EXFOR News (January 2019)

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 dΩ_1/dΩ_2/dE'	NUD	Delayed fission neutron multiplicity $\bar{\nu_d}$
D3E	Triple differential dΩ/dE'_1/dE'_2	NUF	Fragment neutrons
D4A	Quadruple diff. dΩ_1/dΩ_2/dE'_1/dE'_2	POL	Polarization
DA	Differential d/dΩ	POD	Differential polarization
DAA	Double differential dΩ_1/dΩ_2	PY	Product yield (other than fission)
DAE	Double differential dΩ/dE'	RI	Resonance integral
DAP	Partial differential d/dΩ	RP	Resonance parameter
DAT	Temperature-dependent Legendre coefficient	RR	Reaction rate
DE	Differential d/dE'	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, d/dΩ
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			
*	^{72}Ni,inel	^{1}H	?	2JPNIPC	1.7+10	1.7+10	Jour	PR/C,97,044315	18	M.L.Cortes+	E2584
*	^{74}Ni,inel	^{1}H	?	2JPNIPC	1.7+10	1.7+10	Jour	PR/C,97,044315	18	M.L.Cortes+	E2584
*	^{76}Zn,inel	^{1}H	?	2JPNIPC	1.8+10	1.8+10	Jour	PR/C,97,044315	18	M.L.Cortes+	E2584
*	^{80}Zn,inel	^{1}H	?	2JPNIPC	1.9+10	1.9+10	Jour	PR/C,97,044315	18	M.L.Cortes+	E2584

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	d,n+p	^{2}H	D3A	2JPNKTO	1.5+07	1.5+07	Jour	JPJ,25,21	68	T.Tanabe	E2267
	α,n+p	^{4}He	D3A	2JPNIPC	1.8+07	1.8+07	Jour	NP/A,299,77	78	K.Sagara+	E0078
	α,n+p	^{4}He	D3A	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,25,21	68	T.Tanabe	E2267
	α,n+p	^{4}He	?	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,25,21	68	T.Tanabe	E2267
	^{14}N,n	^{15}O	CS	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,n	^{15}O	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

2 Helium 4

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	α,d	^{6}Li	DAP	1USAMRY	6.2+07	1.6+08	Jour	PR/C,25,34	Jan 82	B.G.Glagola+	C0165
*	α,n	^{7}Be	CSP	2JPNOSA	3.9+07	4.0+07	Jour	PRL,118,052701	17	T.Kawabata+	E2535
*	α,n	^{7}Be	DAP	2JPNOSA	3.8+07	4.0+07	Jour	PRL,118,052701	17	T.Kawabata+	E2535
	α,n	^{7}Be	DAP	1USAMRY	6.2+07	1.6+08	Jour	PR/C,25,34	Jan 82	B.G.Glagola+	C0165
	α,p	^{7}Li	DAP	1USAMRY	6.2+07	1.6+08	Jour	PR/C,25,34	Jan 82	B.G.Glagola+	C0165
	α,x	^{6}Li	DA	1USAMRY	6.2+07	1.6+08	Jour	PR/C,25,34	Jan 82	B.G.Glagola+	C0165
*	^{30}S,el	^{4}He	?	2JPNIPC	2.0+06	5.4+06	Jour	PR/C,97,015802	18	D.Kahl+	E2583
*	^{38}Ar,n	^{41}Ca	?	1USAANL	6.9+06	9.4+06	Jour	PR/C,97,055801	18	R.Talwar+	C2302
*	^{38}Ar,p	^{41}K	?	1USAANL	6.9+06	9.4+06	Jour	PR/C,97,055801	18	R.Talwar+	C2302

3 Lithium

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524

3 Lithium 6

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

*	d,α	^{4}He	CS	2JPNTOH	2.3+04	5.2+04	Jour	PR/C,94,054602	16	K.Fang+	E2545
*	d,α	^{4}He	MLT	2JPNTOH	3.0+04	7.0+04	Jour	PR/C,94,054602	16	K.Fang+	E2545
*	d,p	^{7}Li	CSP	2JPNTOH	2.4+04	5.1+04	Jour	PR/C,94,054602	16	K.Fang+	E2545
*	d,p	^{7}Li	MLT	2JPNTOH	3.0+04	7.0+04	Jour	PR/C,94,054602	16	K.Fang+	E2545

3 Lithium 7

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,p	^{9}Be	CSP	2JPNNIG	1.8+06	3.0+06	Jour	JPJ,26,853	69	J.Sanada+	E2271
	^{3}He,p	^{9}Be	DAP	2JPNNIG	3.0+06	3.0+06	Jour	JPJ,26,853	69	J.Sanada+	E2271

4 Beryllium 9

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
	α,x	^{7}Be	CS	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
	α,x	^{7}Be	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
	^{14}N,^{6}He	^{17}F	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,^{10}Be	^{13}N	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,n	^{22}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,n+α	^{18}F	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
*	^{70}Zn,x	Many	CS	2JPNIPC	2.4+10	2.4+10	Jour	PRL,121,022501	18	O.B.Tarasov+	E2586

5 Boron 10

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{14}N,^{11}B	^{13}N	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,d	^{22}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,x	^{11}C	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,x	^{15}O	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,x	^{18}F	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{16}O,^{6}Li	^{20}Ne	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{9}Be	^{17}F	DAP	2JPNKTO	8.2+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{11}B	^{15}O	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{9}B	^{17}O	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{11}C	^{15}N	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{12}C	^{14}N	DAP	2JPNKTO	7.3+06	1.0+07	Jour	JPJ,25,1	68	Y.Okuma	E2265

5 Boron 11

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{14}N,2p	^{23}Ne	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,p	^{24}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

	^{16}O,^{7}Li	^{20}Ne	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{9}Be	^{18}F	DAP	2JPNKTO	1.0+07	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{10}B	^{17}O	DAP	2JPNKTO	9.0+06	1.0+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{12}C	^{15}N	DAP	2JPNKTO	6.5+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265
	^{16}O,^{13}C	^{14}N	DAP	2JPNKTO	7.3+06	1.1+07	Jour	JPJ,25,1	68	Y.Okuma	E2265

6 Carbon

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	d,x	^{7}Be	CS	1USAORL	2.2+07	8.4+07	Jour	PR/C,11,50	75	C.B.Fulmer+	C2348
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	PY	2JPNKYU	5.0+06	9.0+06	Jour	NSTP,4,582	14	Y.Tajiri+	E2591
	^{3}He,x	^{7}Be	CS	1USAORL	1.3+07	9.8+07	Jour	PR/C,11,50	75	C.B.Fulmer+	C2348
	α,x	^{7}Be	CS	1USAORL	3.8+07	7.8+07	Jour	PR/C,11,50	75	C.B.Fulmer+	C2348
*	^{36}Mg,x	^{33}Mg	CS	2JPNIPC	8.5+09	8.5+09	Jour	PR/C,96,034328	17	S.Momiyama+	E2553
*	^{36}Mg,x	^{34}Mg	CS	2JPNIPC	8.5+09	8.5+09	Jour	PR/C,96,034328	17	S.Momiyama+	E2553
*	^{36}Mg,x	^{35}Mg	CS	2JPNIPC	8.5+09	8.5+09	Jour	PR/C,96,034328	17	S.Momiyama+	E2553
*	^{36}Mg,x	^{35}Mg	CSP	2JPNIPC	8.5+09	8.5+09	Jour	PR/C,96,034328	17	S.Momiyama+	E2553
*	^{36}Mg,x	^{35}Mg	DP	2JPNIPC	8.5+09	8.5+09	Jour	PR/C,96,034328	17	S.Momiyama+	E2553

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,x	^{11}C	CS	1USANAL	3.0+11	3.0+11	Jour	PR/C,13,253	76	S.B.Kaufman+	C2341
	d,p	^{13}C	CSP	2JPNKTO	1.2+07	1.5+07	Jour	JPJ,25,36	68	K.Hosono	E2268
	d,p	^{13}C	DAP	2JPNKTO	1.2+07	1.5+07	Jour	JPJ,25,36	68	K.Hosono	E2268
	^{3}He,x	^{7}Be	CS	2JPNTOK	1.3+07	2.8+07	Jour	PL,23,586	66	T.Mikumo+	E2394
	α,x	^{7}Li	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
	α,x	^{7}Be	CS	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
	α,x	^{7}Be	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
	α,x	^{7}Be	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
	α,x	^{11}B	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
	^{14}C,el	^{12}C	DA	1USABNL	9.2+06	1.9+07	Thes	STERBENZ	87	S.M.Sterbenz	C2352
	^{14}N,^{13}C	^{13}N	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,α	^{22}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
	^{14}N,x	^{18}F	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	^{14}N,2p	^{25}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

6 Carbon 14

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,γ	^{16}N	CS	1USATEX	1.2+06	2.6+06	Jour	PR,136,B71	64	J.B.Nelson+	C1125

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	2JPNTOK	1.0+07	1.5+07	Jour	JPJ,30,1217	71	Y.Oda+	E2301
p,el	^{14}N	DA	2JPNTOK	7.7+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{14}N	CSP	2JPNTOK	1.0+07	1.0+07	Jour	JPJ,30,1217	71	Y.Oda+	E2301
p,inel	^{14}N	CSP	2JPNTOK	7.7+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{14}N	DAP	2JPNTOK	1.0+07	1.5+07	Jour	JPJ,30,1217	71	Y.Oda+	E2301
p,inel	^{14}N	DAP	2JPNTOK	7.7+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
^{3}He,x	^{7}Be	CS	2JPNTOK	1.5+07	2.9+07	Jour	PL,23,586	66	T.Mikumo+	E2394
α,x	^{7}Li	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
α,x	^{7}Be	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
α,x	^{9}Be	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
α,x	^{10}B	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
α,x	^{11}B	?	2GERKFK	9.8+07	9.8+07	Jour	PR,188,1517	Dec 69	M.Jung+	C0380
^{14}N,^{13}N	^{15}N	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,x	^{15}O	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

8 Oxygen 16

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,p	^{17}O	DAP	2JPNKTO	1.4+07	1.4+07	Jour	JPJ,25,36	68	K.Hosono	E2268
^{3}He,x	^{7}Be	CS	2JPNTOK	1.3+07	2.8+07	Jour	PL,23,586	66	T.Mikumo+	E2394
α,x	^{7}Be	CS	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
α,x	^{7}Be	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
α,x	^{11}C	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
α,x	^{13}N	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
α,x	^{15}O	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346
^{14}C,el	^{16}O	DA	1USABNL	1.1+07	2.1+07	Thes	STERBENZ	87	S.M.Sterbenz	C2352
^{14}N,2p	^{28}Al	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,^{12}C	^{18}F	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,^{13}N	^{17}O	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,^{15}N	^{15}O	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,γ	^{30}P	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,x	^{22}Na	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

8 Oxygen 18

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{14}C,el	^{18}O	DA	1USABNL	1.1+07	1.8+07	Thes	STERBENZ	87	S.M.Sterbenz	C2352

9 Fluorine 19

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,x	^{7}Be	CS	2JPNTOK	1.3+07	2.9+07	Jour	PL,23,586	66	T.Mikumo+	E2394

10 Neon 20

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{20}Ne	DA	2JPNTOK	7.8+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
*	p,γ		RP	1USANOT	1.1+06	1.1+06	Jour	PR/C,97,065802	18	S.Lyons+	C2328
*	p,γ	^{21}Na	CSP	1USANOT	5.0+05	1.9+06	Jour	PR/C,97,065802	18	S.Lyons+	C2328
*	p,γ	^{21}Na	RR	1USANOT			Jour	PR/C,97,065802	18	S.Lyons+	C2328
	p,inel	^{20}Ne	CSP	2JPNTOK	5.0+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
	p,inel	^{20}Ne	DAP	2JPNTOK	7.8+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218

12 Magnesium 24

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{24}Mg	DA	2JPNTOK	7.7+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
	p,inel	^{24}Mg	CSP	2JPNTOK	7.8+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
	p,inel	^{24}Mg	DAP	2JPNTOK	7.7+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
	d,p	^{25}Mg	DAP	2JPNKTO	1.2+07	1.2+07	Jour	JPJ,25,36	68	K.Hosono	E2268
	^{3}He,x	^{7}Be	CS	2JPNTOK	1.9+07	2.9+07	Jour	PL,23,586	66	T.Mikumo+	E2394
	α,d	^{26}Al	DAP	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,21,2445	66	D.-H.Kim	E2253

12 Magnesium 26

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,0		RP	2JPNNIG			Jour	JPJ,28,1101	70	T.Murata+	E2277
	p,el	^{26}Mg	DA	2JPNNIG	1.2+06	3.0+06	Jour	JPJ,28,1101	70	T.Murata+	E2277

13 Aluminium 27

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	PY	2JPNKYU	9.0+06	9.0+06	Jour	EPRC,71,197	15	S.Araki+	E2593
	^{3}He,x	^{7}Be	CS	2JPNTOK	1.0+07	2.9+07	Jour	PL,23,586	66	T.Mikumo+	E2394
	α,p	^{30}Si	DAE	2JPNKTO	3.0+07	3.0+07	Jour	JPJ,17,1526	62	I.Kumabe+	E2236
	α,x	^{18}F	?	1USASRE	4.1+08	7.2+08	Jour	PR/C,10,150	74	P.J.Karol	C2347
	α,x	^{18}F	?	1USABRK	9.2+08	9.2+08	Jour	PR/C,9,1718	74	J.R.Radin+	C2346

α,x	^{24}Na	CS	1USABRK	9.2+08	9.2+08	Jour	PR/C,6,1293	72	L.B.Church	C2344

14 Silicon 28

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,inel	^{28}Si	CSP	2JPNTOK	5.0+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{28}Si	DAP	2JPNTOK	7.6+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
^{3}He,x	^{7}Be	CS	2JPNTOK	1.4+07	2.7+07	Jour	PL,23,586	66	T.Mikumo+	E2394
α,d	^{30}P	DAP	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,21,2445	66	D.-H.Kim	E2253

16 Sulphur 32

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,el	^{32}S	DA	2JPNTOK	8.0+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{32}S	CSP	2JPNTOK	5.1+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{32}S	DAP	2JPNTOK	8.0+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
α,d	^{34}Cl	DAP	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,21,2445	66	D.-H.Kim	E2253
^{14}N,2p	^{44}Sc	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,^{12}C	^{34}Cl	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,^{18}F	^{28}Si	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321
^{14}N,p	^{45}Ti	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

16 Sulphur 34

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,n	^{47}V	?	1USAORL	1.9+07	1.9+07	Jour	PNA,39,975	53	H.L.Reynolds+	C2321

18 Argon 40

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,el	^{40}Ar	DA	2JPNTOK	7.8+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{40}Ar	CSP	2JPNTOK	5.5+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
p,inel	^{40}Ar	DAP	2JPNTOK	7.8+06	1.4+07	Jour	JPJ,15,760	60	Y.Oda+	E2218
d,α	^{38}Cl	CSP	2JPNOSA	1.1+07	1.1+07	Jour	JPJ,30,1523	71	K.Suzuki+	E2302
d,α	^{38}Cl	DAP	2JPNOSA	1.1+07	1.1+07	Jour	JPJ,30,1523	71	K.Suzuki+	E2302
α,el	^{40}Ar	DA	2JPNOSA	2.2+07	2.2+07	Jour	JPJ,28,1107	70	T.Wakatsuki+	E2278
α,inel	^{40}Ar	DAP	2JPNOSA	2.2+07	2.2+07	Jour	JPJ,28,1107	70	T.Wakatsuki+	E2278

19 Potassium 41

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

*	p,α	^{38}Ar	RR	1USAANL		Jour	PR/C,97,055801	18	R.Talwar+	C2302

20 Calcium 40

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,α	^{38}K	CSP	2JPNOSA	1.1+07	1.1+07	Jour	JPJ,30,1523	71	K.Suzuki+	E2302
	d,α	^{38}K	DAP	2JPNOSA	1.1+07	1.2+07	Jour	JPJ,30,1523	71	K.Suzuki+	E2302
	α,d	^{42}Sc	DAP	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,21,2445	66	D.-H.Kim	E2253

20 Calcium 41

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{38}Ar	RR	1USAANL			Jour	PR/C,97,055801	18	R.Talwar+	C2302

21 Scandium 45

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,α	^{44}Sc	CS	1USAFSU	6.0+06	1.9+07	Jour	PR/C,1,1776	70	C.Riley	C2342
	^{3}He,d	^{46}Ti	DAP	2JPNTOK	2.4+07	2.4+07	Jour	JPJ,25,953	68	H.Ohmura+	E2270

22 Titanium 47

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{44}Ca	CS	4RUSFEI	4.0+06	6.0+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

24 Chromium 50

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{47}Ti	CS	4RUSFEI	4.7+06	7.2+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

24 Chromium 52

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{49}Ti	CS	4RUSFEI	6.8+06	7.2+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

24 Chromium 53

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{50}Ti	CS	4RUSFEI	4.5+06	7.2+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

26 Iron

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,x	^{51}Cr	CS	1USAORL	3.1+07	6.8+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{52}Mn	CS	1USAORL	1.2+07	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{54}Mn	CS	1USAORL	1.6+07	6.8+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{56}Mn	CS	1USAORL	2.5+07	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{52}Fe	CS	1USAORL	1.2+07	7.0+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{53}Fe	CS	1USAORL	7.6+06	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{55}Co	CS	1USAORL	1.2+07	7.0+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{56}Co	CS	1USAORL	1.6+07	7.0+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{57}Co	CS	1USAORL	6.6+06	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{58}Co	CS	1USAORL	5.3+06	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{56}Ni	CS	1USAORL	1.3+07	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345
^{3}He,x	^{57}Ni	CS	1USAORL	5.7+06	6.9+07	Jour	PR/C,6,1720	72	C.B.Fulmer+	C2345

26 Iron 54

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{51}Cr	CS	4RUSFEI	4.8+06	7.0+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

26 Iron 56

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot		CS	4RUSKUR	1.8+06	1.8+06	Rept	YFI-14,8	72	V.M.Morozov+	40075
^{3}He,2n	^{57}Ni	CS	1USAYAL	6.5+06	2.9+07	Jour	PR,137,B1202	65	J.-P.Hazan+	C2320
^{3}He,3n	^{56}Ni	CS	1USAYAL	2.0+07	2.9+07	Jour	PR,137,B1202	65	J.-P.Hazan+	C2320
^{3}He,p	^{58}Co	CS	1USAYAL	5.7+06	2.2+07	Jour	PR,137,B1202	65	J.-P.Hazan+	C2320
^{3}He,x	^{56}Co	CS	1USAYAL	1.8+07	2.9+07	Jour	PR,137,B1202	65	J.-P.Hazan+	C2320
^{3}He,x	^{57}Co	CS	1USAYAL	5.7+06	2.9+07	Jour	PR,137,B1202	65	J.-P.Hazan+	C2320

26 Iron 57

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{54}Cr	CS	4RUSFEI	4.3+06	6.5+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,x	^{57}Ni	CS	1USABRK	9.0+08	9.0+08	Jour	PR/C,6,1293	72	L.B.Church	C2344

28 Nickel 60

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{57}Fe	CS	4RUSFEI	6.0+06	7.2+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

29 Copper

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{51}Cr	CS	1USALAS	6.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{52}Mn	CS	1USALAS	6.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{54}Mn	CS	1USALAS	5.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{59}Fe	CS	1USALAS	5.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{55}Co	CS	1USALAS	5.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{57}Co	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{58}Co	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{60}Co	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{56}Ni	CS	1USALAS	6.2+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{57}Ni	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{61}Cu	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{64}Cu	CS	1USALAS	4.1+07	9.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
	α,x	Many	CS	1USASRE	7.2+08	7.2+08	Jour	PR/C,10,150	74	P.J.Karol	C2347

29 Copper 63

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,p	^{66}Zn	?	2JPNKTO	3.0+07	3.0+07	Jour	JPJ,17,1526	62	I.Kumabe+	E2236

29 Copper 65

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,α	^{64}Cu	CS	1USAANL	1.4+07	3.3+07	Jour	PR,151,907	66	G.B.Saha+	C2323
	α,el	^{65}Cu	DA	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,25,301	68	I.Kumabe+	E2564
	α,inel	^{65}Cu	DAP	2JPNKTO	2.9+07	2.9+07	Jour	JPJ,25,301	68	I.Kumabe+	E2564
	α,x	^{64}Cu	CS	1USABRK	9.0+08	9.0+08	Jour	PR/C,6,1293	72	L.B.Church	C2344

30 Zinc 64

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{61}Ni	CS	4RUSFEI	4.2+06	6.1+06	Jour	NSE,191,282	18	T.Khromyleva+	41653

31 Gallium 71

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{3}He,t	^{71}Ge	DAP	2JPNOSA	4.2+08	4.2+08	Jour	PR/C,91,034608	15	D.Frekers+	E2269

37 Rubidium 87

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,n	^{87}Sr	CS	2JPNTOK	1.2+06	1.5+06	Jour	JPJ,23,895	67	K.Miyano+	E2258

39 Yttrium 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	Many	CS	1USALAS	8.0+08	8.0+08	Jour	PR/C,48,236	93	K.L.Kolsky+	C2350
	α,n	^{92}Nb	CS	1USALRL	1.0+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
	α,n	^{92}Nb	DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

40 Zirconium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x	^{88}Zr	CS	2JPNIPC	3.8+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{89}Zr	CS	2JPNIPC	6.4+06	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{95}Zr	CS	2JPNIPC	2.5+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{90}Nb	CS	2JPNIPC	3.8+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{92}Nb	CS	2JPNIPC	2.0+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{95}Nb	CS	2JPNIPC	1.4+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{96}Nb	CS	2JPNIPC	2.0+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592
*	α,x	^{93}Mo	CS	2JPNIPC	1.1+07	4.9+07	Jour	ARI,144,47	19	T.Murata+	E2592

40 Zirconium 90

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,inel	^{90}Zr	DAP	2JPNOSA	3.0+08	3.0+08	Jour	PRL,108,262501	12	C.Iwamoto+	E2381
*	p,inel	^{90}Zr	DE	2JPNOSA	3.0+08	3.0+08	Jour	PRL,108,262501	12	C.Iwamoto+	E2381

^{12}C,^{11}B	^{91}Nb	DAP	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,el	^{90}Zr	DA	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{13}C	^{91}Nb	DAP	2JPNIPC	7.5+07	7.5+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{13}N	^{91}Zr	DAP	2JPNIPC	7.5+07	7.5+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{15}N	^{89}Zr	DAP	2JPNIPC	7.5+07	7.5+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	7.5+07	7.5+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

40 Zirconium 91

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{91}Zr	DA	2JPNJPN	1.5+07	1.5+07	Jour	JPJ,27,1087	69	Y.Awaya+	E2275
	p,inel	^{91}Zr	DAP	2JPNJPN	1.5+07	1.5+07	Jour	JPJ,27,1087	69	Y.Awaya+	E2275

40 Zirconium 96

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x	^{99}Mo	CS	2JPNIPC	1.0+07	3.4+07	Jour	ARI,144,47	19	T.Murata+	E2592

41 Niobium 93

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,4n	^{90}Mo	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{82}Rb	CS	1USALAS	8.9+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{83}Sr	CS	1USALAS	7.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{85}Y	CS	1USALAS	7.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{86}Y	CS	1USALAS	6.1+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{87}Y	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{88}Y	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{86}Zr	CS	1USALAS	6.1+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{87}Zr	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{88}Zr	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{89}Zr	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{89}Nb	CS	1USALAS	6.1+07	7.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{90}Nb	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{91}Nb	CS	1USALAS	4.0+07	4.0+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{92}Nb	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	p,x	^{93}Mo	CS	1USALAS	4.0+07	8.9+07	Jour	NIM/B,429,53	18	A.S.Voyles+	C2327
*	d,x	^{89}Zr	CS	2JPNIPC	1.9+07	2.3+07	Jour	NIM/B,436,217	18	M.Aikawa+	E2589
*	d,x	^{92}Nb	CS	2JPNIPC	1.0+07	2.3+07	Jour	NIM/B,436,217	18	M.Aikawa+	E2589
*	d,x	^{93}Mo	CS	2JPNIPC	3.5+06	2.3+07	Jour	NIM/B,436,217	18	M.Aikawa+	E2589
*	d,x+n	inclusive	DAE	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
*	d,x+n	inclusive	DAP	2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,842,62	17	S.Araki+	E2524
	α,2n	^{95}Tc	CS	1USASNP	1.8+07	4.1+07	Jour	PR/C,2,1887	70	P.Bond+	C2343
	α,2p	^{95}Nb	CS	1USASNP	3.4+07	4.1+07	Jour	PR/C,2,1887	70	P.Bond+	C2343
	α,3n	^{94}Tc	CS	1USASNP	2.8+07	4.1+07	Jour	PR/C,2,1887	70	P.Bond+	C2343
	α,n	^{96}Tc	CS	1USALRL	1.2+07	1.7+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
	α,n	^{96}Tc	CS	1USASNP	1.5+07	4.1+07	Jour	PR/C,2,1887	70	P.Bond+	C2343

α,n	^{96}Tc	DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
α,x	^{92}Nb	CS	1USASNP	2.6+07	4.1+07	Jour	PR/C,2,1887	70	P.Bond+	C2343

42 Molybdenum 92

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	Many	CS	1USALAS	8.0+08	8.0+08	Jour	PR/C,48,236	93	K.L.Kolsky+	C2350
α,x	Many	CS	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349
α,x	Many	FY	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349
^{11}B,el	^{92}Mo	DA	2JPNIPC	7.0+07	7.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{10}Be	^{94}Ru	DAP	2JPNIPC	9.0+04	9.0+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{9}Be	^{95}Ru	DAP	2JPNIPC	9.0+04	9.0+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{10}B	^{94}Tc	DAP	2JPNIPC	9.0+04	9.0+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{11}B	^{93}Tc	DAP	2JPNIPC	6.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{11}C	^{93}Mo	DAP	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{13}C	^{91}Mo	DAP	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,^{13}N	^{91}Nb	DAP	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,el	^{92}Mo	DA	2JPNIPC	6.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{12}C,x	Many	DA	2JPNIPC	9.0+07	9.0+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{12}B	^{94}Ru	DAP	2JPNIPC	9.7+04	9.7+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{13}C	^{93}Tc	DAP	2JPNIPC	7.5+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{13}N	^{93}Mo	DAP	2JPNIPC	7.5+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{15}N	^{91}Mo	DAP	2JPNIPC	7.5+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,^{15}O	^{91}Nb	DAP	2JPNIPC	7.5+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,el	^{92}Mo	DA	2JPNIPC	7.5+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 94

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,^{12}B	^{96}Ru	DAP	2JPNIPC	9.7+04	9.7+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 95

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 96

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	Many	CS	1USALAS	8.0+08	8.0+08	Jour	PR/C,48,236	93	K.L.Kolsky+	C2350
α,x	Many	CS	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349
α,x	Many	FY	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349

^{14}N,^{12}B	^{98}Ru	DAP	2JPNIPC	9.7+04	9.7+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 97

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 98

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,^{12}B	^{100}Ru	DAP	2JPNIPC	9.7+04	9.7+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

42 Molybdenum 100

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	Many	CS	1USALAS	8.0+08	8.0+08	Jour	PR/C,48,236	93	K.L.Kolsky+	C2350
α,x	Many	CS	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349
α,x	Many	FY	1USASRE	7.2+08	7.2+08	Jour	PR/C,16,1984	77	T.H.Ku+	C2349
^{14}N,^{12}B	^{102}Ru	DAP	2JPNIPC	9.7+04	9.7+04	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,el	^{100}Mo	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590
^{14}N,x	Many	DA	2JPNIPC	9.7+07	9.7+07	Jour	SCP,69,63	75	M.Yoshie+	E2590

45 Rhodium 103

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,n	^{106}Ag	CS	1USALRL	1.1+07	1.7+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
α,n	^{106}Ag	DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

47 Silver

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	Many	CS	1USAANL	1.2+10	1.2+10	Jour	PR/C,10,2268	74	G.English+	C2351
p,x	Many	CS	1USANAL	3.0+11	3.0+11	Jour	PR/C,10,2281	74	G.English+	C2340
α,n		CS	1USALRL	1.2+07	1.8+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
α,n		DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

47 Silver 107

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,p	^{110}Cd	?	2JPNKTO	3.0+07	3.0+07	Jour	JPJ,17,1526	62	I.Kumabe+	E2236

47 Silver 109

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,2n	^{111}In	?	1USAPUR	1.4+07	1.8+07	Jour	PR,90,460	May 53	E.Bleuler+	P0094
α,n	^{112}In	CS	1USALRL	1.2+07	1.8+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318
α,n	^{112}In	DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

49 Indium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el	^{nat}In	DA	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657
n,el	^{nat}In	POD	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657
α,n		DA	1USALRL	1.4+07	1.4+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

49 Indium 115

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot		CS	4RUSKUR	1.8+06	1.8+06	Rept	YFI-14,8	72	V.M.Morozov+	40075
α,n	^{118}Sb	CS	1USALRL	1.2+07	1.8+07	Jour	PR,136,B1000	64	L.F.Hansen+	C2318

50 Tin

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el	^{nat}Sn	DA	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657
n,el	^{nat}Sn	POD	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657

50 Tin 116

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{116}Sn	DA	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266
α,inel	^{116}Sn	DAP	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266

50 Tin 117

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{117}Sn	DA	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266
α,inel	^{117}Sn	DAP	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266

50 Tin 118

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{118}Sn	DA	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266
α,inel	^{118}Sn	DAP	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266

50 Tin 119

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{119}Sn	DA	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266
α,inel	^{119}Sn	DAP	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266

50 Tin 120

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{120}Sn	DA	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266
α,inel	^{120}Sn	DAP	2JPNTOK	3.4+07	3.4+07	Jour	JPJ,25,14	68	I.Kumabe+	E2266

52 Tellurium 130

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	CS	1USALAS	8.0+08	8.0+08	Jour	PR/C,48,236	93	K.L.Kolsky+	C2350

58 Cerium 140

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{141}Pr	DAP	2JPNTOK	2.7+07	2.7+07	Jour	JPJ,28,291	70	T.Ishimatsu+	E2276

60 Neodymium 142

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

^{3}He,d	^{143}Pm	DAP	2JPNTOK	2.7+07	2.7+07	Jour	JPJ,28,291	70	T.Ishimatsu+	E2276

73 Tantalum 181

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,x+α	inclusive	DAE	1USABRK	6.0+07	9.0+07	Jour	NP/A,122,481	68	G.Chenevert+	C2329

79 Gold 197

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,fis	Many	CS	1USAANL	3.4+07	4.0+07	Jour	PR,140,B863	65	F.L.Lisman+	C2322
α,fis		CS	1USAANL	3.4+07	4.0+07	Jour	PR,140,B863	65	F.L.Lisman+	C2322
α,fis	Many	CS	1USAANL	3.7+07	4.0+07	Jour	PR,140,B863	65	F.L.Lisman+	C2322
α,fis	Many	FY	1USAANL	3.4+07	4.0+07	Jour	PR,140,B863	65	F.L.Lisman+	C2322
α,fis		NU	1USAANL	3.4+07	4.0+07	Jour	PR,140,B863	65	F.L.Lisman+	C2322
α,p	^{200}Hg	DAE	2JPNKTO	3.0+07	3.0+07	Jour	JPJ,17,1526	62	I.Kumabe+	E2236
α,x	^{196}Au	CS	1USABRK	9.0+08	9.0+08	Jour	PR/C,6,1293	72	L.B.Church	C2344
α,x+α	inclusive	DAE	1USABRK	6.0+07	9.0+07	Jour	NP/A,122,481	68	G.Chenevert+	C2329

82 Lead

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,el	$^{\mathrm{nat}}$Pb	DA	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657
n,el	$^{\mathrm{nat}}$Pb	POD	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657

82 Lead 206

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,3n	^{207}Po	CS	1USAANL	3.2+07	4.4+07	Jour	NP/A,151,549	70	P.Wong+	C2330

82 Lead 207

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{3}He,3n	^{207}Po	CS	1USAANL	2.1+07	3.3+07	Jour	NP/A,151,549	70	P.Wong+	C2330

82 Lead 208

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,p	^{208}Tl	CS	4RUSJIA	1.6+07	1.9+07	Jour	JEL,32,482	80	G.E.Belovitskii+	41654
	n,tot		CS	4RUSKUR	1.8+06	1.8+06	Rept	YFI-14,8	72	V.M.Morozov+	40075
*	p,inel	^{208}Pb	CSP	2JPNOSA	3.0+08	3.0+08	Jour	PR/C,85,041304	Apr 12	I.Poltoratska+	E2374
*	p,inel	^{208}Pb	DAP	2JPNOSA	3.0+08	3.0+08	Jour	PR/C,85,041304	Apr 12	I.Poltoratska+	E2374

83 Bismuth 209

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el	^{209}Bi	DA	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657
n,el	^{209}Bi	POD	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657

90 Thorium 232

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,fis		DA	4RUSFEI	7.5+05	1.1+06	Jour	JEL,19,199	74	Kh.D.Androsenko+	41655
α,2p	^{234}Th	CS	1USABRK	2.6+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,4n	^{232}U	CS	1USABRK	2.6+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,5n	^{231}U	CS	1USABRK	4.3+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,fis	Many	CS	1USABRK	1.6+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,fis		CS	1USABRK	1.6+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,fis	Many	CS	1USABRK	2.0+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,fis	Many	FY	1USABRK	1.6+07	4.6+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,p	^{235}Pa	CS	1USABRK	2.2+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,x	^{231}Th	CS	1USABRK	1.5+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,x	^{233}Th	CS	1USABRK	2.0+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,x	^{232}Pa	CS	1USABRK	1.5+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,x	^{233}Pa	CS	1USABRK	1.5+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
α,x	^{234}Pa	CS	1USABRK	2.6+07	4.5+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309

92 Uranium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el	^{nat}U	DA	4RUSKUR	4.0+06	4.0+06	Jour	JEL,12,125	70	V.M.Morozov+	41657

92 Uranium 233

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,2n	^{233}Np	CS	1USABRK	9.0+06	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
d,3n	^{232}Np	CS	1USABRK	1.5+07	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
d,fis	Many	CS	1USABRK	9.0+06	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309

d,fis		CS	1USABRK	9.0+06	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
d,fis	Many	FY	1USABRK	9.0+06	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
d,n	^{234}Np	CS	1USABRK	9.0+06	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309
d,x	^{230}Pa	CS	1USABRK	1.4+07	2.3+07	Jour	PR,116,382	59	B.M.Foremanjr+	C2309

92 Uranium 238

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	4RUSFEI	1.6+06	7.4+06	Jour	JEL,17,257	73	B.I.Fursov+	41656
^{3}He,fis	Many	CS	1USAANL	3.3+07	3.9+07	Jour	PR,172,1186	68	R.H.Iyer+	C2326
^{3}He,fis		CS	1USAANL	3.3+07	3.9+07	Jour	PR,172,1186	68	R.H.Iyer+	C2326
α,fis	Many	CS	1USAANL	3.9+07	3.9+07	Jour	PR,172,1186	68	R.H.Iyer+	C2326
α,fis	Many	FY	1USAANL	3.9+07	3.9+07	Jour	PR,172,1186	68	R.H.Iyer+	C2326
α,fis	^{28}Mg	CS	1USAANL	3.9+07	1.2+08	Jour	PR,172,1186	68	R.H.Iyer+	C2326
α,fis	^{89}Sr	CS	1USAANL	3.9+07	1.2+08	Jour	PR,172,1186	68	R.H.Iyer+	C2326

93 Neptunium 237

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,fis	Many	CS	1USAANL	2.0+07	4.0+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,fis		CS	1USAANL	2.0+07	4.0+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,fis	Many	FY	1USAANL	2.0+07	4.0+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,non		CS	1USAANL	2.0+07	4.0+07	Jour	PR,152,1096	66	J.A.Powers+	C2324

94 Plutonium 239

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	4RUSFEI	1.4+06	7.4+06	Jour	JEL,17,257	73	B.I.Fursov+	41656
α,fis	Many	CS	1USAANL	2.2+07	3.2+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,fis		CS	1USAANL	2.2+07	3.2+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,fis	Many	FY	1USAANL	2.2+07	3.2+07	Jour	PR,152,1096	66	J.A.Powers+	C2324
α,non		CS	1USAANL	2.2+07	3.2+07	Jour	PR,152,1096	66	J.A.Powers+	C2324

94 Plutonium 240

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	4RUSFEI	1.4+06	7.3+06	Jour	JEL,17,257	73	B.I.Fursov+	41656

94 Plutonium 242

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

n,fis		CS	4RUSFEI	1.3+06	7.3+06	Jour	JEL,17,257	73	B.I.Fursov+	41656

97 Berkelium 249

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,2n	^{251}Es	CS	1USABRK	2.4+07	4.0+07	Jour	PR,104,1315	56	B.G.Harvey+	C2319
α,3n	^{250}Es	CS	1USABRK	2.9+07	4.0+07	Jour	PR,104,1315	56	B.G.Harvey+	C2319
α,4n	^{249}Es	CS	1USABRK	3.4+07	4.0+07	Jour	PR,104,1315	56	B.G.Harvey+	C2319
α,n	^{252}Es	CS	1USABRK	2.4+07	4.0+07	Jour	PR,104,1315	56	B.G.Harvey+	C2319