EXFOR News (October 2018)

New experimental data available from Nuclear Reaction Data Centres

EXFOR [1] is a world-wide data library for experimental neutron, charged-particle and photon induced reaction data compiled by the International Network of the Nuclear Reaction Data Centres (NRDC)[a] co-ordinated by the IAEA Nuclear Data Section. Regularly updated web retrieval databases are available at IAEA-NDS as well as NNDC, NEADB, JAEA, JCPRG and CDFE.

This News lists newly created EXFOR entries as well as revised EXFOR entries where new data subentries are added. Entries from articles pubslished in past 10 years are flagged by asterisks (*). Please send an email to N.Otsuka (NRDC Coordinator n.otsuka@iaea.org) for inclusion in the EXFOR News distribution list as well as any question on EXFOR.

[1] N. Otuka, E. Dupont, V. Semkova et al., Nucl.Data.Sheets **120**(2014)272.

Quantity codes

ALF	α-value ($\sigma_{\rm capt}/\sigma_{\rm fis}$)	FY	Fission product yield
AMP	Length or amplitude	INT	Cross section integral over incident energy
CHG	Fragment charge	KE	Kinetic energy
CS	Cross section	KER	Kerma factor
CSN	Differential with respect to number of particles	MLT	Multiplicity
CSP	Partial cross section	NQ	Nuclear quantity
CST	Temperature dependent cross section	NU	Fission neutron multiplicity $\bar{\nu}$
D3A	Triple differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'$	NUD	Delayed fission neutron multiplicity $\bar{\nu}_d$
D3E	Triple differential $\mathrm{d}\Omega/\mathrm{d}E'_1/\mathrm{d}E'_2$	NUF	Fragment neutrons
D4A	Quadruple diff. $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'_1/\mathrm{d}E'_2$	POL	Polarization
DA	Differential $\mathrm{d}/\mathrm{d}\Omega$	POD	Differential polarization
DAA	Double differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2$	PY	Product yield (other than fission)
DAE	Double differential $\mathrm{d}\Omega/\mathrm{d}E'$	RI	Resonance integral
DAP	Partial differential $\mathrm{d}/\mathrm{d}\Omega$	RP	Resonance parameter
DAT	Temperature-dependent Legendre coefficient	RR	Reaction rate
DE	Differential $\mathrm{d}/\mathrm{d}E'$	SIF	Self indication
DEP	Energy spectrum for specific group	SPC	Gamma spectrum
DP	Diff. by linear momentum of outgoing part.	TSL	Thermal scattering
DT	Diff. by 4-momentum transfer squared	TT	Thick target yield
ETA	η-value $\bar{\nu}\sigma_{\rm fis}/(\sigma_{\rm capt}+\sigma_{\rm fis})$	TTD	Differential thick target yield, $\mathrm{d}/\mathrm{d}\Omega$
EVL	Evaluation	TTP	Partial thick target yield

Special codes in outgoing particle field

abs	Absorption	fus	Fusion	sct	Scattering	tot	Total
el	Elastic	inel	Inelastic	tcx	Total charge changing		
fis	Fission	non	Nonelastic	ths	Thermal scattering		

Special codes in incident energy field

Fast	Fast reactor spectrum average	Maxw	Maxwellian spectrum average
Fiss	Fission spectrum average	Spont	Spontaneous (for fission)

[a] NNDC (USA), NEADB (France), NDS (Austria), CJD (Russia), CNDC (China), ATOMKI (Hungary), NDPCI (India), JAEA (Japan), JCPRG (Japan), KAERI (Korea), CDFE (Russia), CNPD (Russia), UkrNDC (Ukraine)

1 Hydrogen 1

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	d,el	^{1}H	?	4ZZZDUB	1.3+09	1.4+09	Jour	YF,80,594	17	A.A.Terekhin+	F1347
*	^{8}He,d	^{7}He	?	2FR GAN	1.2+08	1.2+08	Jour	EPJ/A,51,91	15	V.Lapoux+	O2346
*	^{8}He,el	^{1}H	?	2FR GAN	1.2+08	1.2+08	Jour	EPJ/A,51,91	15	V.Lapoux+	O2346
*	^{11}Li,el	^{1}H	?	1CANTMF	6.6+07	6.6+07	Jour	PL/B,774,268	17	J.Tanaka+	C2286
*	^{11}Li,inel	^{1}H	DAP	1CANTMF	6.6+07	6.6+07	Jour	PL/B,774,268	17	J.Tanaka+	C2286
*	^{12}C,x	Many	?	2GERGSI	1.1+10	1.1+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{13}C,x	Many	?	2GERGSI	1.2+10	1.2+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{14}C,x	Many	?	2GERGSI	1.3+10	1.3+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{15}C,x	Many	?	2GERGSI	1.4+10	1.4+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{16}C,x	Many	?	2GERGSI	1.5+10	1.5+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{17}C,x	Many	?	2GERGSI	1.6+10	1.6+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{18}C,x	Many	?	2GERGSI	1.7+10	1.7+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{19}C,x	Many	?	2GERGSI	1.8+10	1.8+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{54}Ti,inel	^{1}H	?	1USAMSU	4.9+09	4.9+09	Jour	PR/C,96,064315	17	L.A.Riley+	C2291
*	^{56}Fe,x	Many	?	2GERGSI	5.6+10	5.6+10	Jour	PRL,100,022701	08	E.Legentil+	O2344
*	^{208}Pb,x	Many	PY	2GERGSI	7.7+10	1.4+11	Jour	PR/C,94,034605	16	J.L.Rodriguez-Sanchez+	O2362
*	^{208}Pb,x	Many	?	2GERGSI	7.7+10	1.4+11	Jour	PR/C,94,034605	16	J.L.Rodriguez-Sanchez+	O2362

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,2n	^{1}H	CS	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
	n,2n	^{1}H	DA	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
	n,2n	^{1}H	DAP	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
	n,el	^{2}H	CS	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
	n,el	^{2}H	DA	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
	n,x+n	inclusive	DAE	2FR SAC	1.4+07	1.4+07	Jour	JPR,24,801	63	G.Vedrenne+	21142
*	^{9}Li,p	^{10}Li	DAE	1CANTMF	1.0+08	1.0+08	Jour	PRL,118,012701	17	M.Cavallaro+	C2256

1 Hydrogen 3

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	^{44}Ar,p	^{46}Ar	?	2ZZZCER	9.5+07	9.5+07	Jour	PR/C,93,044335	16	K.Nowak+	O2356

1 Hydrogen

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	^{28}Si,tcc		CS	2JPNIRS	2.2+10	2.2+10	Jour	CHP,54,314	16	J.-S.Li+	E2541
*	^{28}Si,x	Many	CS	2JPNIRS	2.2+10	2.2+10	Jour	CHP,54,314	16	J.-S.Li+	E2541

2 Helium 4

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,el	^{4}He	DA	1USATNL	6.1+07	6.1+07	Jour	PR/C,96,055209	17	M.H.Sikora+	L0232
	p,el	^{4}He	DA	4RUSLIN	1.0+09	1.0+09	Jour	ZEP,26,110	77	G.D.Alkhazov+	F1337
*	^{20}Ne,el	^{4}He	?	2FR GAN	1.0+07	2.0+07	Jour	PR/C,94,054304	16	J.Walshe+	O2366
*	^{24}Ne,el	^{4}He	?	2FR GAN	1.3+07	2.4+07	Jour	PR/C,94,054304	16	J.Walshe+	O2366
*	^{34}S,0		?	1CANTMF			Jour	PR/C,97,035801	18	D.Connolly+	C2283
*	^{58}Ni,inel	^{4}He	?	2GERGSI	5.8+09	5.8+09	Jour	PL/B,763,16	16	J.C.Zamora+	O2368

3 Lithium 6

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{6}Li,n	^{11}C	CSP	2GERBOC	7.0+06	9.9+06	Jour	NP/A,467,149	87	G.Domogala+	O2361
	^{6}Li,n	^{11}C	DAP	2GERBOC	4.8+06	1.2+07	Jour	NP/A,467,149	87	G.Domogala+	O2361
	^{6}Li,p	^{11}B	CSP	2GERBOC	2.0+06	1.6+07	Jour	NP/A,467,149	87	G.Domogala+	O2361
	^{6}Li,p	^{11}B	DAP	2GERBOC	2.0+06	1.6+07	Jour	NP/A,467,149	87	G.Domogala+	O2361
*	^{13}C,t	^{16}O	DAP	1USAFSU	7.7+06	7.7+06	Jour	PR/C,97,014313	18	M.L.Avila+	C2289

3 Lithium 7

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,γ	^{8}Be	MLT	2JPNTIT	1.7+06	1.9+06	Jour	NST,54,253	17	T.Saito+	E2525
*	p,inel	^{7}Li	MLT	2JPNTIT	1.7+06	1.9+06	Jour	NST,54,253	17	T.Saito+	E2525
*	p,n	^{7}Be	CS	2ITYPAD	1.9+06	1.9+06	Jour	PR/C,94,034620	16	G.Martin-Hernandez+	O2363
*	p,n	^{7}Be	MLT	2ITYPAD	1.9+06	1.9+06	Jour	PR/C,94,034620	16	G.Martin-Hernandez+	O2363
*	p,x+γ	inclusive	PY	2JPNTIT	1.7+06	1.9+06	Jour	NST,54,253	17	T.Saito+	E2525
	d,inel	^{7}Li	DAP	4RUSMOS	4.5+06	4.5+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351
	d,x+n	inclusive	DA	1USARIC	8.7+05	8.7+05	Jour	PR,85,434	52	L.M.Baggett+	A1377
	^{11}B,^{5}He	^{13}C	DAP	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,^{6}He	^{12}C	DAP	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,^{7}He	^{11}C	DAP	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,^{8}He	^{10}C	DAP	4ZZZDUB	8.7+07	8.7+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{10}C	DAE	4ZZZDUB	8.7+07	8.7+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{11}C	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{12}C	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{13}C	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{14}O	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	NP/A,477,131	88	A.V.Belozyorov+	F1339
	^{11}B,x	^{15}O	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	NP/A,477,131	88	A.V.Belozyorov+	F1339

4 Beryllium 9

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{7}Li,x	^{12}N	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	NP/A,477,131	88	A.V.Belozyorov+	F1339

	^{9}Be,^{7}He	^{11}C	DAP	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{9}Be,^{8}He	^{10}C	DAP	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{9}Be,x	^{10}C	DAE	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{9}Be,x	^{11}C	DAE	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,^{7}He	^{13}N	DAP	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{11}B,x	^{13}N	DAE	4ZZZDUB	8.8+07	8.8+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{12}C,x	^{10}C	DAE	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{12}C,x	^{11}C	DAE	4ZZZDUB	1.1+08	1.1+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{14}C,^{7}He	^{16}O	DAP	4ZZZDUB	1.5+08	1.5+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{14}C,^{9}He	^{14}O	DAP	4ZZZDUB	1.6+08	1.6+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{14}C,x	^{14}O	DAE	4ZZZDUB	1.6+08	1.6+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
	^{14}C,x	^{16}O	DAE	4ZZZDUB	1.5+08	1.5+08	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
*	^{51}Sc,x	^{50}Sc	CS	2GERGSI	2.1+10	2.1+10	Jour	EPJ/A,48,191	12	S.Schwertel+	O2348
*	^{52}Sc,x	^{51}Sc	CS	2GERGSI	2.2+10	2.2+10	Jour	EPJ/A,48,191	12	S.Schwertel+	O2348
*	^{53}Sc,x	^{52}Sc	CS	2GERGSI	2.2+10	2.2+10	Jour	EPJ/A,48,191	12	S.Schwertel+	O2348
*	^{54}Sc,x	^{53}Sc	CS	2GERGSI	2.3+10	2.3+10	Jour	EPJ/A,48,191	12	S.Schwertel+	O2348
*	^{55}Sc,x	^{54}Sc	CS	2GERGSI	2.3+10	2.3+10	Jour	EPJ/A,48,191	12	S.Schwertel+	O2348

5 Boron 10

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	p,α	^{7}Be	CS	2ITYPAD	2.5+05	1.2+06	Jour	EPJ/A,52,136	16	A.Caciolli+	O2359

5 Boron 11

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,α	^{8}Be	CS	2ITYLNS	1.7+04	6.7+05	Jour	PR/C,69,055806	04	C.Spitaleri+	O1317
*	α,el	^{11}B	DA	2SF JYV	6.5+07	6.5+07	Jour	PAN,78,777	15	A.N.Danilov+	O2353
*	α,inel	^{11}B	DAP	2SF JYV	6.5+07	6.5+07	Jour	PAN,78,777	15	A.N.Danilov+	O2353

6 Carbon

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	^{12}C,x	Many	CS	2GERGSI	1.1+10	1.1+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{13}C,x	Many	CS	2GERGSI	1.2+10	1.2+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{14}C,x	Many	CS	2GERGSI	1.3+10	1.3+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{15}C,x	Many	CS	2GERGSI	1.4+10	1.4+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{16}C,x	Many	CS	2GERGSI	1.5+10	1.5+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{17}C,x	Many	CS	2GERGSI	1.6+10	1.6+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{18}C,x	Many	CS	2GERGSI	1.7+10	1.7+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{19}C,x	Many	CS	2GERGSI	1.8+10	1.8+10	Jour	PTEP,2016,043D05	16	I.Tanihata+	O2358
*	^{20}C,n+X	^{18}C	DE	2JPNIPC	5.6+09	5.6+09	Jour	PL/B,769,503	17	J.W.Hwang+	E2543
*	^{20}C,x	^{19}C	CSP	2JPNIPC	5.6+09	5.6+09	Jour	PL/B,769,503	17	J.W.Hwang+	E2543
*	^{20}C,x	^{19}C	DP	2JPNIPC	5.6+09	5.6+09	Jour	PL/B,769,503	17	J.W.Hwang+	E2543
*	^{28}Si,tcc		CS	2JPNIRS	2.2+10	2.2+10	Jour	CHP,54,314	16	J.-S.Li+	E2541
*	^{28}Si,x	Many	CS	2JPNIRS	2.2+10	2.2+10	Jour	CHP,54,314	16	J.-S.Li+	E2541

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	γ,n	^{11}C	INT	1CANSAS		2.5+07	Jour	PR,95,(2),464	54	L.Katz+	L0231
	γ,tot		CS	4RUSLEB	1.3+07	2.7+07	Jour	IZV,27,866	63	N.A.Burgov+	L0127
*	n,2n	^{11}C	CS	1USAOHO	2.0+07	2.6+07	Jour	PR/C,97,024613	18	M.Yuly+	14497
	n,el	^{12}C	KER	2SWDSWR	1.6+07	2.2+07	Jour	NP/A,496,505	89	N.Olsson+	22098
	n,inel	^{12}C	KER	2SWDSWR	1.6+07	2.2+07	Jour	NP/A,496,505	89	N.Olsson+	22098
	p,x+d	inclusive	DAE	4RUSITE	1.3+09	1.3+09	Jour	ZEP,9,667	69	V.S.Borisov+	F1341
*	p,x+d	inclusive	DAE	2GERGSI	2.5+09	2.5+09	Jour	PRL,117,202501	16	Y.K.Tanaka+	O2365
	p,x+d	inclusive	DAE	4RUSITE	7.3+08	7.3+08	Jour	ZEP,9,667	69	V.S.Borisov+	F1341
	t,p	^{14}C	CS	4ZZZDUB	3.7+05	1.2+06	Jour	ZET,43,1660	62	B.Kuhn+	F1342
	t,p	^{14}C	DA	4ZZZDUB	3.2+05	7.5+08	Jour	ZET,43,1660	62	B.Kuhn+	F1342
	α,n		RP	1USAFSU			Jour	PR,129,1723	63	J.W.Nelson+	C2316
	α,n	^{15}O	CS	1USAFSU	1.1+07	1.9+07	Jour	PR,129,1723	63	J.W.Nelson+	C2316
*	^{7}Be,tcc		CS	2GERGSI	5.4+09	5.4+09	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
*	^{9}Be,tcc		CS	2GERGSI	8.3+09	8.3+09	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
*	^{10}Be,tcc		CS	2GERGSI	9.5+09	9.5+09	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
*	^{11}Be,tcc		CS	2GERGSI	1.1+10	1.1+10	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
*	^{12}Be,tcc		CS	2GERGSI	1.1+10	1.1+10	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
*	^{14}Be,tcc		CS	2GERGSI	1.2+10	1.2+10	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350
	^{11}B,x	^{10}C	DAE	4ZZZDUB	8.7+07	8.7+07	Jour	IZV,52,100	88	A.V.Belozyorov+	F1340
*	^{12}C,α	^{20}Ne	CSP	1USAANL	3.0+06	4.9+06	Jour	PR/C,97,012801	18	C.L.Jiang+	C2288
*	^{12}C,fus		CS	1USAANL	2.7+06	4.9+06	Jour	PR/C,97,012801	18	C.L.Jiang+	C2288
*	^{12}C,p	^{23}Na	CSP	1USAANL	2.7+06	4.9+06	Jour	PR/C,97,012801	18	C.L.Jiang+	C2288
*	^{12}C,tcc		CS	2GERGSI	1.1+10	1.1+10	Jour	PTEP,2014,101D02	14	S.Terashima+	O2350

7 Nitrogen 14

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{14}N	DA	2FR LYO	3.0+06	3.5+06	Jour	NC/A,9,283	72	B.Chambon+	O2360
α,d	^{16}O	DAA	4RUSMOS	3.0+07	3.0+07	Jour	IZV,58,(11),188	94	A.V.Ignatenko+	F1343
α,d	^{16}O	DAP	4RUSMOS	1.5+07	3.0+07	Jour	IZV,58,(11),188	94	A.V.Ignatenko+	F1343
α,el	^{14}N	DA	4RUSMOS	3.0+07	3.0+07	Jour	IZV,58,(11),188	94	A.V.Ignatenko+	F1343

7 Nitrogen 15

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
t,p	^{17}N	?	1USABNL	2.7+06	2.7+06	Jour	PR,102,242	56	R.Sher+	C1752

8 Oxygen 16

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,n	^{15}O	INT	1CANSAS		2.5+07	Jour	PR,95,(2),464	54	L.Katz+	L0231

γ,tot		INT	4RUSLEB	1.9+07	2.7+07	Jour	IZV,27,866	63	N.A.Burgov+	L0127
t,n	^{18}F	CS	1USABNL	2.7+06	2.7+06	Jour	PR,102,242	56	R.Sher+	C1752

8 Oxygen 18

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,α	^{17}N	?	1USABNL	2.7+06	2.7+06	Jour	PR,102,242	56	R.Sher+	C1752
	t,n	^{20}F	?	1USABNL	2.7+06	2.7+06	Jour	PR,102,242	56	R.Sher+	C1752

9 Fluorine 19

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,α	^{16}O	CSP	4RUSMOS	5.1+06	6.5+06	Jour	ZET,39,923	60	I.B.Teplov+	F1338
	p,α	^{16}O	DAP	4RUSMOS	5.1+06	6.5+06	Jour	ZET,39,923	60	I.B.Teplov+	F1338
	d,inel	^{19}F	DAP	4RUSMOS	4.5+06	4.5+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351

10 Neon 19

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,0		RP	1CANTMF	9.2+06	9.2+06	Jour	PRL,119,242701	17	R.Wilkinson+	C2292
	p,γ		RP	2BLGLVN	4.5+05	4.5+05	Jour	PR/C,69,022801	04	M.Couder+	O2340

11 Sodium 23

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{15}O	CS	1USABRK	2.5+07	3.1+07	Jour	PR,102,453	56	B.L.Cohen	C1748
	p,x	^{18}F	CS	1USABRK	2.5+07	3.1+07	Jour	PR,102,453	56	B.L.Cohen	C1748
	d,inel	^{23}Na	DAP	4RUSMOS	4.4+06	4.4+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351

12 Magnesium 24

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,inel	^{24}Mg	CSP	4RUSMOS	4.5+06	4.5+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351
	d,inel	^{24}Mg	DAP	4RUSMOS	4.5+06	4.5+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351

13 Aluminium 27

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

	p,x	^{15}O	CS	1USABRK	3.0+07	3.0+07	Jour	PR,102,453	56	B.L.Cohen	C1748
	d,inel	^{27}Al	DAP	4RUSMOS	4.5+06	4.5+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351
	d,p	^{28}Al	DA	4RUSMOS	4.0+06	4.0+06	Conf	57MOSCOW,,234	57	E.A.Romanovskiy+	F1351
*	d,x	^{24}Na	CS	4ZZZDUB	7.0+09	7.0+09	Jour	EPJ/CS,146,09038	17	R.Vespalec+	F1349
	α,3p	^{28}Mg	CS	1USABRK	8.0+06	1.1+07	Jour	PR,109,504	58	D.R.Nethaway+	C2304
	^{14}N,x	^{13}N	CS	4RUSKUR	2.7+07	9.7+07	Jour	ZET,33,595	57	V.V.Volkov+	F1355

14 Silicon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,el	^{nat}Si	DA	2GRCATH	9.9+05	2.2+06	Jour	NIM/B,XX,XX	18	E.Ntemoua+	O2351
	α,non		CS	2NEDKVI	2.7+07	9.2+07	Jour	PR/C,40,2473	89	R.E.Warner+	O2369

14 Silicon 28

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,el	^{28}Si	CS	4RUSMOS	2.5+07	2.5+07	Jour	YF,55,597	92	A.V.Ignatenko+	F1344
	α,el	^{28}Si	DA	4RUSMOS	2.5+07	2.5+07	Jour	YF,55,597	92	A.V.Ignatenko+	F1344
	α,inel	^{28}Si	CSP	4RUSMOS	2.5+07	2.5+07	Jour	YF,55,597	92	A.V.Ignatenko+	F1344
	α,inel	^{28}Si	DAP	4RUSMOS	2.5+07	2.5+07	Jour	YF,55,597	92	A.V.Ignatenko+	F1344
	α,inel	^{28}Si	?	4RUSMOS	2.5+07	2.5+07	Jour	YF,55,597	92	A.V.Ignatenko+	F1344
	α,n	^{31}S	PY	1USAFSU	8.4+06	1.3+07	Jour	PR,129,1723	63	J.W.Nelson+	C2316
*	^{7}Be,x+α	inclusive	CS	2ITYPAD	1.3+07	2.2+07	Jour	PR/C,94,044623	16	O.Sgouros+	O2364
*	^{7}Be,x+α	inclusive	DA	2ITYPAD	1.3+07	2.2+07	Jour	PR/C,94,044623	16	O.Sgouros+	O2364
*	^{7}Be,x+^{3}He	inclusive	DA	2ITYPAD	1.3+07	2.2+07	Jour	PR/C,94,044623	16	O.Sgouros+	O2364

14 Silicon 29

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,2p	^{28}Al	CS	1USABRK	1.5+07	3.1+07	Jour	PR,102,453	56	B.L.Cohen	C1748
	p,x	^{18}F	CS	1USABRK	3.0+07	3.0+07	Jour	PR,102,453	56	B.L.Cohen	C1748

16 Sulphur 32

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,n	^{35}Ar	PY	1USAFSU	9.5+06	1.3+07	Jour	PR,129,1723	63	J.W.Nelson+	C2316

16 Sulphur 34

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,el	^{34}S	DA	2SF ABA	1.3+07	1.5+07	Jour	ZP/A,347,291	94	A.E.Antropov+	O2354

	α,n	^{37}Ar	PY	1USAFSU	4.8+06	1.1+07	Jour	PR,129,1723	63	J.W.Nelson+	C2316

16 Sulphur 36

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,el	^{36}S	DA	2SF ABA	1.3+07	1.5+07	Jour	ZP/A,347,291	94	A.E.Antropov+	O2354

17 Chlorine 37

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,3p	^{38}S	CS	1USABRK	7.2+06	8.0+06	Jour	PR,109,504	58	D.R.Nethaway+	C2304

19 Potassium 38

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,0		RP	1CANTMF			Jour	PR/C,97,025802	18	G.Christian+	C2284

19 Potassium 39

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{28}Si,fus		CS	1USAMSU	3.7+07	4.3+07	Jour	PR/C,97,031601	18	J.Vadas+	C2290

19 Potassium 47

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{28}Si,fus		CS	1USAMSU	3.6+07	4.3+07	Jour	PR/C,97,031601	18	J.Vadas+	C2290

23 Vanadium 51

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{12}C,2n	^{61}Cu	CS	4RUSOIE			Jour	ZET,36,621	59	Yu.B.Gerlit+	F1352
	^{13}C,3n	^{61}Cu	CS	4RUSOIE			Jour	ZET,36,621	59	Yu.B.Gerlit+	F1352
	^{14}N,2n	^{63}Zn	CS	4RUSOIE			Jour	ZET,36,621	59	Yu.B.Gerlit+	F1352
	^{14}N,3n	^{62}Zn	CS	4RUSOIE			Jour	ZET,36,621	59	Yu.B.Gerlit+	F1352
	^{14}N,4n	^{61}Zn	?	4RUSOIE			Jour	ZET,36,621	59	Yu.B.Gerlit+	F1352
	^{16}O,2n	^{65}Ga	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{16}O,3n	^{64}Ga	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{16}O,x	^{62}Cu	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354

	^{16}O,x	^{64}Cu	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{16}O,x	^{62}Zn	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{16}O,x	^{63}Zn	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354

24 Chromium 50

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,α	^{48}V	CS	1USAMIT	1.0+06	1.4+07	Jour	PR,104,703	56	P.Kafalas+	C2297
	d,x	^{51}Cr	CS	1USAMIT	9.7+05	1.4+07	Jour	PR,104,703	56	P.Kafalas+	C2297

24 Chromium 52

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,2n	^{52}Mn	CS	1USAMIT	6.6+06	1.4+07	Jour	PR,104,703	56	P.Kafalas+	C2297

24 Chromium 53

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,n	^{54}Mn	CS	1USAMIT	1.0+06	1.5+07	Jour	PR,104,703	56	P.Kafalas+	C2297

25 Manganese 55

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{6}Li,x+p	inclusive	DE	1USAOHO	1.5+07	1.5+07	Jour	PR/C,88,054607	13	A.V.Voinov+	O2349

26 Iron 56

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{7}Li,x+p	inclusive	DE	1USAOHO	1.5+07	1.5+07	Jour	PR/C,88,054607	13	A.V.Voinov+	O2349

26 Iron 57

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x+p	inclusive	DAE	2NOROSL	2.1+07	2.1+07	Jour	PR/C,88,054607	13	A.V.Voinov+	O2349

27 Cobalt 59

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x+p	inclusive	DAE	2NOROSL	2.1+07	2.1+07	Jour	PR/C,88,054607	13	A.V.Voinov+	O2349
*	α,x+p	inclusive	DAP	2NOROSL	2.1+07	2.1+07	Jour	PR/C,88,054607	13	A.V.Voinov+	O2349

28 Nickel

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,x	Many	CS	1USALAS	7.0+05	7.5+08	Jour	NIM/B,234,419	05	J.M.Sisterson+	14010
*	α,el	^{nat}Ni	DA	4RUSFEI	6.0+06	8.5+06	Jour	NIM/B,420,1	18	A.F.Gurbich+	F1345
	^{14}N,x	^{13}N	CS	4RUSKUR	3.1+07	1.1+08	Jour	ZET,33,595	57	V.V.Volkov+	F1355
	^{14}N,x	^{13}N	DA	4RUSKUR	5.6+07	5.6+07	Jour	ZET,33,595	57	V.V.Volkov+	F1355

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,n	^{61}Zn	CS	1USABNL	1.1+07	2.2+07	Jour	PR,114,1600	59	J.B.Cumming	C2307
	α,x	^{61}Cu	CS	1USABNL	5.0+06	2.2+07	Jour	PR,114,1600	59	J.B.Cumming	C2307

28 Nickel 60

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,n	^{63}Zn	CS	1USABNL	5.0+06	2.2+07	Jour	PR,114,1600	59	J.B.Cumming	C2307

29 Copper

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,x	Many	CS	1USALAS	1.2+06	7.5+08	Jour	NIM/B,234,419	05	J.M.Sisterson+	14010
*	α,el	^{nat}Cu	DA	4RUSFEI	6.5+06	9.0+06	Jour	NIM/B,420,1	18	A.F.Gurbich+	F1345

29 Copper 63

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{64}Cu	CS	1USATNL	3.9+05	7.4+06	Jour	PR/C,97,044617	18	I.Newsome+	14502
	α,2n	^{65}Ga	CS	1USABNL	2.3+07	4.0+07	Jour	PR,113,289	59	D.L.Morrison+	C2306

29 Copper 65

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{66}Cu	CS	1USATNL	3.9+05	7.4+06	Jour	PR/C,97,044617	18	I.Newsome+	14502
	$\alpha,3p$	^{66}Ni	CS	1USABRK	5.7+06	7.8+06	Jour	PR,109,504	58	D.R.Nethaway+	C2304

30 Zinc

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,x	^{65}Ga	CS	1USABNL	2.0+07	2.0+07	Jour	PR,113,289	59	D.L.Morrison+	C2306

30 Zinc 64

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,γ	^{65}Ga	CS	1USABNL	4.8+06	9.9+06	Jour	PR,113,289	59	D.L.Morrison+	C2306
d,n	^{65}Ga	CS	1USABNL	1.1+07	1.1+07	Jour	PR,113,289	59	D.L.Morrison+	C2306
α,x	^{65}Ga	CS	1USABNL	2.7+07	3.9+07	Jour	PR,113,289	59	D.L.Morrison+	C2306

34 Selenium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{76}Br	TT	2JPNTOK	1.0+07	5.0+07	Jour	ARI,30,79	79	T.Nozaki+	A0184

34 Selenium 82

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{3}He,t	^{82}Br	DAP	2JPNOSA	4.2+08	4.2+08	Jour	PR/C,94,014614	16	D.Frekers+	E2520

35 Bromine

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{76}Kr	CS	4RUSFVE	3.7+07	9.8+07	Jour	RCA,54,57	91	N.G.Zaitseva+	A0918
p,x	^{79}Kr	CS	4RUSFVE	2.5+07	9.8+07	Jour	RCA,54,57	91	N.G.Zaitseva+	A0918

39 Yttrium 89

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

*	α,el	^{89}Y	DA	4RUSFEI	7.0+06	9.0+06	Jour	NIM/B,420,1	18	A.F.Gurbich+	F1345

40 Zirconium

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	p,x	^{90}Nb	TT	2GERDKZ	1.8+07	1.8+07	Jour	RCA,100,857	12	V.Radchenko+	O2347

40 Zirconium 90

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	^{8}Li,el	^{90}Zr	DA	2ITYPAD	1.8+07	2.2+07	Jour	EPJ/A,51,55	15	A.Pakou+	O2352
*	^{8}Li,non		CS	2ITYPAD	1.8+07	2.2+07	Jour	EPJ/A,51,55	15	A.Pakou+	O2352

41 Niobium 93

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	^{12}C,2n	^{103}Ag	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{12}C,3n	^{102}Ag	?	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{12}C,x	^{100}Pd	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{12}C,x	^{101}Pd	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{13}C,2n	^{104}Ag	?	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{13}C,4n	^{102}Ag	?	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{13}C,x	^{100}Pd	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354
	^{13}C,x	^{101}Pd	CS	4RUSKUR			Jour	ZET,37,654	59	A.S.Karamyan+	F1354

42 Molybdenum 92

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263
*	p,γ	^{93}Tc	CS	2GERKLN	3.7+06	5.3+06	Jour	PR/C,93,045809	16	J.Mayer+	O2355
*	p,γ	^{93}Tc	CSP	2GERKLN	3.7+06	5.3+06	Jour	PR/C,93,045809	16	J.Mayer+	O2355

42 Molybdenum 94

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263

42 Molybdenum 95

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263

42 Molybdenum 96

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263

42 Molybdenum 97

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263

42 Molybdenum 100

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USARPI			Jour	NSE,164,287	10	G.Leinweber+	14263

48 Cadmium 111

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,inel	^{111}Cd	CS	1USABNL	7.0+06	1.0+07	Jour	PR,121,184	61	N.T.Porile	C2312
d,inel	^{111}Cd	CS	1USABNL	1.5+07	2.0+07	Jour	PR,121,184	61	N.T.Porile	C2312
α,inel	^{111}Cd	CS	1USABNL	1.6+07	4.0+07	Jour	PR,121,184	61	N.T.Porile	C2312

49 Indium 115

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,inel	^{115}In	CS	1USABNL	6.3+06	9.9+06	Jour	PR,121,184	61	N.T.Porile	C2312
d,inel	^{115}In	CS	1USABNL	1.0+07	2.0+07	Jour	PR,121,184	61	N.T.Porile	C2312
α,inel	^{115}In	CS	1USABNL	1.6+07	4.0+07	Jour	PR,121,184	61	N.T.Porile	C2312
α,x	^{114}In	CS	1USABNL	2.2+07	4.0+07	Jour	PR,121,184	61	N.T.Porile	C2312

53 Iodine 127

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,3n	^{125}Xe	CS	4RUSFVE	4.5+07	1.0+08	Jour	RCA,54,57	91	N.G.Zaitseva+	A0918

55 Caesium 133

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,3n	^{131}Ba	CS	4RUSFVE	2.4+07	9.8+07	Jour	RCA,54,57	91	N.G.Zaitseva+	A0918

56 Barium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	p,x	^{126}Xe	CS	4RUSFVE	2.5+07	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

56 Barium 134

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,p	^{135}Ba	DAP	2FR CSN	1.5+07	1.5+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367
*	^{3}He,α	^{133}Ba	DAP	2FR CSN	3.2+07	3.2+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367
*	α,^{3}He	^{135}Ba	DAP	2FR CSN	4.0+07	4.0+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367

56 Barium 136

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,d	^{135}Ba	DAP	2FR CSN	2.3+07	2.3+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367
*	d,p	^{137}Ba	DAP	2FR CSN	1.5+07	1.5+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367
*	^{3}He,α	^{135}Ba	DAP	2FR CSN	3.2+07	3.2+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367
*	α,^{3}He	^{137}Ba	DAP	2FR CSN	4.0+07	4.0+07	Jour	PR/C,94,054314	16	S.V.Szwec+	O2367

57 Lanthanum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	?	4RUSFVE	5.0+07	5.0+07	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	p,x	^{126}Xe	CS	4RUSFVE	5.0+07	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

57 Lanthanum 139

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{137}La	CS	4RUSMOS	1.7+07	2.6+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,2n	^{137}La	INT	4RUSMOS		2.7+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,3n	^{136}La	CS	4RUSMOS	2.6+07	2.8+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,n	^{138}La	CS	4RUSMOS	9.1+06	2.6+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,n	^{138}La	INT	4RUSMOS		2.7+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,x+n	inclusive	CS	4RUSMOS	9.1+06	2.6+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970
*	γ,x+n	inclusive	INT	4RUSMOS		2.7+07	Jour	IZV,82,693	18	V.V.Varlamov+	M0970

58 Cerium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	5.0+07	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

59 Praseodymium 141

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

60 Neodymium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

60 Neodymium 145

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{143}Nd	CS	4RUSMOS	1.4+07	2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,2n	^{143}Nd	INT	4RUSMOS		2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,n	^{144}Nd	CS	4RUSMOS	1.0+07	2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,n	^{144}Nd	INT	4RUSMOS		2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,x+n	inclusive	CS	4RUSMOS	1.0+07	2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,x+n	inclusive	INT	4RUSMOS		2.0+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971

60 Neodymium 148

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{146}Nd	CS	4RUSMOS	1.3+07	1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,2n	^{146}Nd	INT	4RUSMOS		1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,n	^{147}Nd	CS	4RUSMOS	8.1+06	1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,n	^{147}Nd	INT	4RUSMOS		1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,x+n	inclusive	CS	4RUSMOS	8.1+06	1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971
*	γ,x+n	inclusive	INT	4RUSMOS		1.9+07	Jour	MPM,4,1840201	18	V.V.Varlamov+	M0971

62 Samarium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

62 Samarium 147

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	1USARPI			Jour	NSE,142,1	02	G.Leinweber+	13851

62 Samarium 150

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	1USARPI			Jour	NSE,142,1	02	G.Leinweber+	13851

62 Samarium 152

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	1USARPI			Jour	NSE,142,1	02	G.Leinweber+	13851

63 Europium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

63 Europium 151

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{3}He,2n	^{152}Tb	TT	4RUSKUR	4.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346
*	^{3}He,3n	^{151}Tb	TT	4RUSKUR	4.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346
*	^{3}He,4n	^{150}Tb	TT	4RUSKUR	4.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346
*	^{3}He,5n	^{149}Tb	TT	4RUSKUR	4.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346
*	^{3}He,6n	^{148}Tb	TT	4RUSKUR	5.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346
*	^{3}He,n	^{153}Tb	TT	4RUSKUR	4.0+07	7.0+07	Jour	AE,123,45	17	V.A.Zagryadskii+	F1346

64 Gadolinium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	7.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

65 Terbium 159

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

66 Dysprosium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

67 Holmium 165

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

68 Erbium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	?	4RUSFVE	3.0+10	7.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

69 Thulium 159

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

69 Thulium 169

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{168}Tm	CS	1USATNL	8.4+06	1.5+07	Jour	PR/C,96,064619	17	J.Soter+	14496
	p,x	Many	?	4RUSFVE	3.0+10	7.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

70 Ytterbium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	?	4RUSFVE	3.0+10	7.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	^{14}N,fis		CS	4RUSKUR	9.4+07	9.4+07	Jour	ZET,36,744	59	V.A.Druin+	F1353

73 Tantalum 181

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
*	^{39}K,fis		CS	1USAMSU	1.5+08	1.7+08	Jour	PR/C,97,021602	18	A.Wakhle+	C2285
*	^{39}K,fis		CS	3AULCBR	1.5+08	1.7+08	Jour	PR/C,97,021602	18	A.Wakhle+	C2285
*	^{46}K,fis		CS	1USAMSU	1.5+08	1.7+08	Jour	PR/C,97,021602	18	A.Wakhle+	C2285

74 Tungsten

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
	p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919

74 Tungsten 186

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{156}Gd,fis	Many	CS	4ZZZDUB	8.8+08	8.8+08	Jour	PR/C,96,064621	17	E.M.Kozulin+	F1350
*	^{156}Gd,fis	Many	DA	4ZZZDUB	8.8+08	8.8+08	Jour	PR/C,96,064621	17	E.M.Kozulin+	F1350
*	^{160}Gd,fis	Many	CS	4ZZZDUB	8.6+08	9.4+08	Jour	PR/C,96,064621	17	E.M.Kozulin+	F1350

*	^{160}Gd,fis	Many	DA	4ZZZDUB	8.6+08	9.4+08	Jour	PR/C,96,064621	17	E.M.Kozulin+	F1350

75 Rhenium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	Many	?	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
p,x	^{126}Xe	CS	4RUSFVE	3.0+10	3.0+10	Jour	GEK,12,1737	85	A.Yu.Shukolyukov+	A0919
^{14}N,fis		CS	4RUSKUR	8.0+07	9.9+07	Jour	ZET,36,744	59	V.A.Druin+	F1353

78 Platinum

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,x	^{13}N	DA	4RUSKUR	8.1+07	8.1+07	Jour	ZET,33,595	57	V.V.Volkov+	F1355

79 Gold 197

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,fis		CS	4RUSKUR	7.6+07	9.9+07	Jour	ZET,36,744	59	V.A.Druin+	F1353
^{14}N,x	^{13}N	DA	4RUSKUR	6.4+07	6.4+07	Jour	ZET,33,595	57	V.V.Volkov+	F1355

82 Lead

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,x	^{13}N	DA	4RUSKUR	6.0+07	6.0+07	Jour	ZET,33,595	57	V.V.Volkov+	F1355

82 Lead 207

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{40}Ar,3n	^{244}Fm	CS	4ZZZDUB	2.2+08	2.2+08	Jour	ZEP,20,580	74	Yu.Ts.Oganessian+	F1348
^{40}Ar,n	^{246}Fm	CS	4ZZZDUB	2.2+08	2.2+08	Jour	ZEP,20,580	74	Yu.Ts.Oganessian+	F1348

82 Lead 208

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{40}Ar,2n	^{246}Fm	CS	4ZZZDUB	2.2+08	2.2+08	Jour	ZEP,20,580	74	Yu.Ts.Oganessian+	F1348
^{40}Ar,4n	^{244}Fm	CS	4ZZZDUB	2.2+08	2.2+08	Jour	ZEP,20,580	74	Yu.Ts.Oganessian+	F1348

83 Bismuth 209

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,2n	^{211}At	TT	2ZZZISP	2.9+07	3.3+07	Jour	ARI,63,621	05	F.Groppi+	O2341
	α,3n	^{210}At	TT	2ZZZISP	3.3+07	3.3+07	Jour	ARI,63,621	05	F.Groppi+	O2341
	α,fis		CS	2FR SAC	6.5+08	1.3+10	Jour	APP/B,34,4205	03	Z.Todorovic+	O2342
	α,n	^{212}At	CS	1USAPUR	1.8+07	1.9+07	Jour	PR,128,1778	62	J.C.Ritter+	C2315
	^{12}C,fis		CS	4RUSKUR	6.0+07	7.0+07	Jour	ZET,36,744	59	V.A.Druin+	F1353
	^{14}N,fis		CS	4RUSKUR	6.9+07	9.6+07	Jour	ZET,36,744	59	V.A.Druin+	F1353
	^{16}O,fis		CS	4RUSKUR	7.8+07	9.0+07	Jour	ZET,36,744	59	V.A.Druin+	F1353

88 Radium 226

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,fis		CS	1USAWAU	1.1+07	1.1+07	Jour	PR,109,942	58	R.C.Jensen+	C2311
	p,fis	Many	FY	1USAWAU	1.1+07	1.1+07	Jour	PR,109,942	58	R.C.Jensen+	C2311
	d,fis		CS	1USAWAU	1.4+07	2.0+07	Jour	PR,118,771	60	R.C.Jensen+	C2310
	d,fis	Many	FY	1USAWAU	1.4+07	2.2+07	Jour	PR,118,771	60	R.C.Jensen+	C2310
	α,fis		CS	1USAWAU	2.4+07	4.3+07	Jour	PR,118,771	60	R.C.Jensen+	C2310
	α,fis	Many	FY	1USAWAU	2.4+07	4.3+07	Jour	PR,118,771	60	R.C.Jensen+	C2310
	α,x	^{226}Th	CS	1USABRK	3.6+07	4.6+07	Jour	PR,110,507	58	R.Vandenbosch+	C2305

90 Thorium 230

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,x	^{230}U	CS	1USABRK	3.8+07	4.4+07	Jour	PR,110,507	58	R.Vandenbosch+	C2305

92 Uranium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,fis	Many	FY	2SF JYV	2.5+07	5.0+07	Jour	EPJ/A,52,104	16	H.Penttila+	O2357
	d,fis	Many	FY	1USAMIT	1.4+07	1.4+07	Jour	PR,108,1264	57	T.T.Sugihara+	C2303
	d,fis	^{89}Sr	CS	1USABRK	2.9+07	1.8+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{97}Zr	CS	1USABRK	1.5+07	1.9+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{109}Pd	CS	1USABRK	1.6+07	1.9+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{112}Pd	CS	1USABRK	1.5+07	1.9+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{111}Ag	CS	1USABRK	3.9+07	1.9+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{112}Ag	CS	1USABRK	1.9+08	1.9+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770
	d,fis	^{140}Ba	CS	1USABRK	2.4+07	1.8+08	Jour	PR,100,1284	55	H.G.Hicks+	C1770

92 Uranium 233

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,fis		CS	1USAORL	4.0-01	7.0+05	Jour	NSE,135,141	00	K.H.Guber+	13890
	n,fis	Many	FY	1USAMTR	2.5-02	2.5-02	Rept	IDO-14678	67	W.J.Maeck+	13848
	α,fis	Many	CS	1USAANL	2.5+07	4.0+07	Jour	PR,121,1410	61	L.J.Colbyjr+	C2313
	α,fis	Many	CS	1USAANL	2.5+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314
	α,fis		CS	1USAANL	2.5+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314
	α,fis	Many	FY	1USAANL	2.5+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314

92 Uranium 235

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,fis	Many	FY	1USATNL	1.3+07	1.3+07	Jour	EPJ/CS,146,04018	17	Krishichayan+	L0225
	n,fis		CS	1USAORL	1.0+02	2.0+03	Jour	NSE,111,415	92	L.W.Weston+	13488
	n,fis	Many	FY	1USAMTR	2.5-02	2.5-02	Rept	IDO-14678	67	W.J.Maeck+	13848
	α,fis	Many	CS	1USAANL	2.0+07	4.0+07	Jour	PR,115,1247	59	R.Gunnink+	C2308
	α,fis		CS	1USAANL	2.0+07	4.0+07	Jour	PR,115,1247	59	R.Gunnink+	C2308
	α,fis	Many	CS	1USAANL	2.8+07	4.0+07	Jour	PR,121,1410	61	L.J.Colbyjr+	C2313
	α,fis	Many	FY	1USAANL	2.0+07	4.0+07	Jour	PR,115,1247	59	R.Gunnink+	C2308
	α,fis		NU	1USAANL	2.3+07	4.0+07	Jour	PR,115,1247	59	R.Gunnink+	C2308
	α,fis	^{140}La	CS	1USAANL	2.8+07	4.0+07	Jour	PR,121,1410	61	L.J.Colbyjr+	C2313
	^{14}N,fis		CS	4RUSKUR	7.4+07	9.6+07	Jour	ZET,36,744	59	V.A.Druin+	F1353

92 Uranium 236

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,x	^{236}Pu	CS	1USABRK	3.4+07	4.6+07	Jour	PR,110,507	58	R.Vandenbosch+	C2305

92 Uranium 238

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,fis	Many	FY	1USATNL	1.3+07	1.3+07	Jour	EPJ/CS,146,04018	17	Krishichayan+	L0225
	d,fis		CS	1USAMIT	5.0+06	1.4+07	Jour	PR,108,1264	57	T.T.Sugihara+	C2303
	d,fis	Many	NU	1USAMIT	1.4+07	1.4+07	Jour	PR,108,1264	57	T.T.Sugihara+	C2303
	d,fis		NU	1USAMIT	5.0+06	1.4+07	Jour	PR,108,1264	57	T.T.Sugihara+	C2303
	α,fis	Many	CS	1USAANL	2.0+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314
	α,fis		CS	1USAANL	2.0+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314
	α,fis	Many	CS	1USAANL	3.4+07	4.0+07	Jour	PR,121,1410	61	L.J.Colbyjr+	C2313
	α,fis	Many	FY	1USAANL	2.4+07	4.0+07	Jour	PR,121,1415	61	L.J.Colbyjr+	C2314
	α,fis	^{140}La	CS	1USAANL	3.4+07	4.0+07	Jour	PR,121,1410	61	L.J.Colbyjr+	C2313
	^{12}C,fis		CS	4RUSKUR	6.4+07	7.7+07	Jour	ZET,36,744	59	V.A.Druin+	F1353
	^{14}N,fis		CS	4RUSKUR	7.4+07	1.0+08	Jour	ZET,36,744	59	V.A.Druin+	F1353
	^{16}O,fis		CS	4RUSKUR	8.0+07	1.0+08	Jour	ZET,36,744	59	V.A.Druin+	F1353

94 Plutonium 238

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,2n	^{240}Cm	CS	1USABRK	2.5+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,4n	^{238}Cm	CS	1USABRK	3.7+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{91}Sr	CS	1USABRK	2.9+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{115}Cd	CS	1USABRK	2.5+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{140}Ba	CS	1USABRK	2.5+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{143}Ce	CS	1USABRK	3.0+07	4.2+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{147}Nd	CS	1USABRK	3.0+07	4.2+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{156}Eu	CS	1USABRK	3.0+07	4.2+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{161}Tb	CS	1USABRK	3.0+07	4.2+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,n	^{241}Cm	CS	1USABRK	2.4+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,x	^{239}Am	CS	1USABRK	2.9+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,x	^{240}Am	CS	1USABRK	2.9+07	4.7+07	Jour	PR,104,434	56	R.A.Glass+	C2296

94 Plutonium 239

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,fis	Many	FY	1USATNL	1.3+07	1.3+07	Jour	EPJ/CS,146,04018	17	Krishichayan+	L0225
	n,fis		CS	1USAORL	1.0+02	2.0+04	Jour	NSE,111,415	92	L.W.Weston+	13488
	α,2n	^{241}Cm	CS	1USABRK	2.4+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,3n	^{240}Cm	CS	1USABRK	2.4+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,4n	^{239}Cm	CS	1USABRK	4.1+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,5n	^{238}Cm	CS	1USABRK	4.6+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{82}Br	CS	1USABRK	2.4+07	2.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{83}Br	CS	1USABRK	2.4+07	2.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{89}Sr	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{91}Sr	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{92}Sr	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{105}Ru	CS	1USABRK	3.4+07	3.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{115}Cd	CS	1USABRK	2.0+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{117}Cd	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{131}I	CS	1USABRK	2.4+07	2.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{133}I	CS	1USABRK	2.4+07	2.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{139}Ba	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{140}Ba	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{143}Ce	CS	1USABRK	2.4+07	3.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{145}Ce	CS	1USABRK	3.4+07	3.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{147}Nd	CS	1USABRK	4.6+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{156}Eu	CS	1USABRK	2.4+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{157}Eu	CS	1USABRK	2.4+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,fis	^{161}Tb	CS	1USABRK	4.6+07	4.6+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,n	^{242}Cm	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,p	^{242}Am	CS	1USABRK	2.0+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,x	^{239}Am	CS	1USABRK	3.8+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296
	α,x	^{240}Am	CS	1USABRK	2.7+07	4.8+07	Jour	PR,104,434	56	R.A.Glass+	C2296

94 Plutonium 242

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,4n	^{242}Cm	CS	1USABRK	3.3+07	4.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296
α,x	^{244}Cm	CS	1USABRK	2.4+07	4.4+07	Jour	PR,104,434	56	R.A.Glass+	C2296

96 Curium 244

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,3n	^{245}Cf	CS	1USABRK	2.9+07	4.1+07	Jour	PR,102,747	56	A.Chetham-Strodejr+	C2295
α,4n	^{244}Cf	CS	1USABRK	3.6+07	4.0+07	Jour	PR,102,747	56	A.Chetham-Strodejr+	C2295

98 Californium 249

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,2n	^{249}Es	CS	1USABRK	1.6+07	2.2+07	Jour	PR,104,1314	56	A.Chetham-Strode+	C2298
d,3n	^{248}Es	CS	1USABRK	1.6+07	2.2+07	Jour	PR,104,1314	56	A.Chetham-Strode+	C2298

98 Californium 252

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
0,fis		NU	1USAANL	Spont		Jour	PR,126,197	62	J.W.Meadows+	12419