.60	6.61E-11	153Eu	8.601 y	996.25	2.35E-01	150Nd	12.44 m	1021.05	2.24E-07
96Ru	2.9 d	969.65	2.64E-09	110Pd	5.5 h	996.30	2.07E-07	150Nd	12.44 m	1021.05	5.61E-07
76Ge	11.30 h	970.10	4.55E-08	76Ge	11.30 h	996.55	1.77E-07	96Zr	16.744 m	1021.20	1.49E-07
151Eu	9.3116 h	970.35	1.27E-01	109Ag	249.78 d	997.24	4.72E-05	41K	12.360 h	1021.20	1.06E-06

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
148Nd	1.728 h	1021.80	5.52E-08	193Ir	19.3 h	1048.64	1.97E-04	110Pd	5.5 h	1076.00	3.19E-08
76Ge	11.30 h	1021.90	1.00E-08	160Gd	3.55 m	1048.75	7.66E-08	198Pt	30.8 m	1077.00	2.44E-07
110Pd	5.5 h	1022.50	1.12E-07	176Yb	1.911 h	1049.20	7.77E-07	85Rb	18.642 d	1077.00	7.53E-04
148Nd	1.728 h	1022.78	2.21E-06	153Eu	8.601 y	1049.40	3.85E-04	150Nd	12.44 m	1077.12	9.99E-07
153Eu	8.601 y	1023.00	1.48E-04	150Nd	12.44 m	1049.50	6.73E-07	148Nd	1.728 h	1078.76	1.35E-06
96Zr	72.1 m	1024.40	1.60E-07	100Mo	14.61 m	1049.80	1.45E-06	238U	23.45 m	1078.88	3.68E-07
99Tc	15.8 s	1024.50	1.60E-04	109Ag	249.78 d	1050.50	2.80E-06	150Nd	12.44 m	1079.50	1.12E-07
160Gd	3.55 m	1026.25	1.13E-07	71Ga	14.10 h	1050.69	3.81E-03	164Dy	2.334 h	1079.63	8.66E-03
96Zr	16.744 m	1026.70	4.10E-08	170Er	7.516 h	1051.00	6.60E-08	150Nd	12.44 m	1080.09	2.24E-07
148Nd	1.728 h	1027.18	1.88E-07	150Nd	12.44 m	1051.00	2.24E-07	150Nd	12.44 m	1080.09	1.80E-06
87Rb	17.78 m	1027.30	8.88E-08	148Nd	1.728 h	1051.90	9.38E-08	176Yb	1.911 h	1080.50	2.59E-04
176Yb	1.911 h	1028.30	2.88E-05	76Ge	11.30 h	1052.54	5.27E-08	76Ge	11.30 h	1080.82	4.06E-07
110Pd	5.5 h	1029.00	3.67E-08	138Ba	83.06 m	1053.00	1.38E-08	81Br	6.13 m	1081.29	1.21E-07
150Nd	12.44 m	1029.05	3.03E-07	160Gd	3.55 m	1053.70	1.81E-08	81Br	35.282 h	1081.29	2.00E-04
100Mo	14.61 m	1030.10	2.89E-07	123Sb	60.2 d	1053.80	1.42E-06	104Ru	4.44 h	1082.70	1.52E-07
150Nd	12.44 m	1030.50	1.12E-07	154Sm	22.3 m	1055.00	2.45E-07	150Nd	12.44 m	1082.70	2.24E-07
75As	26.24 h	1030.60	1.03E-06	164Dy	2.334 h	1055.76	2.96E-03	150Nd	12.44 m	1084.00	2.13E-07
142Ce	33.039 h	1031.22	3.23E-07	98Mo	2.7479 d	1056.20	7.04E-09	151Eu	13.522 y	1084.00	9.47E-02
148Nd	1.728 h	1031.77	9.38E-08	186W	23.72 h	1056.24	2.76E-07	76Ge	11.30 h	1085.19	1.02E-05
71Ga	14.10 h	1032.30	3.58E-05	160Gd	3.55 m	1057.06	1.45E-07	104Ru	4.44 h	1085.40	8.94E-08
150Nd	12.44 m	1032.40	2.24E-07	150Nd	12.44 m	1057.80	8.98E-08	109Ag	249.78 d	1085.45	2.65E-05
150Nd	12.44 m	1032.40	3.37E-07	124Sn	9.52 m	1059.00	2.58E-08	151Eu	13.522 y	1085.84	3.93E+00
153Eu	8.601 y	1033.40	2.66E-04	104Ru	4.44 h	1059.60	5.10E-07	123Sb	60.2 d	1086.32	1.10E-05
160Gd	3.55 m	1034.72	1.10E-06	142Ce	33.039 h	1060.22	5.85E-07	197Au	2.6944 d	1087.68	1.66E-03
150Nd	12.44 m	1035.40	1.12E-07	75As	26.24 h	1060.60	2.05E-06	124Sn	9.64 d	1087.70	5.11E-08
130Te	25 m	1035.50	2.87E-08	175Lu	3.664 h	1061.42	1.48E-06	110Pd	5.5 h	1088.00	1.59E-07
181Ta	114.43 d	1035.80	1.74E-05	76Ge	52.9 s	1061.60	1.18E-08	124Sn	9.64 d	1089.15	1.96E-07
150Nd	12.44 m	1036.16	1.50E-06	76Ge	11.30 h	1061.70	2.54E-07	151Eu	13.522 y	1089.74	6.71E-01
130Ba	11.5 d	1037.00	6.57E-10	86Kr	76.3 m	1063.10	3.47E-09	138Ba	83.06 m	1090.80	3.57E-07
71Ga	14.10 h	1037.20	1.16E-05	160Gd	3.55 m	1063.40	2.94E-08	164Dy	2.334 h	1091.91	9.53E-05
133Cs	2.0652 y	1038.61	4.72E-03	110Pd	5.5 h	1063.40	1.12E-07	150Nd	12.44 m	1092.00	2.58E-07
133Cs	2.0652 y	1038.61	4.72E-03	150Nd	12.44 m	1064.00	4.71E-07	124Sn	9.52 m	1093.00	5.15E-08
55Mn	2.5788 h	1038.83	2.03E-04	100Mo	14.61 m	1064.59	1.15E-06	160Gd	3.55 m	1093.52	2.58E-07
151Eu	9.3116 h	1039.20	1.76E-03	238U	23.45 m	1065.85	1.61E-07	104Ru	4.44 h	1094.00	6.26E-08
65Cu	5.12 m	1039.20	2.03E-03	100Mo	14.61 m	1065.90	6.54E-07	154Sm	22.3 m	1096.00	2.45E-07
150Nd	12.44 m	1040.40	5.50E-07	160Gd	3.55 m	1066.22	5.84E-08	187Re	17.005 h	1096.80	3.44E-06
238U	23.45 m	1040.41	2.53E-07	150Nd	12.44 m	1066.57	2.24E-07	170Er	7.516 h	1096.90	1.75E-07
148Nd	1.728 h	1040.70	1.16E-07	150Nd	12.44 m	1066.57	1.35E-06	238U	23.45 m	1096.99	6.21E-07
150Nd	12.44 m	1041.91	2.69E-06	130Te	25 m	1066.80	6.46E-08	115In	54.29 m	1097.30	1.59E+00
148Nd	1.728 h	1041.95	6.07E-07	124Sn	9.64 d	1067.10	4.15E-07	139La	1.6785 d	1097.58	3.13E-05
138Ba	83.06 m	1042.90	1.15E-09	176Yb	1.911 h	1068.30	3.89E-07	75As	26.24 h	1098.20	4.11E-06
81Br	35.282 h	1044.00	8.57E-03	159Tb	73.2 d	1069.09	3.07E-04	130Te	25 m	1098.25	1.80E-06
160Gd	3.55 m	1044.30	2.22E-08	150Nd	12.44 m	1070.03	5.39E-07	110Pd	5.5 h	1098.50	9.57E-08
150Nd	12.44 m	1044.30	4.49E-08	187Re	17.005 h	1071.40	3.60E-06	58Fe	44.495 d	1099.25	7.88E-05
181Ta	114.43 d	1044.41	5.60E-04	160Gd	3.55 m	1071.50	1.41E-08	81Br	35.282 h	1099.90	2.78E-06
150Nd	12.44 m	1045.00	6.73E-08	98Mo	2.7479 d	1072.20	8.20E-09	150Nd	12.44 m	1099.95	8.19E-07
139La	1.6785 d	1045.02	2.72E-05	153Eu	8.601 y	1072.20	7.84E-05	148Nd	1.728 h	1100.77	1.05E-06
123Sb	60.2 d	1045.13	5.33E-04	115In	54.29 m	1072.30	5.72E-04	76Ge	52.9 s	1100.80	1.58E-08
110Pd	5.5 h	1045.20	7.97E-08	198Pt	30.8 m	1072.70	6.11E-07	123Sb	93 s	1101.00	4.08E-06
164Dy	2.334 h	1045.60	4.77E-05	81Br	35.282 h	1072.90	2.27E-05	159Tb	73.2 d	1102.60	1.79E-03
130Ba	11.5 d	1046.40	1.27E-07	81Br	6.13 m	1072.99	5.62E-07	142Ce	33.039 h	1103.25	6.68E-06
142Ce	33.039 h	1046.78	1.93E-07	150Nd	12.44 m	1073.10	9.09E-07	198Pt	30.8 m	1104.00	7.33E-07
153Eu	8.601 y	1047.40	1.10E-03	150Nd	12.44 m	1074.00	1.12E-07	193Ir	19.3 h	1104.05	1.97E-04
130Ba	11.5 d	1047.60	1.86E-06	109Ag	24.56 s	1074.00	7.32E-06	76Ge	11.30 h	1104.23	5.73E-08
150Nd	12.44 m	1048.11	5.16E-06	148Nd	1.728 h	1075.95	4.41E-07	160Gd	3.55 m	1105.84	5.36E-08

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
150Nd	12.44 m	1106.00	8.53E-07	187Re	17.005 h	1132.31	4.46E-04	181Ta	114.43 d	1157.31	1.40E-03
107Ag	2.395 m	1106.01	4.91E-06	150Nd	12.44 m	1132.55	7.74E-07	181Ta	114.43 d	1158.08	9.50E-04
150Nd	12.44 m	1107.16	3.59E-06	76Ge	11.30 h	1134.77	4.64E-08	198Pt	30.8 m	1159.20	2.44E-07
170Er	7.516 h	1109.00	1.12E-06	160Gd	3.55 m	1135.20	1.53E-08	175Lu	3.664 h	1159.26	2.70E-06
151Eu	9.3116 h	1109.17	6.16E-05	148Nd	1.728 h	1135.94	4.41E-08	150Nd	12.44 m	1159.40	4.38E-07
151Eu	13.522 y	1109.17	7.22E-02	153Eu	8.601 y	1136.10	1.57E-04	154Sm	22.3 m	1159.70	3.43E-06
176Yb	1.911 h	1109.20	9.07E-06	150Nd	12.44 m	1136.58	1.53E-06	160Gd	3.55 m	1160.09	6.37E-08
70Zn	2.45 m	1109.30	2.63E-08	204Hg	5.14 m	1136.80	1.42E-08	153Eu	8.601 y	1160.36	9.76E-04
153Eu	8.601 y	1110.00	6.72E-05	124Sn	9.64 d	1137.50	1.25E-10	142Ce	33.039 h	1160.58	3.85E-08
96Zr	16.744 m	1110.44	1.37E-08	151Eu	9.3116 h	1137.50	2.77E-03	136Ce	9.0 h	1160.85	2.68E-09
150Nd	12.44 m	1111.00	1.57E-07	175Lu	3.664 h	1138.25	4.54E-07	100Mo	14.61 m	1160.98	1.68E-05
124Sn	9.64 d	1111.40	5.81E-10	150Nd	12.44 m	1139.00	4.71E-07	238U	23.45 m	1161.40	2.30E-07
151Eu	13.522 y	1112.08	5.20E+00	151Eu	13.522 y	1139.00	5.04E-04	71Ga	14.10 h	1163.12	4.11E-05
160Gd	3.55 m	1112.20	7.26E-08	110Pd	5.5 h	1139.60	4.78E-08	109Ag	249.78 d	1163.14	2.73E-05
181Ta	114.43 d	1113.40	1.06E-03	127I	24.99 m	1140.08	7.80E-06	110Pd	5.5 h	1163.30	2.71E-07
160Gd	3.55 m	1113.49	2.14E-07	164Dy	2.334 h	1140.36	1.27E-04	124Sn	9.64 d	1163.84	1.33E-09
176Yb	1.911 h	1114.60	1.55E-07	121Sb	2.7238 d	1140.67	4.33E-04	76Ge	11.30 h	1164.65	8.45E-08
76Ge	11.30 h	1114.80	1.74E-07	153Eu	8.601 y	1140.70	5.26E-03	109Ag	249.78 d	1164.94	1.58E-05
159Tb	73.2 d	1115.12	4.82E-03	204Hg	5.14 m	1141.10	3.05E-09	150Nd	12.44 m	1165.50	7.86E-08
150Nd	12.44 m	1115.40	4.60E-07	148Nd	1.728 h	1141.77	5.52E-08	133Cs	2.0652 y	1167.97	8.53E-03
64Ni	2.5172 h	1115.53	8.34E-05	148Nd	1.728 h	1141.77	5.52E-08	133Cs	2.0652 y	1167.97	8.53E-03
64Zn	244.01 d	1115.54	6.16E-03	110Pd	5.5 h	1142.40	9.57E-08	151Eu	9.3116 h	1168.16	1.29E-03
110Pd	5.5 h	1115.90	8.77E-07	160Gd	3.55 m	1143.15	8.06E-08	170Er	7.516 h	1168.40	3.04E-07
151Eu	9.3116 h	1116.00	2.16E-04	70Zn	2.45 m	1144.20	1.32E-08	81Br	6.13 m	1168.50	9.95E-08
96Zr	72.1 m	1117.02	1.26E-08	48Ca	8.718 m	1144.50	1.17E-07	36S	5.05 m	1169.07	1.05E-09
160Gd	3.55 m	1117.15	4.84E-08	160Gd	3.55 m	1145.50	3.63E-08	150Nd	12.44 m	1169.20	1.91E-06
109Ag	249.78 d	1117.46	1.80E-05	150Nd	12.44 m	1145.50	4.49E-07	100Mo	14.61 m	1169.23	9.20E-07
150Nd	12.44 m	1118.20	1.12E-07	150Nd	12.44 m	1145.90	5.61E-07	130Ba	11.5 d	1170.53	2.23E-09
150Nd	12.44 m	1118.20	4.49E-07	130Te	25 m	1146.96	5.17E-05	153Eu	8.601 y	1170.70	8.06E-05
153Eu	8.601 y	1118.52	2.42E-03	46Ca	4.536 d	1146.97	1.85E-10	151Eu	13.522 y	1170.93	1.42E-02
70Zn	2.45 m	1120.00	3.62E-07	150Nd	12.44 m	1147.80	1.12E-07	160Gd	3.55 m	1171.40	1.21E-08
176Yb	1.911 h	1120.00	2.62E-05	96Zr	16.744 m	1147.97	3.84E-07	148Nd	1.728 h	1171.97	8.28E-08
45Sc	83.7880 d	1120.54	1.26E+00	130Te	25 m	1148.51	1.15E-06	76Ge	52.9 s	1172.40	8.87E-09
160Gd	3.55 m	1120.92	1.69E-07	96Zr	72.1 m	1148.60	7.21E-09	150Nd	12.44 m	1172.53	8.98E-07
181Ta	114.43 d	1121.30	8.26E-02	130Te	25 m	1148.90	6.46E-07	104Ru	4.44 h	1172.58	1.43E-07
150Nd	12.44 m	1122.63	3.45E-05	187Re	17.005 h	1149.70	8.05E-05	148Nd	1.728 h	1172.76	7.78E-07
238U	23.45 m	1122.80	1.61E-07	160Gd	3.55 m	1149.94	4.84E-07	170Er	7.516 h	1172.90	1.32E-07
148Nd	1.728 h	1123.47	3.20E-07	148Nd	1.728 h	1150.08	4.91E-07	59Co	5.2710 y	1173.23	1.32E+00
150Nd	12.44 m	1123.50	2.24E-07	176Yb	1.911 h	1150.10	3.03E-05	124Sn	9.64 d	1173.30	7.77E-09
153Eu	8.601 y	1124.20	1.55E-04	187Re	17.005 h	1150.50	8.05E-05	81Br	6.13 m	1173.40	1.42E-09
76Ge	11.30 h	1124.99	1.98E-07	193Ir	19.3 h	1150.75	4.54E-03	81Br	35.282 h	1174.00	2.07E-05
148Nd	1.728 h	1125.32	6.29E-07	124Sn	9.52 m	1151.10	3.86E-08	154Sm	22.3 m	1174.50	3.92E-07
150Nd	12.44 m	1125.40	2.24E-07	124Sn	9.64 d	1151.23	4.90E-09	187Re	17.005 h	1174.57	9.66E-05
109Ag	249.78 d	1125.70	1.12E-05	150Nd	12.44 m	1151.80	3.93E-07	150Nd	12.44 m	1174.90	2.92E-07
109Ag	24.56 s	1125.70	1.27E-04	76Ge	11.30 h	1151.84	3.29E-07	193Ir	19.3 h	1175.38	4.62E-04
130Ba	11.5 d	1125.97	3.74E-09	153Eu	8.601 y	1153.10	2.46E-04	86Kr	76.3 m	1175.40	1.43E-07
160Gd	3.55 m	1126.30	2.58E-08	160Gd	3.55 m	1153.43	6.25E-08	148Nd	1.728 h	1175.75	7.17E-08
150Nd	12.44 m	1127.11	1.57E-06	76Ge	11.30 h	1155.37	3.27E-08	160Gd	3.55 m	1175.82	8.06E-08
153Eu	8.601 y	1128.55	7.10E-03	71Ga	14.10 h	1155.70	5.80E-06	150Nd	12.44 m	1177.70	2.58E-07
148Nd	1.728 h	1128.56	6.62E-08	130Te	25 m	1155.80	4.31E-08	159Tb	73.2 d	1177.96	4.58E-02
150Nd	12.44 m	1128.70	8.98E-08	170Er	7.516 h	1156.00	9.91E-08	81Br	35.282 h	1180.10	3.26E-05
75As	26.24 h	1129.87	1.44E-04	148Nd	1.728 h	1156.30	2.21E-08	81Br	6.13 m	1180.27	1.08E-06
75As	26.24 h	1130.00	2.05E-05	193Ir	19.3 h	1156.60	1.36E-05	148Nd	1.728 h	1180.50	8.44E-07
150Nd	12.44 m	1131.60	4.83E-07	150Nd	12.44 m	1156.90	5.61E-07	181Ta	114.43 d	1180.78	2.02E-04
154Sm	22.3 m	1132.00	4.89E-07	150Nd	12.44 m	1156.90	9.43E-07	150Nd	12.44 m	1180.89	1.12E-04

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
81Br	6.13 m	1180.95	7.11E-08	151Eu	13.522 y	1212.95	5.49E-01	176Yb	1.911 h	1241.80	1.55E-04
170Er	7.516 h	1182.00	4.95E-08	150Nd	12.44 m	1213.18	1.68E-07	160Gd	3.55 m	1242.00	1.53E-08
193Ir	19.3 h	1183.49	2.35E-03	150Nd	12.44 m	1213.18	7.18E-07	76Ge	11.30 h	1242.18	6.71E-07
100Mo	14.61 m	1184.19	7.60E-07	71Ga	14.10 h	1215.15	4.35E-04	153Eu	8.601 y	1246.12	1.93E-02
150Nd	12.44 m	1184.20	7.86E-07	104Ru	4.44 h	1215.38	1.34E-06	175Lu	3.664 h	1247.62	4.05E-08
130Te	25 m	1184.70	5.74E-08	176Yb	1.911 h	1215.40	1.27E-06	198Pt	30.8 m	1249.40	2.85E-07
150Nd	12.44 m	1186.00	2.24E-07	76Ge	11.30 h	1215.42	2.15E-07	100Mo	14.61 m	1249.40	9.65E-07
160Gd	3.55 m	1186.06	2.94E-08	138Ba	83.06 m	1215.50	1.38E-07	151Eu	13.522 y	1249.94	7.22E-02
124Sn	9.64 d	1186.15	3.74E-10	75As	26.24 h	1216.08	3.90E-03	109Ag	249.78 d	1251.04	9.58E-06
109Ag	24.56 s	1186.30	2.28E-05	153Eu	8.601 y	1216.80	7.39E-05	100Mo	14.61 m	1251.10	1.97E-05
193Ir	19.3 h	1186.40	6.36E-05	150Nd	12.44 m	1217.71	5.05E-07	159Tb	73.2 d	1251.27	3.26E-04
76Ge	11.30 h	1186.52	6.27E-08	87Rb	17.78 m	1217.97	4.26E-07	150Nd	12.44 m	1251.60	4.26E-07
164Dy	2.334 h	1186.56	4.37E-05	100Mo	14.61 m	1218.00	2.36E-07	104Ru	4.44 h	1251.89	3.67E-07
109Ag	249.78 d	1186.70	5.90E-07	130Ba	11.5 d	1218.30	6.57E-10	160Gd	3.55 m	1252.42	7.30E-08
150Nd	12.44 m	1186.70	6.28E-07	204Hg	5.14 m	1218.70	1.90E-08	115In	54.29 m	1254.10	1.12E-03
100Mo	14.61 m	1186.76	4.22E-06	193Ir	19.3 h	1218.78	4.39E-04	138Ba	83.06 m	1254.70	1.15E-06
121Sb	2.7238 d	1188.00	2.43E-06	138Ba	83.06 m	1219.10	1.73E-07	150Nd	12.44 m	1255.40	3.48E-07
153Eu	8.601 y	1188.34	2.08E-03	170Er	7.516 h	1220.50	4.62E-07	79Br	17.68 m	1256.20	1.01E-04
181Ta	114.43 d	1189.05	3.84E-02	186W	23.72 h	1220.80	2.12E-07	138Ba	83.06 m	1256.70	1.19E-07
150Nd	12.44 m	1189.24	2.24E-06	124Sn	9.64 d	1220.88	1.15E-08	121Sb	2.7238 d	1256.93	4.65E-04
148Nd	1.728 h	1190.28	4.97E-08	181Ta	114.43 d	1221.41	6.39E-02	181Ta	114.43 d	1257.42	3.52E-03
186W	23.72 h	1190.38	2.65E-07	104Ru	4.44 h	1222.00	3.49E-07	160Gd	3.55 m	1258.88	5.08E-08
150Nd	12.44 m	1191.10	3.25E-07	110Pd	5.5 h	1222.50	7.18E-08	124Sn	9.64 d	1259.35	1.33E-09
187Re	17.005 h	1191.84	7.19E-05	154Sm	22.3 m	1223.00	5.87E-06	148Nd	1.728 h	1259.62	8.83E-08
71Ga	14.10 h	1192.40	1.95E-05	181Ta	114.43 d	1223.80	5.37E-04	71Ga	14.10 h	1260.10	6.22E-04
160Gd	3.55 m	1192.42	4.15E-08	150Nd	12.44 m	1224.45	2.69E-07	100Mo	14.61 m	1260.21	6.16E-07
76Ge	11.30 h	1193.26	4.33E-06	160Gd	3.55 m	1224.93	2.26E-08	150Nd	12.44 m	1260.86	1.46E-07
238U	23.45 m	1196.90	2.18E-07	148Nd	1.728 h	1225.67	3.31E-08	160Gd	3.55 m	1261.11	7.86E-08
160Gd	3.55 m	1197.07	5.64E-08	175Lu	3.664 h	1226.61	2.57E-07	151Eu	13.522 y	1261.34	1.30E-02
154Sm	22.3 m	1197.70	1.47E-06	41K	12.360 h	1228.00	1.23E-07	154Sm	22.3 m	1262.40	5.87E-07
148Nd	1.728 h	1197.84	1.43E-07	75As	26.24 h	1228.52	1.39E-03	123Sb	60.2 d	1263.13	1.20E-05
130Te	25 m	1198.30	5.74E-08	160Gd	3.55 m	1228.72	4.39E-08	165Ho	26.795 h	1263.24	1.20E-04
124Sn	9.64 d	1198.70	6.64E-10	104Ru	4.44 h	1229.50	1.07E-07	76Ge	11.30 h	1263.86	1.43E-06
159Tb	73.2 d	1199.89	7.34E-03	186W	23.72 h	1230.10	1.61E-06	148Nd	1.728 h	1264.02	1.60E-07
100Mo	14.61 m	1199.94	7.50E-06	204Hg	5.14 m	1230.80	1.56E-09	150Nd	12.44 m	1264.30	1.68E-07
110Pd	5.5 h	1200.10	2.55E-07	71Ga	14.10 h	1230.86	8.01E-04	103Rh	4.34 m	1264.85	8.40E-08
150Nd	12.44 m	1201.03	2.24E-07	176Yb	1.911 h	1231.00	1.58E-05	130Te	25 m	1265.20	5.03E-08
150Nd	12.44 m	1201.03	1.43E-06	181Ta	114.43 d	1231.02	2.71E-02	30Si	157.3000 m	1266.15	1.72E-07
99Tc	15.8 s	1201.10	2.03E-04	153Eu	8.601 y	1232.10	1.79E-04	70Zn	2.45 m	1267.00	1.48E-09
76Ge	11.30 h	1201.43	1.37E-07	150Nd	12.44 m	1232.60	7.41E-07	150Nd	12.44 m	1268.50	4.60E-07
148Nd	1.728 h	1202.29	3.31E-08	150Nd	12.44 m	1234.10	1.12E-07	96Zr	72.1 m	1268.62	2.16E-08
175Lu	3.664 h	1204.70	1.81E-07	148Nd	1.728 h	1234.12	5.52E-07	150Nd	12.44 m	1269.60	5.72E-07
238U	23.45 m	1204.90	3.68E-07	76Ge	11.30 h	1234.55	4.73E-08	150Nd	12.44 m	1270.90	5.39E-07
151Eu	13.522 y	1206.11	5.24E-03	115In	54.29 m	1235.50	2.62E-03	170Er	7.516 h	1271.20	5.61E-08
150Nd	12.44 m	1206.60	4.49E-08	176Yb	1.911 h	1236.80	1.71E-06	150Nd	12.44 m	1271.30	2.24E-07
148Nd	1.728 h	1206.70	8.28E-08	103Rh	4.34 m	1237.05	8.96E-06	160Gd	3.55 m	1271.80	7.66E-09
151Eu	9.3116 h	1207.30	6.16E-04	103Rh	42.3 s	1237.05	1.92E-03	159Tb	73.2 d	1271.88	2.29E-02
154Sm	22.3 m	1207.80	3.92E-07	160Gd	3.55 m	1238.01	2.94E-08	181Ta	114.43 d	1273.73	1.54E-03
124Sn	9.64 d	1208.40	3.32E-10	103Rh	42.3 s	1238.02	2.91E-04	153Eu	8.601 y	1274.43	7.82E-01
130Ba	11.5 d	1208.43	2.43E-09	55Mn	2.5788 h	1238.27	4.93E-04	96Zr	16.744 m	1276.07	1.38E-07
104Ru	4.44 h	1209.00	1.16E-07	150Nd	12.44 m	1238.35	4.15E-07	71Ga	14.10 h	1276.76	8.62E-04
160Gd	3.55 m	1209.72	7.54E-08	104Ru	4.44 h	1238.80	3.58E-08	150Nd	12.44 m	1276.90	2.13E-07
187Re	17.005 h	1209.79	1.61E-05	148Nd	1.728 h	1239.50	3.86E-08	130Te	25 m	1277.44	1.23E-06
100Mo	14.61 m	1209.92	5.47E-07	153Eu	8.601 y	1241.43	2.98E-03	170Er	7.516 h	1279.90	4.13E-07
75As	26.24 h	1212.92	1.64E-03	70Zn	2.45 m	1241.50	5.26E-09	76Ge	11.30 h	1279.96	2.93E-07

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
148Nd	1.728 h	1280.28	2.21E-08	76Ge	11.30 h	1309.27	8.20E-07	150Nd	12.44 m	1346.55	1.12E-07
150Nd	12.44 m	1282.20	1.80E-07	138Ba	83.06 m	1310.60	7.02E-07	150Nd	12.44 m	1346.55	1.91E-07
110Pd	5.5 h	1282.50	8.29E-07	100Mo	14.61 m	1310.70	1.29E-07	151Eu	13.522 y	1348.10	6.79E-03
170Er	7.516 h	1284.40	3.96E-07	148Nd	1.728 h	1312.13	1.55E-07	124Sn	9.52 m	1349.00	2.58E-08
148Nd	1.728 h	1284.49	3.31E-08	159Tb	73.2 d	1312.14	8.81E-03	150Nd	12.44 m	1349.30	2.02E-07
159Tb	73.2 d	1285.58	4.72E-05	76Ge	11.30 h	1312.80	6.04E-07	124Sn	9.64 d	1349.42	2.53E-09
150Nd	12.44 m	1285.63	1.38E-06	150Nd	12.44 m	1314.20	7.86E-07	160Gd	3.55 m	1349.60	2.06E-07
100Mo	14.61 m	1286.26	4.48E-07	150Nd	12.44 m	1314.20	1.35E-06	150Nd	12.44 m	1350.40	8.98E-08
160Gd	3.55 m	1286.40	1.57E-08	100Mo	14.61 m	1314.28	8.89E-07	150Nd	12.44 m	1350.40	1.23E-07
150Nd	12.44 m	1287.20	8.98E-07	151Eu	9.3116 h	1314.67	2.01E-01	100Mo	14.61 m	1350.80	2.05E-07
48Ca	8.718 m	1288.40	7.44E-08	151Eu	13.522 y	1314.70	1.86E-03	130Te	25 m	1350.91	6.32E-07
181Ta	114.43 d	1289.16	3.19E-03	150Nd	12.44 m	1316.30	1.12E-06	150Nd	12.44 m	1351.70	2.24E-08
151Eu	9.3116 h	1290.00	1.94E-04	153Eu	8.601 y	1316.40	3.81E-04	76Ge	11.30 h	1354.31	2.45E-08
148Nd	1.728 h	1290.11	8.83E-08	81Br	6.13 m	1317.44	3.06E-07	160Gd	3.55 m	1354.90	1.73E-08
153Eu	8.601 y	1290.50	5.60E-04	81Br	35.282 h	1317.47	8.11E-03	123Sb	60.2 d	1355.18	3.02E-04
100Mo	14.61 m	1290.70	4.71E-07	76Ge	11.30 h	1319.66	5.07E-07	100Mo	14.61 m	1355.89	7.07E-06
124Sn	9.64 d	1291.30	2.08E-10	104Ru	4.44 h	1321.26	3.84E-06	150Nd	12.44 m	1357.00	5.61E-08
71Ga	14.10 h	1291.30	3.11E-05	187Re	17.005 h	1322.91	5.90E-05	104Ru	4.44 h	1357.20	4.47E-08
58Fe	44.495 d	1291.59	6.02E-05	76Ge	11.30 h	1323.32	2.73E-08	148Nd	1.728 h	1357.26	4.41E-08
153Eu	8.601 y	1292.00	2.84E-04	142Ce	33.039 h	1324.48	2.55E-08	160Gd	3.55 m	1357.80	1.81E-08
151Eu	13.522 y	1292.78	4.03E-02	123Sb	60.2 d	1325.51	4.59E-04	76Ge	11.30 h	1358.74	4.91E-08
100Mo	14.61 m	1293.29	8.82E-07	100Mo	14.61 m	1325.65	1.16E-06	150Nd	12.44 m	1359.94	1.11E-06
148Nd	1.728 h	1293.40	3.86E-07	99Tc	15.8 s	1325.70	5.00E-05	150Nd	12.44 m	1359.94	1.11E-06
115In	54.29 m	1293.54	2.38E+00	150Nd	12.44 m	1325.90	2.69E-07	96Zr	16.744 m	1361.00	9.57E-08
150Nd	12.44 m	1293.61	2.58E-06	76Ge	11.30 h	1326.05	6.45E-08	99Tc	15.8 s	1362.10	2.87E-04
40Ar	109.61 m	1293.64	3.44E-02	150Nd	12.44 m	1328.22	2.13E-06	96Zr	16.744 m	1362.68	1.50E-07
193Ir	19.3 h	1293.67	3.48E-04	150Nd	12.44 m	1329.50	4.38E-07	150Nd	12.44 m	1362.78	2.58E-06
130Te	25 m	1294.34	5.03E-06	187Re	17.005 h	1331.95	9.34E-06	151Eu	13.522 y	1363.77	9.93E-03
153Eu	8.601 y	1295.50	2.04E-04	150Nd	12.44 m	1332.30	1.12E-07	160Gd	3.55 m	1364.19	4.80E-08
76Ge	11.30 h	1295.71	1.01E-07	59Co	5.2710 y	1332.49	1.32E+00	133Cs	2.0652 y	1365.19	1.44E-02
76Ge	11.30 h	1295.71	1.51E-07	65Cu	5.12 m	1332.50	8.14E-06	133Cs	2.0652 y	1365.19	1.44E-02
150Nd	12.44 m	1296.40	4.71E-07	59Co	10.467 m	1332.50	1.74E-03	150Nd	12.44 m	1366.10	1.23E-07
46Ca	4.536 d	1297.09	1.10E-06	150Nd	12.44 m	1333.10	8.64E-07	87Rb	17.78 m	1366.26	8.53E-07
150Nd	12.44 m	1297.61	1.68E-06	51V	3.743 m	1333.62	1.19E-03	148Nd	1.728 h	1367.96	3.31E-07
160Gd	3.55 m	1297.90	2.94E-08	109Ag	249.78 d	1334.33	5.20E-05	123Sb	60.2 d	1368.16	7.59E-04
130Te	25 m	1297.98	5.03E-08	100Mo	14.61 m	1336.40	6.39E-07	76Ge	11.30 h	1368.40	5.64E-06
148Nd	1.728 h	1298.32	1.66E-08	176Yb	1.911 h	1337.20	5.70E-07	23Na	14.9574 h	1368.63	4.70E-02
151Eu	13.522 y	1299.14	6.33E-01	86Kr	76.3 m	1338.00	8.22E-08	124Sn	9.52 m	1368.80	1.29E-07
159Tb	73.2 d	1299.30	1.68E-05	150Nd	12.44 m	1338.40	2.47E-07	138Ba	83.06 m	1370.50	1.30E-07
113In	71.9 s	1299.83	1.27E-05	76Ge	11.30 h	1339.19	1.15E-07	150Nd	12.44 m	1371.40	2.47E-07
109Ag	249.78 d	1300.05	6.97E-06	100Mo	14.61 m	1339.42	7.45E-07	160Gd	3.55 m	1373.20	1.09E-08
154Sm	22.3 m	1301.20	2.06E-05	104Ru	4.44 h	1340.00	8.94E-09	181Ta	114.43 d	1373.84	5.17E-04
123Sb	60.2 d	1301.30	9.98E-06	76Ge	52.9 s	1340.00	3.35E-08	123Sb	60.2 d	1376.11	1.40E-04
187Re	17.005 h	1302.40	3.06E-05	142Ce	33.039 h	1340.10	4.95E-08	160Gd	3.55 m	1376.70	1.65E-08
139La	1.6785 d	1303.34	6.11E-05	204Hg	5.14 m	1340.30	1.02E-09	104Ru	4.44 h	1377.06	1.07E-06
100Mo	14.61 m	1304.00	1.13E-05	160Gd	3.55 m	1341.10	6.69E-08	100Mo	14.61 m	1377.95	9.96E-07
187Re	17.005 h	1304.86	1.50E-05	150Nd	12.44 m	1341.58	1.01E-06	150Nd	12.44 m	1379.12	4.04E-07
124Sn	9.52 m	1305.00	1.29E-08	103Rh	4.34 m	1341.67	1.40E-06	150Nd	12.44 m	1379.12	8.75E-07
148Nd	1.728 h	1307.60	2.21E-08	103Rh	42.3 s	1341.67	8.16E-05	165Ho	26.795 h	1379.45	7.24E-03
187Re	17.005 h	1308.03	3.49E-04	130Ba	11.5 d	1341.88	1.51E-09	160Gd	3.55 m	1379.74	6.65E-08
130Te	25 m	1308.10	7.18E-08	193Ir	19.3 h	1342.16	2.88E-04	100Mo	14.61 m	1380.40	4.79E-07
100Mo	14.61 m	1308.13	3.65E-07	181Ta	114.43 d	1342.72	5.95E-04	110Pd	5.5 h	1381.00	3.19E-08
193Ir	19.3 h	1308.15	9.84E-06	160Gd	3.55 m	1344.20	1.33E-08	148Nd	1.728 h	1381.42	4.41E-08
160Gd	3.55 m	1308.27	1.19E-07	63Cu	12.701 h	1345.77	4.86E-04	138Ba	83.06 m	1381.50	3.45E-09
150Nd	12.44 m	1308.50	2.02E-07	100Mo	14.61 m	1346.09	3.94E-06	142Ce	33.039 h	1382.00	6.19E-09



Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
87Rb	17.78 m	1382.45	6.16E-06	160Gd	3.55 m	1424.30	2.66E-08	76Ge	11.30 h	1465.75	1.00E-07
86Kr	76.3 m	1382.55	3.72E-08	150Nd	12.44 m	1425.29	3.82E-07	76Ge	11.30 h	1465.75	1.01E-07
100Mo	14.61 m	1382.71	4.71E-06	153Eu	8.601 y	1425.90	2.69E-05	75As	26.24 h	1467.00	1.03E-06
150Nd	12.44 m	1383.37	6.51E-07	100Mo	14.61 m	1426.90	1.44E-07	159Tb	73.2 d	1468.60	1.76E-06
70Zn	2.45 m	1383.80	5.76E-09	130Te	25 m	1427.14	1.10E-06	193Ir	19.3 h	1468.91	1.44E-03
109Ag	249.78 d	1384.29	9.10E-03	150Nd	12.44 m	1427.60	8.98E-08	150Nd	12.44 m	1470.80	1.35E-07
123Sb	60.2 d	1385.19	1.82E-05	100Mo	14.61 m	1429.21	2.96E-07	160Gd	3.55 m	1472.40	2.38E-08
76Ge	11.30 h	1385.78	1.27E-08	160Gd	3.55 m	1430.70	4.84E-09	150Nd	12.44 m	1473.60	1.68E-07
153Eu	8.601 y	1387.00	4.25E-04	193Ir	19.3 h	1431.35	1.66E-05	81Br	6.13 m	1474.88	5.43E-06
150Nd	12.44 m	1387.10	1.91E-07	100Mo	14.61 m	1431.68	5.32E-07	81Br	35.282 h	1474.88	5.03E-03
181Ta	114.43 d	1387.40	1.68E-04	100Mo	14.61 m	1431.68	1.51E-06	109Ag	24.56 s	1475.78	3.01E-05
100Mo	14.61 m	1387.60	3.04E-07	193Ir	19.3 h	1432.52	8.32E-06	109Ag	249.78 d	1475.78	1.49E-03
151Eu	9.3116 h	1389.00	1.63E-01	160Gd	3.55 m	1433.82	3.43E-08	150Nd	12.44 m	1475.78	5.61E-07
76Ge	52.9 s	1389.10	1.58E-08	204Hg	5.14 m	1433.90	1.35E-08	138Ba	83.06 m	1476.30	7.02E-08
86Kr	76.3 m	1389.87	1.54E-08	51V	3.743 m	1434.06	2.02E-01	76Ge	11.30 h	1476.52	4.08E-07
151Eu	13.522 y	1390.36	1.86E-03	150Nd	12.44 m	1434.40	1.57E-07	160Gd	3.55 m	1477.55	5.48E-08
71Ga	14.10 h	1390.42	4.69E-05	127I	24.99 m	1434.40	4.86E-07	160Gd	3.55 m	1477.55	5.48E-08
138Ba	83.06 m	1392.40	3.45E-09	100Mo	14.61 m	1435.10	3.42E-07	76Ge	11.30 h	1478.99	1.44E-07
150Nd	12.44 m	1393.00	8.98E-08	123Sb	60.2 d	1436.56	3.54E-04	76Ge	11.30 h	1478.99	2.15E-07
100Mo	14.61 m	1394.86	2.61E-06	150Nd	12.44 m	1439.00	1.01E-07	160Gd	3.55 m	1480.90	1.61E-08
150Nd	12.44 m	1395.00	8.30E-07	75As	26.24 h	1439.10	3.18E-04	58Fe	44.495 d	1481.70	8.40E-08
81Br	6.13 m	1395.10	1.42E-08	160Gd	3.55 m	1439.50	1.41E-08	76Ge	52.9 s	1481.73	1.02E-07
81Br	35.282 h	1395.10	3.54E-06	100Mo	14.61 m	1440.84	6.31E-07	64Ni	2.5172 h	1481.84	1.28E-04
170Er	7.516 h	1395.50	4.62E-07	107Ag	2.395 m	1441.15	1.02E-05	124Sn	9.52 m	1483.90	2.45E-07
76Ge	11.30 h	1397.30	1.27E-08	104Ru	4.44 h	1441.20	1.16E-07	150Nd	12.44 m	1485.45	3.37E-07
153Eu	8.601 y	1397.34	6.94E-05	193Ir	19.3 h	1441.78	1.14E-05	150Nd	12.44 m	1485.45	1.68E-06
160Gd	3.55 m	1400.13	7.05E-08	150Nd	12.44 m	1442.40	1.46E-07	100Mo	14.61 m	1485.90	4.18E-07
170Er	7.516 h	1400.50	3.30E-07	123Sb	60.2 d	1445.06	9.58E-05	193Ir	19.3 h	1487.05	1.29E-04
148Nd	1.728 h	1400.95	2.10E-07	150Nd	12.44 m	1445.40	4.15E-07	123Sb	60.2 d	1488.89	1.95E-04
124Sn	9.52 m	1404.00	9.27E-07	150Nd	12.44 m	1446.40	6.73E-08	160Gd	3.55 m	1489.42	5.64E-08
139La	1.6785 d	1404.66	8.42E-05	165Ho	26.795 h	1447.66	8.14E-05	153Eu	8.601 y	1489.60	6.49E-05
151Eu	9.3116 h	1406.50	1.54E-04	148Nd	1.728 h	1448.07	1.10E-08	150Nd	12.44 m	1490.93	7.86E-08
148Nd	1.728 h	1407.26	3.20E-07	104Ru	4.44 h	1448.30	9.84E-08	193Ir	19.3 h	1492.18	1.14E-05
151Eu	13.522 y	1408.01	8.09E+00	193Ir	19.3 h	1450.23	1.21E-05	153Eu	8.601 y	1494.05	1.56E-02
150Nd	12.44 m	1408.30	7.86E-08	100Mo	14.61 m	1451.10	2.66E-07	76Ge	11.30 h	1495.60	8.40E-07
153Eu	8.601 y	1408.50	5.15E-04	150Nd	12.44 m	1451.50	3.37E-08	148Nd	1.728 h	1495.80	3.31E-08
48Ca	8.718 m	1408.90	6.70E-07	76Ge	11.30 h	1452.59	2.04E-07	160Gd	3.55 m	1495.82	3.31E-08
76Ge	52.9 s	1409.94	2.35E-07	181Ta	114.43 d	1453.12	6.73E-05	160Gd	3.55 m	1495.82	3.31E-08
181Ta	114.43 d	1410.10	9.34E-05	75As	26.24 h	1453.62	1.23E-04	150Nd	12.44 m	1498.95	2.69E-07
151Eu	9.3116 h	1411.70	9.52E-03	148Nd	1.728 h	1454.29	2.76E-08	130Te	25 m	1500.62	1.20E-06
76Ge	52.9 s	1411.80	1.48E-08	76Ge	11.30 h	1454.75	6.27E-08	71Ga	14.10 h	1500.90	1.05E-05
100Mo	14.61 m	1414.20	2.07E-06	187Re	17.005 h	1457.54	9.98E-05	160Gd	3.55 m	1501.80	2.34E-08
150Nd	12.44 m	1414.90	7.86E-08	150Nd	12.44 m	1457.60	2.24E-08	150Nd	12.44 m	1501.80	2.69E-07
153Eu	8.601 y	1415.00	8.96E-04	151Eu	13.522 y	1457.64	1.93E-01	109Ag	249.78 d	1505.03	4.85E-03
110Pd	5.5 h	1418.00	4.78E-08	160Gd	3.55 m	1459.50	1.09E-08	100Mo	14.61 m	1507.00	2.05E-07
100Mo	14.61 m	1418.56	3.72E-06	165Ho	26.795 h	1460.02	1.55E-06	115In	54.29 m	1507.40	2.81E-01
153Eu	8.601 y	1418.60	2.46E-04	151Eu	9.3116 h	1460.64	3.39E-04	150Nd	12.44 m	1507.48	3.59E-07
153Eu	8.601 y	1419.00	4.48E-05	76Ge	52.9 s	1461.20	1.38E-08	153Eu	8.601 y	1510.00	1.07E-04
124Sn	9.64 d	1419.70	2.08E-08	86Kr	76.3 m	1461.30	6.42E-09	151Eu	9.3116 h	1510.83	1.39E-03
151Eu	9.3116 h	1420.00	1.23E-04	150Nd	12.44 m	1461.60	7.86E-08	193Ir	19.3 h	1511.98	1.82E-04
109Ag	249.78 d	1420.07	9.58E-06	187Re	17.005 h	1463.00	4.29E-06	193Ir	19.3 h	1512.15	9.99E-05
138Ba	83.06 m	1420.50	1.15E-05	193Ir	19.3 h	1463.50	4.46E-05	99Tc	15.8 s	1512.20	2.10E-03
160Gd	3.55 m	1421.37	3.59E-08	71Ga	14.10 h	1464.00	1.96E-03	100Mo	14.61 m	1514.10	7.37E-07
193Ir	19.3 h	1421.48	4.77E-06	150Nd	12.44 m	1465.41	5.39E-07	96Zr	72.1 m	1515.66	1.79E-08
109Ag	24.56 s	1421.50	1.87E-05	109Ag	249.78 d	1465.60	6.63E-07	100Mo	14.61 m	1517.80	9.05E-07

Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)	Target	Half-life	Eg(keV)	k0(BNL)
193Ir	19.3 h	1518.76	1.29E-05	148Nd	1.728 h	1568.43	1.10E-08	76Ge	11.30 h	1624.13	9.09E-09
71Ga	14.10 h	1519.40	1.74E-05	76Ge	11.30 h	1569.39	9.64E-08	103Rh	4.34 m	1625.76	8.40E-07
100Mo	14.61 m	1520.40	9.50E-07	104Ru	4.44 h	1571.00	1.79E-08	87Rb	17.78 m	1627.00	7.28E-08
153Eu	8.601 y	1522.00	1.34E-05	71Ga	14.10 h	1571.60	4.51E-04	150Nd	12.44 m	1627.97	2.36E-07
100Mo	14.61 m	1523.00	1.17E-06	150Nd	12.44 m	1571.84	8.30E-07	96Zr	72.1 m	1629.09	3.61E-09
41K	12.360 h	1524.60	9.50E-04	109Ag	249.78 d	1572.40	4.05E-07	100Mo	14.61 m	1629.40	2.05E-07
123Sb	60.2 d	1526.18	1.19E-04	76Ge	11.30 h	1573.69	1.11E-06	109Ag	249.78 d	1629.75	1.47E-06
100Mo	14.61 m	1526.60	4.10E-07	187Re	17.005 h	1574.57	3.38E-06	109Ag	24.56 s	1629.90	1.87E-05
103Rh	4.34 m	1526.60	1.71E-06	141Pr	19.12 h	1575.60	6.31E-03	71Ga	14.10 h	1630.00	1.79E-05
130Te	25 m	1527.73	5.96E-07	86Kr	76.3 m	1578.03	1.67E-08	70Zn	2.45 m	1631.60	6.25E-08
151Eu	13.522 y	1528.10	1.09E-01	138Ba	83.06 m	1578.20	2.30E-08	19F	11.07 s	1633.60	1.05E-03
76Ge	11.30 h	1528.20	7.82E-08	150Nd	12.44 m	1578.36	1.36E-06	124Sn	9.52 m	1634.00	2.58E-08
165Ho	26.795 h	1528.23	1.09E-06	123Sb	60.2 d	1579.78	1.11E-04	151Eu	13.522 y	1635.20	5.82E-05
100Mo	14.61 m	1530.30	6.08E-07	130Te	25 m	1579.94	8.62E-08	22Ne	37.24 s	1635.96	4.21E-05
187Re	17.005 h	1530.50	2.95E-06	165Ho	26.795 h	1581.85	1.44E-03	150Nd	12.44 m	1636.34	7.41E-07
51V	3.743 m	1530.67	2.34E-04	124Sn	9.52 m	1582.00	7.73E-09	76Ge	11.30 h	1639.50	1.09E-08
86Kr	76.3 m	1531.20	4.62E-08	100Mo	14.61 m	1583.10	3.42E-07	150Nd	12.44 m	1639.79	1.68E-07
153Eu	8.601 y	1531.40	1.34E-04	150Nd	12.44 m	1584.60	7.86E-08	76Ge	11.30 h	1642.60	3.55E-08
100Mo	14.61 m	1532.49	2.56E-05	150Nd	12.44 m	1585.80	3.37E-08	150Nd	12.44 m	1642.70	1.12E-07
75As	26.24 h	1532.80	2.77E-05	100Mo	14.61 m	1589.67	1.13E-06	37Cl	37.24 m	1642.71	1.97E-03
150Nd	12.44 m	1533.60	1.80E-07	160Gd	3.55 m	1590.50	9.67E-09	151Eu	13.522 y	1643.60	5.82E-04
160Gd	3.55 m	1533.87	5.56E-08	124Sn	9.64 d	1591.40	1.08E-09	100Mo	14.61 m	1646.40	3.27E-07
138Ba	83.06 m	1536.30	9.32E-08	150Nd	12.44 m	1592.50	1.80E-07	151Eu	13.522 y	1647.41	2.48E-03
153Eu	8.601 y	1537.81	1.19E-03	109Ag	249.78 d	1592.80	7.63E-06	150Nd	12.44 m	1647.43	3.03E-07
160Gd	3.55 m	1538.70	9.67E-09	100Mo	14.61 m	1594.80	9.12E-08	81Br	35.282 h	1650.37	2.27E-04
76Ge	11.30 h	1538.76	2.40E-07	138Ba	83.06 m	1595.30	9.09E-08	130Te	25 m	1650.97	1.29E-07
107Ag	2.395 m	1539.94	3.55E-06	193Ir	19.3 h	1595.77	1.21E-05	110Pd	5.5 h	1651.30	5.74E-07
150Nd	12.44 m	1540.00	3.37E-08	139La	1.6785 d	1596.20	1.30E-01	187Re	17.005 h	1652.49	1.88E-05
71Ga	14.10 h	1541.20	8.96E-06	153Eu	8.601 y	1596.48	3.99E+01	100Mo	14.61 m	1653.30	3.19E-07
160Gd	3.55 m	1544.80	4.68E-08	71Ga	14.10 h	1596.68	2.34E-03	150Nd	12.44 m	1658.90	6.73E-08
160Gd	3.55 m	1547.50	9.67E-09	150Nd	12.44 m	1598.04	7.74E-07	165Ho	26.795 h	1662.42	9.15E-04
130Te	25 m	1548.00	9.34E-09	100Mo	14.61 m	1599.26	7.30E-06	100Mo	14.61 m	1662.49	2.92E-06
100Mo	14.61 m	1548.68	6.23E-07	160Gd	3.55 m	1600.55	1.69E-07	150Nd	12.44 m	1664.60	6.73E-08
150Nd	12.44 m	1548.90	4.49E-07	138Ba	83.06 m	1601.40	5.75E-09	153Eu	8.601 y	1667.30	4.25E-05
187Re	17.005 h	1549.26	8.59E-06	193Ir	19.3 h	1601.90	1.51E-05	187Re	17.005 h	1669.97	5.58E-05
150Nd	12.44 m	1549.75	2.24E-06	76Ge	52.9 s	1604.65	4.75E-07	193Ir	19.3 h	1670.72	4.39E-05
70Zn	2.45 m	1553.00	4.28E-09	100Mo	14.61 m	1605.30	1.75E-07	150Nd	12.44 m	1673.20	1.46E-07
150Nd	12.44 m	1553.84	5.72E-07	151Eu	13.522 y	1605.61	3.14E-03	100Mo	14.61 m	1673.91	6.99E-06
153Eu	8.601 y	1554.00	2.46E-05	151Eu	13.522 y	1608.36	2.06E-03	153Eu	8.601 y	1674.00	3.81E-05
159Tb	73.2 d	1556.60	1.48E-06	100Mo	14.61 m	1609.20	3.72E-07	109Ag	24.56 s	1674.30	5.70E-05
76Ge	11.30 h	1557.03	2.09E-08	187Re	17.005 h	1610.40	5.26E-04	151Eu	13.522 y	1674.30	2.33E-03
124Sn	9.64 d	1557.30	1.74E-10	86Kr	76.3 m	1611.18	1.35E-08	193Ir	19.3 h	1675.24	6.51E-06
138Ba	83.06 m	1558.20	8.97E-09	75As	26.24 h	1611.20	8.73E-06	76Ge	52.9 s	1676.46	3.58E-07
160Gd	3.55 m	1558.33	3.99E-08	150Nd	12.44 m	1611.50	3.37E-08	40Ar	109.61 m	1677.00	1.79E-05
151Eu	9.3116 h	1558.73	1.69E-03	71Ga	14.10 h	1613.60	2.16E-05	160Gd	3.55 m	1677.30	1.13E-08
99Tc	15.8 s	1559.70	3.34E-05	100Mo	14.61 m	1615.00	2.36E-07	150Nd	12.44 m	1678.40	4.49E-08
150Nd	12.44 m	1559.80	6.73E-08	124Sn	9.52 m	1615.30	1.55E-07	87Rb	17.78 m	1679.60	3.73E-07
109Ag	249.78 d	1562.29	4.46E-04	150Nd	12.44 m	1617.94	2.81E-06	151Eu	9.3116 h	1680.52	1.14E-03
75As	26.24 h	1563.00	2.05E-06	150Nd	12.44 m	1618.60	2.24E-07	71Ga	14.10 h	1680.77	4.95E-04
193Ir	19.3 h	1565.15	1.59E-04	193Ir	19.3 h	1622.20	4.84E-04	138Ba	83.06 m	1683.10	1.13E-07
123Sb	60.2 d	1565.80	3.98E-06	123Sb	60.2 d	1622.40	1.19E-05	150Nd	12.44 m	1686.30	1.23E-07
150Nd	12.44 m	1566.41	7.63E-07	150Nd	12.44 m	1622.80	7.86E-08	87Rb	17.78 m	1687.30	8.88E-08
160Gd	3.55 m	1567.00	4.84E-09	160Gd	3.55 m	1622.95	8.54E-08	103Rh	42.3 s	1689.10	1.28E-05
75As	26.24 h	1567.90	8.73E-06	160Gd	3.55 m	1622.95	8.54E-08	123Sb	60.2 d	1690.98	1.38E-02
71Ga	14.10 h	1568.10	1.10E-04	64Ni	2.5172 h	1623.42	2.69E-06	110Pd	5.5 h	1691.10	1.02E-06

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
138Ba	83.06 m	1691.20	1.27E-08	104Ru	4.44 h	1765.40	3.58E-09	165Ho	26.795 h	1830.41	6.28E-05
160Gd	3.55 m	1691.70	1.17E-08	138Ba	83.06 m	1765.50	7.59E-09	76Ge	11.30 h	1831.23	4.64E-08
150Nd	12.44 m	1693.00	1.01E-07	150Nd	12.44 m	1767.45	7.86E-08	150Nd	12.44 m	1835.99	7.86E-08
104Ru	4.44 h	1698.10	1.43E-06	100Mo	14.61 m	1768.22	5.93E-07	87Rb	17.78 m	1836.00	1.78E-04
150Nd	12.44 m	1698.42	1.57E-07	160Gd	3.55 m	1768.60	8.87E-09	71Ga	14.10 h	1837.60	1.15E-04
109Ag	249.78 d	1698.80	6.27E-07	151Eu	13.522 y	1769.09	3.57E-03	153Eu	8.601 y	1838.00	1.79E-05
99Tc	15.8 s	1701.00	6.67E-06	81Br	6.13 m	1771.00	2.13E-08	100Mo	14.61 m	1840.24	5.85E-06
81Br	6.13 m	1703.19	7.82E-08	153Eu	8.601 y	1773.00	7.84E-06	86Kr	76.3 m	1842.61	1.80E-08
150Nd	12.44 m	1703.65	4.49E-08	110Pd	5.5 h	1775.20	3.67E-07	76Ge	11.30 h	1846.41	2.88E-07
150Nd	12.44 m	1703.65	2.24E-07	150Nd	12.44 m	1775.26	2.02E-06	99Tc	15.8 s	1847.70	1.93E-04
103Rh	4.34 m	1708.00	1.40E-08	109Ag	249.78 d	1775.41	2.40E-06	150Nd	12.44 m	1848.55	1.35E-07
150Nd	12.44 m	1708.50	5.61E-08	27Al	2.2414 m	1778.85	1.79E-02	123Sb	60.2 d	1851.51	1.88E-06
104Ru	4.44 h	1708.70	8.94E-09	81Br	35.282 h	1779.66	3.39E-05	96Zr	16.744 m	1851.61	4.51E-08
76Ge	11.30 h	1709.81	5.17E-07	87Rb	17.78 m	1779.87	1.79E-06	150Nd	12.44 m	1854.55	1.01E-07
71Ga	14.10 h	1710.90	2.14E-04	193Ir	19.3 h	1780.69	3.93E-05	150Nd	12.44 m	1855.80	7.86E-08
71Ga	14.10 h	1711.15	2.48E-05	51V	3.743 m	1781.10	1.01E-05	71Ga	14.10 h	1861.09	2.89E-03
150Nd	12.44 m	1711.20	2.02E-07	150Nd	12.44 m	1782.36	3.93E-07	150Nd	12.44 m	1863.37	3.70E-07
100Mo	14.61 m	1712.93	8.29E-07	109Ag	249.78 d	1783.46	3.72E-06	187Re	17.005 h	1864.91	2.68E-05
193Ir	19.3 h	1715.28	9.91E-06	109Ag	24.56 s	1783.46	3.74E-05	99Tc	15.8 s	1865.20	6.34E-05
153Eu	8.601 y	1716.90	1.34E-05	76Ge	11.30 h	1784.40	1.27E-08	187Re	17.005 h	1867.20	2.47E-06
150Nd	12.44 m	1716.92	9.20E-07	193Ir	19.3 h	1785.69	3.03E-05	75As	26.24 h	1870.00	6.16E-05
76Ge	11.30 h	1719.66	6.72E-07	187Re	17.005 h	1785.95	1.05E-04	81Br	35.282 h	1871.60	1.49E-05
123Sb	60.2 d	1720.30	2.76E-05	150Nd	12.44 m	1786.51	7.41E-07	150Nd	12.44 m	1873.10	1.23E-07
104Ru	4.44 h	1721.36	6.26E-07	75As	26.24 h	1787.66	3.34E-04	99Tc	15.8 s	1875.00	6.67E-06
110Pd	5.5 h	1721.90	2.71E-07	150Nd	12.44 m	1788.40	1.23E-07	100Mo	14.61 m	1876.30	1.06E-07
100Mo	14.61 m	1722.10	1.37E-07	76Ge	11.30 h	1792.63	8.09E-08	139La	1.6785 d	1877.33	5.57E-05
76Ge	11.30 h	1722.16	8.64E-08	103Rh	4.34 m	1793.20	1.40E-07	150Nd	12.44 m	1877.60	1.23E-07
193Ir	19.3 h	1724.54	5.75E-06	103Rh	42.3 s	1793.83	2.97E-05	71Ga	14.10 h	1877.90	1.28E-04
76Ge	11.30 h	1727.18	2.49E-07	150Nd	12.44 m	1793.84	3.37E-07	46Ca	4.536 d	1878.00	4.17E-10
150Nd	12.44 m	1727.20	7.86E-08	150Nd	12.44 m	1795.10	8.98E-08	76Ge	11.30 h	1878.60	6.18E-08
51V	3.743 m	1727.52	1.42E-05	138Ba	83.06 m	1797.40	2.30E-09	81Br	6.13 m	1879.50	1.14E-07
150Nd	12.44 m	1731.82	7.18E-07	150Nd	12.44 m	1797.40	3.37E-08	75As	26.24 h	1881.30	1.03E-06
165Ho	26.795 h	1732.20	3.57E-07	193Ir	19.3 h	1797.48	1.33E-04	76Ge	11.30 h	1881.47	2.18E-08
193Ir	19.3 h	1735.37	1.89E-05	87Rb	17.78 m	1798.35	5.15E-07	100Mo	14.61 m	1882.26	3.57E-07
124Sn	9.52 m	1735.60	3.86E-08	130Te	25 m	1800.68	3.59E-08	100Mo	14.61 m	1888.30	1.82E-07
76Ge	11.30 h	1735.66	1.55E-08	150Nd	12.44 m	1800.90	2.24E-08	124Sn	9.64 d	1889.88	3.16E-09
150Nd	12.44 m	1737.75	1.35E-07	187Re	17.005 h	1802.04	1.93E-04	130Te	25 m	1891.10	2.87E-08
160Gd	3.55 m	1738.80	1.33E-08	75As	26.24 h	1805.00	1.54E-06	150Nd	12.44 m	1892.15	1.43E-06
86Kr	76.3 m	1740.52	2.64E-07	193Ir	19.3 h	1805.75	2.42E-04	150Nd	12.44 m	1894.00	2.13E-07
150Nd	12.44 m	1742.40	1.12E-07	124Sn	9.64 d	1806.69	6.35E-09	138Ba	83.06 m	1894.70	9.20E-10
165Ho	26.795 h	1749.84	2.11E-04	150Nd	12.44 m	1807.00	5.27E-07	153Eu	8.601 y	1895.00	1.34E-05
96Zr	16.744 m	1750.24	1.60E-07	187Re	17.005 h	1807.60	4.62E-06	150Nd	12.44 m	1903.35	1.01E-07
121Sb	2.7238 d	1752.40	5.26E-06	104Ru	4.44 h	1809.00	4.47E-09	109Ag	249.78 d	1903.52	5.86E-06
150Nd	12.44 m	1752.99	3.82E-07	187Re	17.005 h	1809.54	2.15E-06	70Zn	2.45 m	1904.40	2.80E-08
115In	54.29 m	1753.80	6.93E-02	76Ge	11.30 h	1810.20	6.36E-08	110Pd	5.5 h	1905.00	6.38E-08
138Ba	83.06 m	1754.50	2.30E-09	55Mn	2.5788 h	1810.73	1.37E-01	150Nd	12.44 m	1908.60	2.81E-07
100Mo	14.61 m	1754.90	1.56E-06	150Nd	12.44 m	1810.90	6.73E-07	76Ge	11.30 h	1911.91	4.00E-08
151Eu	9.3116 h	1755.94	5.55E-04	193Ir	19.3 h	1812.59	3.41E-06	124Sn	9.52 m	1913.50	2.58E-08
150Nd	12.44 m	1756.82	4.15E-07	165Ho	26.795 h	1812.80	4.34E-07	123Sb	60.2 d	1918.82	1.58E-05
193Ir	19.3 h	1757.27	3.18E-06	150Nd	12.44 m	1818.74	4.83E-07	71Ga	14.10 h	1920.20	8.70E-05
123Sb	60.2 d	1757.90	1.39E-06	150Nd	12.44 m	1825.40	2.24E-08	138Ba	83.06 m	1920.60	3.45E-09
76Ge	11.30 h	1759.60	1.00E-08	76Ge	11.30 h	1829.03	1.64E-08	41K	12.360 h	1920.80	2.16E-06
100Mo	14.61 m	1759.72	4.20E-06	150Nd	12.44 m	1829.40	6.73E-08	100Mo	14.61 m	1921.40	2.20E-07
150Nd	12.44 m	1761.77	2.58E-07	193Ir	19.3 h	1829.59	1.44E-05	130Te	25 m	1923.60	3.59E-08
138Ba	83.06 m	1762.00	3.45E-09	104Ru	4.44 h	1829.60	1.43E-08	193Ir	19.3 h	1924.42	1.36E-05

Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)	Target	Half-life	E <sub>g</sub> (keV)	k0(BNL)
139La	1.6785 d	1924.50	1.49E-05	130Te	25 m	2072.80	6.46E-08	123Sb	60.2 d	2293.71	9.30E-06
150Nd	12.44 m	1925.97	3.03E-07	22Ne	37.24 s	2075.91	4.35E-06	70Zn	2.45 m	2294.80	4.28E-09
76Ge	11.30 h	1929.41	4.45E-08	76Ge	11.30 h	2077.17	3.93E-07	99Tc	15.8 s	2298.60	6.67E-05
150Nd	12.44 m	1932.50	1.91E-07	123Sb	60.2 d	2078.60	5.97E-06	150Nd	12.44 m	2303.80	1.12E-08
187Re	17.005 h	1936.90	1.13E-06	139La	1.6785 d	2083.22	4.89E-05	89Y	3.19 h	2318.96	4.47E-10
150Nd	12.44 m	1938.00	2.24E-08	100Mo	14.61 m	2088.79	3.30E-06	123Sb	60.2 d	2323.10	7.08E-07
110Pd	5.5 h	1939.00	7.97E-08	76Ge	11.30 h	2089.60	5.85E-07	76Ge	11.30 h	2328.04	3.73E-08
187Re	17.005 h	1940.91	9.93E-06	123Sb	60.2 d	2090.94	1.60E-03	51V	3.743 m	2337.70	3.03E-06
100Mo	14.61 m	1941.80	2.28E-07	150Nd	12.44 m	2093.50	2.24E-08	100Mo	14.61 m	2337.80	6.08E-08
100Mo	14.61 m	1946.54	3.34E-07	75As	26.24 h	2096.30	6.26E-04	76Ge	11.30 h	2341.63	7.95E-07
124Sn	9.52 m	1947.00	1.29E-08	123Sb	60.2 d	2099.10	1.33E-05	139La	1.6785 d	2347.85	1.15E-03
76Ge	11.30 h	1948.62	1.36E-08	150Nd	12.44 m	2106.96	5.61E-08	76Ge	11.30 h	2353.40	8.18E-09
150Nd	12.44 m	1950.30	4.49E-08	123Sb	60.2 d	2108.08	1.26E-05	48Ca	8.718 m	2371.70	5.10E-07
75As	26.24 h	1955.70	1.03E-05	71Ga	14.10 h	2109.50	5.75E-04	86Kr	76.3 m	2378.50	1.22E-08
81Br	6.13 m	1956.75	4.55E-07	75As	26.24 h	2110.80	3.75E-04	87Rb	17.78 m	2388.00	2.31E-07
81Br	35.282 h	1956.80	1.14E-05	87Rb	17.78 m	2111.50	9.77E-07	71Ga	14.10 h	2402.20	1.32E-05
187Re	17.005 h	1956.96	8.05E-05	115In	54.29 m	2112.10	4.38E-01	71Ga	14.10 h	2404.30	8.43E-06
110Pd	5.5 h	1970.80	4.94E-07	100Mo	14.61 m	2112.77	6.01E-07	100Mo	14.61 m	2404.70	8.13E-08
130Te	25 m	1973.10	2.15E-08	124Sn	9.52 m	2113.00	2.58E-09	86Kr	76.3 m	2408.50	2.95E-08
150Nd	12.44 m	1973.30	3.37E-08	55Mn	2.5788 h	2113.09	7.22E-02	41K	12.360 h	2424.30	1.05E-06
150Nd	12.44 m	1980.20	4.49E-08	150Nd	12.44 m	2113.40	1.12E-08	75As	26.24 h	2429.00	3.59E-05
124Sn	9.64 d	1982.50	1.37E-10	193Ir	19.3 h	2114.20	1.97E-05	123Sb	60.2 d	2454.40	4.26E-07
150Nd	12.44 m	1989.30	2.24E-08	100Mo	14.61 m	2114.34	2.40E-06	139La	1.6785 d	2464.03	1.32E-05
71Ga	14.10 h	1991.30	6.17E-05	87Rb	17.78 m	2118.87	3.50E-06	81Br	6.13 m	2479.60	6.61E-08
150Nd	12.44 m	1993.80	4.49E-08	150Nd	12.44 m	2118.94	5.61E-08	71Ga	14.10 h	2490.98	4.23E-03
150Nd	12.44 m	1998.10	3.37E-08	99Tc	15.8 s	2121.20	1.67E-05	59Co	5.2710 y	2505.69	2.64E-08
76Ge	11.30 h	2000.10	9.45E-07	150Nd	12.44 m	2124.70	1.12E-08	71Ga	14.10 h	2507.79	7.04E-03
124Sn	9.64 d	2002.13	8.22E-08	76Ge	11.30 h	2126.15	3.44E-07	71Ga	14.10 h	2515.00	1.38E-04
109Ag	24.56 s	2004.40	3.01E-05	75As	26.24 h	2127.00	1.54E-06	139La	1.6785 d	2521.39	4.64E-03
109Ag	249.78 d	2004.65	4.42E-07	99Tc	15.8 s	2127.70	6.67E-06	55Mn	2.5788 h	2523.06	5.18E-03
150Nd	12.44 m	2009.00	3.37E-08	100Mo	14.61 m	2131.40	1.44E-07	22Ne	37.24 s	2541.92	1.15E-06
150Nd	12.44 m	2010.92	8.98E-08	150Nd	12.44 m	2135.30	1.12E-08	139La	1.6785 d	2547.18	1.38E-04
86Kr	76.3 m	2011.88	3.73E-07	150Nd	12.44 m	2153.80	3.37E-08	86Kr	76.3 m	2554.80	1.19E-06
123Sb	60.2 d	2015.70	3.38E-06	59Co	5.2710 y	2158.57	1.58E-05	86Kr	76.3 m	2558.10	5.07E-07
150Nd	12.44 m	2018.85	3.93E-07	37Cl	37.24 m	2167.41	2.62E-03	87Rb	17.78 m	2577.79	1.49E-06
187Re	17.005 h	2022.53	8.16E-06	123Sb	60.2 d	2172.10	5.97E-07	71Ga	14.10 h	2583.40	7.91E-06
150Nd	12.44 m	2023.16	7.86E-08	123Sb	60.2 d	2182.61	1.23E-05	55Mn	2.5788 h	2598.44	1.02E-04
100Mo	14.61 m	2024.40	2.81E-07	150Nd	12.44 m	2186.20	2.24E-08	71Ga	14.10 h	2605.50	1.00E-05
100Mo	14.61 m	2028.10	4.18E-07	124Sn	9.64 d	2201.00	1.66E-09	71Ga	14.10 h	2621.06	7.27E-05
71Ga	14.10 h	2029.40	6.80E-05	71Ga	14.10 h	2201.66	1.43E-02	71Ga	14.10 h	2633.90	8.01E-06
100Mo	14.61 m	2032.10	2.75E-05	150Nd	12.44 m	2204.20	3.37E-08	86Kr	76.3 m	2652.50	3.02E-09
76Ge	11.30 h	2037.76	1.04E-07	193Ir	19.3 h	2207.00	9.84E-06	75As	26.24 h	2655.30	4.98E-05
150Nd	12.44 m	2038.10	2.24E-08	71Ga	14.10 h	2214.30	9.80E-05	81Br	6.13 m	2656.00	1.99E-08
124Sn	9.64 d	2038.30	1.25E-10	100Mo	14.61 m	2223.26	6.84E-07	55Mn	2.5788 h	2657.56	3.28E-03
100Mo	14.61 m	2038.40	8.67E-07	115In	54.29 m	2225.50	1.45E-03	99Tc	15.8 s	2659.50	6.67E-06
123Sb	60.2 d	2039.30	1.87E-05	124Sn	9.64 d	2227.00	8.31E-11	75As	26.24 h	2669.70	3.08E-07
130Te	25 m	2040.80	7.18E-08	150Nd	12.44 m	2227.40	1.12E-08	87Rb	17.78 m	2677.89	1.63E-05
100Mo	14.61 m	2041.24	8.97E-06	48Ca	8.718 m	2228.90	2.02E-07	123Sb	60.2 d	2682.00	4.81E-07
193Ir	19.3 h	2043.72	5.37E-05	150Nd	12.44 m	2234.60	1.12E-08	123Sb	60.2 d	2693.68	8.81E-07
100Mo	14.61 m	2047.31	3.72E-07	76Ge	11.30 h	2248.12	3.00E-08	87Rb	17.78 m	2734.09	9.06E-07
150Nd	12.44 m	2053.10	2.24E-08	150Nd	12.44 m	2254.90	8.98E-08	23Na	14.9574 h	2754.01	4.69E-02
138Ba	83.06 m	2060.10	2.19E-09	150Nd	12.44 m	2268.50	1.12E-08	71Ga	14.10 h	2785.10	1.64E-05
150Nd	12.44 m	2062.50	1.12E-08	124Sn	9.64 d	2275.75	7.81E-09	123Sb	60.2 d	2808.00	4.26E-07
110Pd	5.5 h	2064.10	2.23E-08	76Ge	11.30 h	2280.00	1.27E-08	86Kr	76.3 m	2811.40	4.17E-08
70Zn	2.45 m	2064.60	7.40E-09	123Sb	60.2 d	2283.30	2.33E-06	71Ga	14.10 h	2844.00	2.37E-04

<u>Target</u>	<u>Half-life</u>	<u>Eg(keV)</u>	<u>k0(BNL)</u>	<u>Target</u>	<u>Half-life</u>	<u>Eg(keV)</u>	<u>k0(BNL)</u>	<u>Target</u>	<u>Half-life</u>	<u>Eg(keV)</u>	<u>k0(BNL)</u>
23Na	14.9574 h	2869.50	1.13E-07	71Ga	14.10 h	3067.00	1.58E-06	87Rb	17.78 m	3524.00	5.33E-08
71Ga	14.10 h	2897.10	2.64E-06	48Ca	8.718 m	3084.40	9.79E-05	86Kr	76.3 m	3704.60	1.93E-09
139La	1.6785 d	2899.53	8.97E-05	36S	5.05 m	3086.00	1.91E-09	36S	5.05 m	3741.02	8.00E-09
71Ga	14.10 h	2939.60	5.80E-06	71Ga	14.10 h	3093.70	9.22E-06	51V	3.743 m	3772.00	2.02E-06
71Ga	14.10 h	2942.40	1.42E-05	36S	5.05 m	3103.36	2.89E-06	23Na	14.9574 h	3866.14	2.63E-05
71Ga	14.10 h	2950.00	2.11E-06	139La	1.6785 d	3118.49	3.48E-05	36S	5.05 m	4009.64	8.31E-10
55Mn	2.5788 h	2959.92	1.56E-03	51V	3.743 m	3161.70	1.82E-06	87Rb	17.78 m	4035.50	8.88E-08
86Kr	76.3 m	2961.20	8.99E-09	87Rb	17.78 m	3218.48	1.78E-06	48Ca	8.718 m	4071.90	7.44E-06
51V	3.743 m	2965.00	1.01E-06	86Kr	76.3 m	3308.50	5.78E-08	23Na	14.9574 h	4237.96	3.95E-07
71Ga	14.10 h	2981.14	3.00E-05	139La	1.6785 d	3319.52	5.33E-06	36S	5.05 m	4396.00	1.23E-10
22Ne	37.24 s	2981.85	1.61E-06	71Ga	14.10 h	3324.60	1.69E-06	48Ca	8.718 m	4738.20	2.23E-07
87Rb	17.78 m	3009.52	2.03E-06	19F	11.07 s	3332.53	8.58E-08	87Rb	17.78 m	4742.42	1.19E-06
87Rb	17.78 m	3017.19	3.55E-08	71Ga	14.10 h	3338.30	1.79E-06	87Rb	17.78 m	4852.88	7.46E-08
71Ga	14.10 h	3034.60	2.53E-06	55Mn	2.5788 h	3369.84	8.64E-04	19F	11.07 s	4964.85	5.23E-09
86Kr	76.3 m	3055.10	1.09E-08	87Rb	17.78 m	3486.47	1.08E-06				