EXFOR News (December 2024)

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, 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 the 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, B. Pritychenko et al., Nucl.Data.Sheets **120**(2014)272.

Quantity codes

ALF	α-value ($\sigma_{\rm capt}/\sigma_{\rm fis}$)	KE	Kinetic energy
AMP	Scattering length	INT	Cross section integral over incident energy
CHG	Fragment charge	KER	Kerma factor
CS	Cross section	MAS	Fragment mass
CSP	Partial cross section	MFQ	Differential fission neutron multiplicity
CST	Temperature dependent cross section	MLT	Multiplicity
D3A	Triple differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'$	NQ	Nuclear quantity
D3E	Triple differential $\mathrm{d}\Omega/\mathrm{d}E'_1/\mathrm{d}E'_2$	NU	Fission neutron multiplicity $\bar{\nu}$
D4A	Quadruple diff. $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'_1/\mathrm{d}E'_2$	NUD	Delayed fission neutron multiplicity $\bar{\nu}_d$
DA	Differential $\mathrm{d}/\mathrm{d}\Omega$	POL	Polarization
DAA	Double differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2$	POD	Differential polarization
DAE	Double differential $\mathrm{d}\Omega/\mathrm{d}E'$	PY	Product yield (other than fission)
DAP	Partial differential $\mathrm{d}/\mathrm{d}\Omega$	RI	Resonance integral
DAT	Temperature-dependent Legendre coefficient	RP	Resonance parameter
DE	Differential $\mathrm{d}/\mathrm{d}E'$	RR	Reaction rate
DEP	Energy spectrum for specific group	SIF	Self indication
DP	Diff. by linear momentum of outgoing part.	SPC	Gamma spectrum
DT	Diff. by 4-momentum transfer squared	TSL	Thermal scattering
ETA	η-value = $\bar{\nu}\sigma_{\rm fis}/(\sigma_{\rm capt}+\sigma_{\rm fis})$	TT	Thick target yield
EVL	Evaluation	TTD	Differential thick target yield, $\mathrm{d}/\mathrm{d}\Omega$
FY	Fission product yield	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) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,π^+	^{2}H	POD	2FR SAC	1.3+09	2.4+09	Jour	NP/A,562,352	93	J.Yonnet+	A0603
	α,el	^{1}H	?	2GERGSI	2.8+09	2.8+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493
	α,non		?	2GERGSI	2.8+09	2.8+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493
	^{6}He,el	^{1}H	?	2GERGSI	4.3+09	4.3+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493
	^{6}He,non		?	2GERGSI	4.3+09	4.3+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493
	^{8}He,el	^{1}H	?	2GERGSI	5.4+09	5.4+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493
	^{8}He,non		?	2GERGSI	5.4+09	5.4+09	Jour	NP/A,712,247	02	S.R.Neumaier+	A0493

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{2}H	POD	2SWTETH	1.0+07	1.0+07	Jour	PL/B,74,173	78	W.Gruebler+	A1131
	d,p	^{3}H	POD	2SWTETH	1.0+06	1.3+07	Jour	NP/A,369,381	81	W.Gruebler+	A1151

1 Hydrogen 3

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{3}H	POD	2GERUEN	4.2+06	1.2+07	Jour	NP/A,263,29	76	R.Kankowsky+	A1129

2 Helium 3

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,ths	^{3}He	?	2GERMUN			Jour	PR/C,108,L031001	23	H.Lu+	23851

2 Helium 4

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,el	^{4}He	POD	2SWTETH	6.0+06	7.0+06	Jour	NP/A,287,237	77	R.A.Hardekopf+	A1130
	α,p	^{7}Li	DAP	1USABRK	4.0+07	4.1+07	Jour	ZP/A,308,15	82	R.J.Slobodrian+	A1238

3 Lithium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x+n	inclusive	TTD	1USADAV	3.5+07	3.5+07	Jour	MED,4,486	77	H.I.Amols+	C1835

	d,x+n	inclusive	TTD	1USANRL	1.3+07	3.4+07	Jour	IRE,22,1776	75	A.N.Goland+	C1927
	d,x+n	inclusive	TTD	1USADAV	3.5+07	3.5+07	Jour	MED,4,486	77	H.I.Amols+	C1835
	d,x+n	inclusive	TTD	1USADAV	3.5+07	3.5+07	Jour	JNM,85-86,467	79	D.L.Johnson+	C1928

3 Lithium 7

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,α	^{4}He	DA	1USAMRY	1.4+06	1.4+06	Jour	NIM,69,115	69	G.M.Lerner+	A1464
	p,el	^{7}Li	DA	1USAMRY	1.4+06	1.4+06	Jour	NIM,69,115	69	G.M.Lerner+	A1464
	p,x+n	inclusive	TTD	1USATNL	1.5+07	1.5+07	Conf	77NBS,,1	77	C.E.Nelson+	C2977
	d,t	^{6}Li	DA	1USAFSU	1.0+07	1.2+07	Jour	NP/A,173,273	71	A.R.Zander+	C2975
	d,x+n	inclusive	TTD	1USATNL	8.0+06	1.5+07	Conf	77NBS,,1	77	C.E.Nelson+	C2977
	t,x+n	inclusive	DA	4RUSEPA	5.4+06	6.1+06	Jour	SNP,30,665	79	S.N.Abramovich+	A0082
	^{3}He,α	^{6}Li	DA	1USAFSU	1.6+07	1.8+07	Jour	NP/A,173,273	71	A.R.Zander+	C2975

4 Berylium 9

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,γ	^{10}Be	CS	1USALAS	Fast		Jour	PR/C,109,014625	24	J.J.Goodell+	14832
	p,x+α	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+α	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+d	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+^{3}He	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+^{3}He	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+n	inclusive	TTD	1USADAV	3.5+07	3.5+07	Jour	MED,4,486	77	H.I.Amols+	C1835
	p,x+t	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	d,x+n	inclusive	TTD	1USAANL	1.4+07	1.6+07	Jour	NT,41,109	78	L.R.Greenwood+	C2976
	d,x+n	inclusive	TTD	1USADAV	3.5+07	3.5+07	Jour	MED,4,486	77	H.I.Amols+	C1835
	d,x+n	inclusive	TTD	1USATNL	3.5+07	3.5+07	Rept	NBSIR-77-1279,31	77	L.S.August+	C2978
	^{3}He,x+n	inclusive	TTD	1USATNL	8.1+07	8.1+07	Rept	NBSIR-77-1279,31	77	L.S.August+	C2978

5 Boron 10

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,α	^{7}Li	CS	2ZZZGEL	1.6+05	3.1+06	Jour	EPJ/CS,146,11010	17	R.Bevilacqua+	23409
*	n,α	^{7}Li	CSP	2ZZZGEL	1.7+05	3.1+06	Jour	EPJ/CS,146,11010	17	R.Bevilacqua+	23409

5 Boron 11

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,α	^{8}Be	CS	1USATNL	1.5+05	3.8+06	Jour	JFE,31,357	12	M.C.Spraker+	C2973
	p,α	^{8}Be	CSP	2GERMST	3.0+05	3.0+05	Jour	ZP/A,327,341	87	H.W.Becker+	A0413
	p,α	^{8}Be	DAP	1USATNL	1.5+05	3.8+06	Jour	JFE,31,357	12	M.C.Spraker+	C2973
	α,el	^{11}B	DA	1USATNL	2.0+06	5.4+06	Jour	JFE,31,357	12	M.C.Spraker+	C2973

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{12}C	CS	1USALAS	4.8+06	1.6+07	Jour	PR/C,108,014603	23	K.J.Kelly+	14820
*	n,inel	^{12}C	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
	p,2^{3}He	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,2^{3}He	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2p+α	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2p+t+α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,3p	^{10}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,3p+α	^{6}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,d+α	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,d+α	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,d+^{3}He+α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,el	^{12}C	POD	2GERKLN	3.5+06	7.5+06	Jour	NIM/A,327,441	93	L.Sydow+	A0511
	p,^{3}He+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,^{3}He+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+2α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+2d+α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+^{6}Li	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,p+^{6}Li	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+d	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,p+d	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+d+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+d+^{3}He	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+d+t	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+d+t+^{3}He	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,p+^{3}He	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,t+^{3}He	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,t+^{3}He	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,x+α	inclusive	CSP	4ZZZDUB	6.6+08	6.6+08	Rept	JINR-1-7653	73	V.I.Bogatin+	A0020
	p,x+α	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+α	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+d	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+d	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+^{3}He	inclusive	CSP	4ZZZDUB	6.6+08	6.6+08	Rept	JINR-1-7653	73	V.I.Bogatin+	A0020
	p,x+^{3}He	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+^{3}He	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+t	inclusive	CSP	4ZZZDUB	6.6+08	6.6+08	Rept	JINR-1-7653	73	V.I.Bogatin+	A0020
	p,x+t	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
	p,x+t	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030

7 Nitrogen 14

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,2α	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,2d	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2d+α	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2d+^{3}He+α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2^{3}He	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018

p,2p	^{13}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+^{6}He	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+2d	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+α	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+d+α	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+^{3}He	^{10}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+t	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+t+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,3p+^{6}He	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,3p+d	^{10}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,3p+t	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,4p	^{11}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+^{6}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,d+^{6}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+^{3}He	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+^{3}He+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+t	^{10}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,d+t	^{10}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,^{3}He+2α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,^{3}He+^{6}Li	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+2α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+2d	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+2d+α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{7}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+^{7}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+α	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+α	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+d+2α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+^{6}Li	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+^{3}He	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{3}He	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+^{3}He	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{3}He+α	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+t	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+t	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+t+^{3}He+α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050

7 Nitrogen 15

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,0		RP	1USACOL			Jour	PR,122,232	61	H.Smotrich+	C0755

8 Oxygen 16

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{13}C	CSP	1USALAS	3.8+06	1.5+07	Jour	PR/C,109,014601	24	H.Y.Lee+	14833
*	n,α	^{13}C	DAP	1USALAS	3.7+06	1.5+07	Jour	PR/C,109,014601	24	H.Y.Lee+	14833
	p,2d	^{13}N	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
	p,2d	^{13}N	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
	p,2^{3}He	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018

p,2^{3}He	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p	^{15}N	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+2α	^{7}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+α	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+d	^{13}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+d+α	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,2p+t	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,3p	^{14}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,3p+α	^{10}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,α+^{6}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,α+^{6}Li	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+2α	^{7}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+α	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,d+α	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+^{3}He	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,d+^{3}He	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,d+^{3}He+2α	^{4}He	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,^{3}He+2α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,^{3}He+α	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+^{6}He	^{10}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+2d	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{6}Li	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+^{6}Li	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{7}Be	^{9}Be	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+α	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+α	^{12}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d	^{14}N	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+d	^{14}N	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+2α	^{6}Li	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+α	^{10}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+^{3}He	^{11}B	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+d+t	^{11}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,p+^{3}He	^{13}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+t	^{13}N	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,p+t	^{13}N	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
p,t+α	^{10}C	CS	4RUSITE	5.0+07	5.0+07	Jour	SNP,27,3	78	I.G.Golikov+	A0018
p,t+α	^{10}C	CS	4RUSITE	5.0+07	5.0+07	Jour	BAS,43,(1),124	79	A.I.Vdovin+	A0050
^{12}C,x	^{22}Ne	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{21}Na	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{22}Na	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{23}Na	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{24}Na	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{25}Na	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{23}Mg	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{24}Mg	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{25}Mg	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{26}Mg	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{25}Al	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{12}C,x	^{26}Al	CS	2JPNJAE	3.0+07	5.6+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{21}Ne	CS	2JPNJAE	4.0+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{22}Ne	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{22}Na	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{23}Na	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{24}Na	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{25}Na	CS	2JPNJAE	5.4+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{24}Mg	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{25}Mg	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381

^{16}O,x	^{26}Mg	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{26}Al	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{27}Al	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{28}Al	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{28}Si	CS	2JPNJAE	3.5+07	6.5+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381
^{16}O,x	^{29}Si	CS	2JPNJAE	3.5+07	5.4+07	Jour	NP/A,456,298	86	H.Ikezoe+	A0381

9 Fluorine 19

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,α	^{16}O	DA	1USAMRY	1.4+06	1.4+06	Jour	NIM,69,115	69	G.M.Lerner+	A1464
p,el	^{19}F	DA	1USAMRY	1.4+06	1.4+06	Jour	NIM,69,115	69	G.M.Lerner+	A1464

12 Magnesium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{20}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{20}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
p,x	^{21}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{22}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{22}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
p,x	^{22}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{24}Na	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x+α	inclusive	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x+α	inclusive	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344

13 Aluminium 27

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{7}Be	CS	4RUSFVE	3.0+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
p,x	^{20}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{20}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
p,x	^{21}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{22}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{22}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
p,x	^{22}Na	CS	4RUSFVE	2.5+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
p,x	^{22}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{22}Na	?	4ZZZDUB			Jour	JET,5,148	57	Ju.D.Prokoshkin+	A0065
p,x	^{24}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x+α	inclusive	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x+α	inclusive	DAE	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
p,x+α	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
p,x+d	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
p,x+^{3}He	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
p,x+^{3}He	inclusive	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
p,x+t	inclusive	DAP	4ZZZDUB	6.6+08	6.6+08	Jour	SNP,25,1	77	V.V.Avdejchikov+	A0030
^{3}He,x	^{24}Na	CS	4UKRIJD	1.8+07	9.1+07	Jour	ARI,48,601	97	S.N.Kondratyev+	A0606

α,3p	^{28}Mg	CS	3INDVEC	4.4+07	4.9+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,3p	^{28}Mg	CS	4UKRIJD	5.2+07	9.2+07	Conf	89TASHKE,,365	89	O.N.Vysotskiy+	A0424
α,x	^{24}Na	CS	4ZZZDUB	1.5+10	1.5+10	Jour	KE,29,(2),64	86	V.P.Bamblevski	A0242
α,x	^{24}Na	CS	3INDVEC	4.4+07	4.9+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{24}Na	CS	4UKRIJD	5.2+07	9.2+07	Conf	89TASHKE,,365	89	O.N.Vysotskiy+	A0424
^{6}Li,x	^{24}Na	CS	2GERKFK	2.8+07	1.5+08	Jour	RCA,33,181	83	H.Klewe-Nebenius+	A0285
^{12}C,x	^{24}Na	CS	4ZZZDUB	4.4+10	4.4+10	Jour	KE,29,(2),64	86	V.P.Bamblevski	A0242

14 Silicon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{7}Be	CS	4RUSFVE	3.0+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x	^{20}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
	p,x	^{20}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
	p,x	^{21}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
	p,x	^{22}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
	p,x	^{22}Ne	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
	p,x	^{22}Na	CS	4RUSFVE	2.5+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x	^{22}Na	CS	4UKRIJD	2.6+07	6.6+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
	p,x	^{22}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
	p,x	^{24}Na	CS	4UKRIJD	2.6+07	6.6+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
	p,x	^{24}Na	CS	4RUSFVE	3.0+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x	^{24}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
	p,x	^{27}Mg	CS	4RUSFVE	3.6+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x	^{28}Mg	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
	p,x	^{28}Al	CS	4RUSFVE	2.0+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x	^{29}Al	CS	4RUSFVE	2.0+07	9.9+07	Jour	SJA,64,511	88	V.N.Aleksandrov+	A0340
	p,x+α	inclusive	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
	p,x+α	inclusive	?	2ZZZCER	6.0+08	6.0+08	Jour	NIM/B,16,61	86	R.Michel+	A0344
	α,x	^{22}Na	CS	4UKRIFU	4.9+07	9.5+07	Jour	IZK,,(2),43	90	O.N.Vysotskiy+	A0423
	α,x	^{24}Na	CS	4UKRIFU	4.9+07	9.5+07	Jour	IZK,,(2),43	90	O.N.Vysotskiy+	A0423
	α,x	^{28}Mg	CS	4UKRIFU	5.8+07	9.5+07	Jour	IZK,,(2),43	90	O.N.Vysotskiy+	A0423

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,p	^{31}P	DAP	1USAPUR	1.9+07	1.9+07	Jour	PR,124,818	61	W.D.Ploughe+	T0263

17 Chlorine 35

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{32}P	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,α	^{32}P	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{35}Cl	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{35}Cl	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,p	^{35}S	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,p	^{35}S	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790

17 Chlorine 37

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{37}Cl	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{37}Cl	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790

19 Potassium 39

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{39}K	DA	1USAROC	3.1+07	3.1+07	Jour	NP/A,281,405	77	R.N.Boyd+	C2985
α,inel	^{39}K	DAP	1USAROC	3.1+07	3.1+07	Jour	NP/A,281,405	77	R.N.Boyd+	C2985

19 Potassium 41

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{42}Ca	DAP	1USAROC	2.0+07	2.0+07	Jour	PR/C,6,1411	72	A.Jamshidi+	C2981

20 Calcium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{24}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{28}Mg	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{42}K	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{47}Ca	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{44}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{46}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}Sc	CS	1USALAS	1.2+09	1.2+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478

20 Calcium 40

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,inel	^{40}Ca	DAP	1USAROC	2.4+07	2.4+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983

20 Calcium 41

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{41}Ca	DA	1USAROC	2.4+07	2.4+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983

α,inel	^{41}Ca	DAP	1USAROC	2.4+07	2.4+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983

20 Calcium 42

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,inel	^{42}Ca	DAP	1USAROC	2.8+07	2.8+07	Jour	PR/C,6,1411	72	A.Jamshidi+	C2981

20 Calcium 43

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
d,t	^{42}Ca	DAP	1USAROC	2.0+07	2.0+07	Jour	PR/C,6,1411	72	A.Jamshidi+	C2981
α,el	^{43}Ca	DA	1USAROC	2.6+07	2.6+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983
α,inel	^{43}Ca	DAP	1USAROC	2.6+07	2.6+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983

20 Calcium 44

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,el	^{44}Ca	DA	1USAROC	2.6+07	2.6+07	Jour	PR/C,10,1798	74	M.J.A.Devoigt+	C2983

21 Scandium 45

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{6}He,α	^{47}Sc	CS	4ZZZDUB	2.1+07	2.3+07	Jour	JP/G,38,035106	11	N.K.Skobelev+	A0881

22 Titanium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{22}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{24}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{28}Mg	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{42}K	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{43}K	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{47}Ca	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{44}Sc	CS	2GERJUL	1.1+07	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{46}Sc	CS	2GERJUL	8.0+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{46}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{47}Sc	CS	2GERJUL	1.1+07	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{47}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}V	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478

22 Titanium 48

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,inel	^{48}Ti	DAP	1USAROC	2.8+07	2.8+07	Jour	PR/C,8,1796	73	A.Jamshidi+	C2982

22 Titanium 49

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,t	^{48}Ti	DAP	1USAROC	1.8+07	1.8+07	Jour	PR/C,8,1796	73	A.Jamshidi+	C2982

23 Vanadium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{22}Na	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{24}Na	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{28}Mg	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{42}K	CS	1USALAS	1.2+09	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{43}K	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{47}Ca	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{46}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{47}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}Sc	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}V	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{48}Cr	CS	1USALAS	1.2+09	1.2+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478
p,x	^{51}Cr	CS	1USALAS	8.0+08	2.6+09	Prog	INDC(GER)-035/LN,46	90	B.Dittrich+	A0478

24 Chromium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,x	^{48}V	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468
α,x	^{49}Cr	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468
α,x	^{51}Cr	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468
α,x	^{52}Mn	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468
α,x	^{54}Mn	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468
α,x	^{55}Fe	TT	2UK BIR	2.0+07	3.8+07	Jour	ARI,39,1197	88	J.Zweit+	A0468

24 Chromium 52

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,$2n$	^{51}Mn	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,x	^{51}Cr	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

25 Manganese 55

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{52}Mn	CS	2GERJUL	2.7+07	4.5+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{54}Mn	CS	2GERJUL	9.3+06	4.5+07	Jour	JRC,59,467	80	R.Michel+	A0145

26 Iron

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{51}Cr	CS	2GERJUL	1.3+07	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{51}Cr	CS	4UKRIJD	2.3+07	6.4+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
p,x	^{52}Mn	CS	4UKRIJD	1.9+07	6.4+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
p,x	^{54}Mn	CS	3CPRAEP	1.4+07	1.9+07	Jour	CNP,15,337	93	Zhao Wenrong+	A0600
p,x	^{54}Mn	CS	2GERJUL	1.6+07	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{54}Mn	CS	4UKRIJD	7.1+06	6.4+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
p,x	^{55}Co	CS	3CPRAEP	1.6+07	1.9+07	Jour	CNP,15,337	93	Zhao Wenrong+	A0600
p,x	^{56}Co	CS	4UKRIJD	7.1+06	6.4+07	Jour	SJA,63,528	87	I.F.Barchuk+	A0339
p,x	^{56}Co	CS	2GERJUL	7.4+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{57}Co	CS	2GERJUL	3.4+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{57}Co	CS	3CPRAEP	4.7+06	1.9+07	Jour	CNP,15,337	93	Zhao Wenrong+	A0600
^{3}He,x	^{56}Co	TT	3SAFNLP	2.5+07	2.5+07	Jour	ARI,28,561	77	R.D.Neirinckx	A0140
^{3}He,x	^{57}Co	TT	3SAFNLP	2.5+07	2.5+07	Jour	ARI,28,561	77	R.D.Neirinckx	A0140
^{3}He,x	^{58}Co	TT	3SAFNLP	2.5+07	2.5+07	Jour	ARI,28,561	77	R.D.Neirinckx	A0140

26 Iron 56

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,2n	^{55}Co	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,x	^{55}Fe	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
^{3}He,3n	^{56}Ni	TT	3SAFNLP	2.5+07	2.5+07	Jour	ARI,28,561	77	R.D.Neirinckx	A0140

27 Cobalt 59

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{57}Co	CS	2GERJUL	1.5+07	1.5+07	Jour	JRC,59,467	80	R.Michel+	A0145
α,x	^{56}Co	CS	3INDVEC	3.8+07	5.4+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,x	^{57}Co	CS	3INDVEC	3.3+07	5.4+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,x	^{58}Co	CS	3INDVEC	2.8+07	5.4+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,x	^{60}Co	CS	3INDVEC	3.3+07	5.4+07	Jour	PRM,30,193	88	M.Ismail+	A0442

28 Nickel

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{20}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{21}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{22}Ne	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{36}Ar	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{38}Ar	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
p,x	^{55}Co	CS	2GERJUL	7.8+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{57}Co	CS	2GERJUL	7.8+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{58}Co	CS	2GERJUL	7.8+06	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x	^{57}Ni	CS	2GERJUL	1.3+07	1.6+07	Jour	JRC,59,467	80	R.Michel+	A0145
p,x+α	inclusive	CS	1USALAS	8.0+08	2.6+09	Prog	NEANDC(E)-312,(5),53	90	B.Dittrich+	A0481
α,x	^{57}Co	?	2GERKFK	1.7+07	8.6+07	Jour	JRN,139,15	90	O.A.Capurro+	A0483
α,x	^{58}Co	?	2GERKFK	2.1+07	8.6+07	Jour	JRN,139,15	90	O.A.Capurro+	A0483
α,x	^{60}Co	?	2GERKFK	2.9+07	8.6+07	Jour	JRN,139,15	90	O.A.Capurro+	A0483

28 Nickel 58

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,α+X	Many	CSP	4RUSLIN	1.0+09	1.0+09	Jour	JEL,28,42	78	E.N.Vol'Nin+	A0025
p,x	^{57}Ni	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
α,inel	^{58}Ni	DAP	2FR STR	3.0+07	3.0+07	Jour	PR/C,15,1156	77	G.Guillaume+	C2986
α,inel	^{58}Ni	DAP	1USAROC	3.0+07	3.0+07	Jour	PR/C,15,1156	77	G.Guillaume+	C2986

28 Nickel 60

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,2n	^{59}Cu	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,x	^{59}Ni	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

29 Copper

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{44}Sc	CS	3SAFNAC	1.6+08	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{46}Sc	CS	3SAFNAC	1.4+08	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{48}V	CS	3SAFNAC	1.1+08	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{49}Cr	CS	3SAFNAC	1.8+08	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{51}Cr	CS	3SAFNAC	5.6+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{52}Mn	CS	3SAFNAC	7.1+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{54}Mn	CS	3SAFNAC	4.4+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{56}Mn	CS	3SAFNAC	5.2+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{52}Fe	CS	3SAFNAC	1.1+08	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{59}Fe	CS	3SAFNAC	4.6+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{55}Co	CS	3SAFNAC	6.8+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{56}Co	CS	3SAFNAC	4.4+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507

p,x	^{57}Co	CS	3SAFNAC	2.8+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{58}Co	CS	3SAFNAC	2.4+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{57}Ni	CS	3SAFNAC	4.4+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{60}Cu	CS	3SAFNAC	3.6+07	1.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{61}Cu	CS	3SAFNAC	2.4+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{64}Cu	CS	3SAFNAC	1.6+07	1.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{63}Zn	CS	3SAFNAC	1.1+07	1.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
p,x	^{65}Zn	CS	3SAFNAC	1.1+07	2.0+08	Jour	ARI,43,1019	92	S.J.Mills+	A0507
α,x	^{58}Co	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{61}Cu	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{64}Cu	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{65}Zn	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{66}Ga	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{67}Ga	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
^{12}C,x	^{58}Co	CS	1USAMSU	1.1+09	1.1+09	Jour	PR/C,47,1636	93	J.P.Whitfield+	T0201
^{12}C,x	^{58}Co	CS	1USAANL	1.5+08	1.5+08	Jour	PR/C,39,2227	89	S.Y.Cho+	T0200
^{12}C,x	^{58}Co	CS	1USAMSU	2.8+08	5.3+08	Jour	PR/C,39,2227	89	S.Y.Cho+	T0200

29 Copper 63

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,x	^{58}Co	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{61}Cu	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353

29 Copper 65

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,2n	^{67}Ga	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,3n	^{66}Ga	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
α,x	^{65}Zn	CS	3INDVEC	4.7+07	4.7+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353

30 Zinc 64

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,2n	^{66}Ge	CS	4RUSSUL	2.1+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421
α,n	^{67}Ge	CS	4RUSSUL	1.5+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421
α,x	^{63}Zn	CS	4RUSSUL	2.1+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421
α,x	^{66}Ga	CS	4RUSSUL	1.8+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421

30 Zinc 66

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,x	^{68}Ga	CS	4RUSSUL	1.6+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421

30 Zinc 68

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,n	^{68}Ga	CS	4RUSFEI	7.5+06	9.0+06	Rept	FEI-1141,1	80	G.V.Kotel'Nikova+	A0223

30 Zinc 70

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,p	^{73}Ga	CS	4RUSSUL	1.5+07	2.4+07	Conf	89TASHKE,,350	89	N.N.Abuissa+	A0421

31 Gallium 84

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,β^-	^{84}Ge	NUD	2JPNIPC	Decay		Jour	PR/C,108,064307	23	R.Yokoyama+	23905

31 Gallium 85

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,β^-	^{85}Ge	NUD	2JPNIPC	Decay		Jour	PR/C,108,064307	23	R.Yokoyama+	23905

31 Gallium 86

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,β^-	^{86}Ge	NUD	2JPNIPC	Decay		Jour	PR/C,108,064307	23	R.Yokoyama+	23905

31 Gallium 87

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,β^-	^{87}Ge	NUD	2JPNIPC	Decay		Jour	PR/C,108,064307	23	R.Yokoyama+	23905

32 Germanium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,x	^{75}Se	TT	4RUSFEI	1.5+07	4.4+07	Jour	SJA,34,499	73	P.P.Dmitriev+	A0022

32 Germanium 72

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{69}Zn	CS	2GRCATH	1.8+07	1.8+07	Jour	ARI,203,111077	24	S.Chasapoglou+	23907
*	n,p	^{72}Ga	CS	2GRCATH	1.8+07	1.8+07	Jour	ARI,203,111077	24	S.Chasapoglou+	23907

32 Germanium 76

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	$n,2n$	^{75}Ge	CS	2GRCATH	1.8+07	1.8+07	Jour	ARI,203,111077	24	S.Chasapoglou+	23907

33 Arsenic 75

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$\alpha,2n$	^{77}Br	TT	4RUSFEI	2.2+07	4.4+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122

34 Selenium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{77}Br	TT	2JPNTOK	1.0+07	5.0+07	Jour	ARI,30,79	79	T.Nozaki+	A0184
p,x	^{77}Br	TT	4RUSFEI	8.5+06	2.2+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122
p,x	^{82}Br	TT	2JPNTOK	1.0+07	2.5+07	Jour	ARI,30,79	79	T.Nozaki+	A0184
p,x	^{82}Br	TT	4RUSFEI	8.5+06	2.2+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122
d,x	^{77}Br	TT	4RUSFEI	9.0+06	2.2+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122
d,x	^{82}Br	TT	4RUSFEI	9.0+06	2.2+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122
α,x	^{77}Br	TT	4RUSFEI	1.8+07	4.3+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122
α,x	^{82}Br	TT	4RUSFEI	1.8+07	4.3+07	Jour	SJA,52,99	82	P.P.Dmitriev+	A0122

35 Bromine

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{76}Br	TT	2JPNTOK	4.0+07	5.0+07	Jour	ARI,30,79	79	T.Nozaki+	A0184
p,x	^{77}Br	TT	2JPNTOK	2.5+07	5.0+07	Jour	ARI,30,79	79	T.Nozaki+	A0184

35 Bromine 87

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{87}Kr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

35 Bromine 88

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	$0,\beta^-$	^{88}Kr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

35 Bromine 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	$0,\beta^-$	^{89}Kr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

36 Krypton

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{82}Rb	CS	2GERJUL	5.0+06	2.9+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489
	p,x	^{83}Rb	CS	2GERJUL	5.0+06	2.9+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489
	p,x	^{84}Rb	CS	2GERJUL	5.0+06	2.9+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489

36 Krypton 82

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,n	^{82}Rb	CS	2GERJUL	6.0+06	3.0+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489

36 Krypton 83

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{84}Kr	CS	1USALAS	Maxwl		Jour	EPJ/A,59,36	23	S.Fiebiger+	14831
*	n,γ	^{84}Kr	?	1USALAS	2.6-02	1.7+05	Jour	EPJ/A,59,36	23	S.Fiebiger+	14831
	$p,2n$	^{82}Rb	CS	2GERJUL	1.3+07	3.0+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489
	p,n	^{83}Rb	CS	2GERJUL	6.0+06	3.0+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489

36 Krypton 84

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	$p,2n$	^{83}Rb	CS	2GERJUL	1.3+07	3.0+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489
	p,n	^{84}Rb	CS	2GERJUL	5.0+06	3.0+07	Jour	ARI,42,329	91	Z.Kovacs+	A0489

37 Rubidium 92

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{92}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

37 Rubidium 93

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{93}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

37 Rubidium 94

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{94}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

37 Rubidium 95

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{95}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

37 Rubidium 96

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{96}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

37 Rubidium 97

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{97}Sr	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

38 Strontium 88

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{89}Sr	CS	2JPNTIT		5.1+05	Jour	PR/C,108,034610	23	T.Katabuchi+	23852
*	n,γ	^{89}Sr	MLT	2JPNTIT	1.2+04	5.1+05	Jour	PR/C,108,034610	23	T.Katabuchi+	23852

39 Yttrium 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{88}Y	CS	2SWDUPP	3.6+07	4.8+07	Jour	EPJ/CS,146,11032	17	M.Bielewicz+	23903
*	n,3n	^{87}Y	CS	2SWDUPP	3.6+07	4.8+07	Jour	EPJ/CS,146,11032	17	M.Bielewicz+	23903
*	n,4n	^{86}Y	CS	2SWDUPP	3.6+07	4.8+07	Jour	EPJ/CS,146,11032	17	M.Bielewicz+	23903

40 Zirconium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{88}Y	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
p,x	^{89}Zr	TT	4RUSFEI	1.7+07	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
p,x	^{91}Nb	TT	4RUSFEI	1.6+07	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
p,x	^{92}Nb	TT	4RUSFEI	6.1+06	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
p,x	^{95}Nb	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{88}Y	TT	4RUSFEI	7.4+06	2.3+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{89}Zr	TT	4RUSFEI	9.6+06	2.3+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{95}Zr	TT	4RUSFEI	6.2+06	2.3+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{91}Nb	TT	4RUSFEI	6.2+06	4.5+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{92}Nb	TT	4RUSFEI	7.4+06	4.5+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
d,x	^{95}Nb	TT	4RUSFEI	7.4+06	2.3+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294

40 Zirconium 90

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,2n	^{89}Nb	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,x	^{89}Zr	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

40 Zirconium 91

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,2n	^{90}Nb	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

40 Zirconium 94

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,2n	^{93}Nb	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,3n	^{92}Nb	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

41 Niobium 93

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,inel	^{93}Nb	CS	2GERPTB	Fiss		Conf	82GAITHERS,1,433	82	W.G.Alberts+	14827
	p,x	^{92}Nb	TT	4RUSFEI	1.3+07	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
	d,x	^{92}Nb	TT	4RUSFEI	7.4+06	2.2+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
	α,2n	^{95}Tc	TT	4RUSFEI	1.9+07	4.5+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
	α,n	^{96}Tc	TT	4RUSFEI	1.3+07	4.5+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294

42 Molybdenum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2ZZZGEL	3.0+00	3.0+05	Jour	NIM/B,531,100	22	R.Mucciola+	23658

42 Molybdenum 92

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658

42 Molybdenum 94

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658

42 Molybdenum 95

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658
	p,x+n	inclusive	DAE	4RUSFEI	9.0+06	9.0+06	Jour	SNP,36,174	82	A.M.Trufanov+	A0164
	p,x+n	inclusive	DAP	4RUSFEI	7.0+06	9.0+06	Jour	SNP,36,174	82	A.M.Trufanov+	A0164

42 Molybdenum 96

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658

42 Molybdenum 97

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658

42 Molybdenum 98

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658
	p,x+n	inclusive	DAE	4RUSFEI	9.0+06	9.0+06	Jour	SNP,36,174	82	A.M.Trufanov+	A0164
	p,x+n	inclusive	DAP	4RUSFEI	6.0+06	9.0+06	Jour	SNP,36,174	82	A.M.Trufanov+	A0164

42 Molybdenum 100

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Jour	NIM/B,531,100	22	R.Mucciola+	23658

47 Silver 107

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Rept	INDC(EUR)-0036	20	L.Salamon+	23533
*	n,γ	^{108}Ag	CS	2ZZZGEL	2.5-02	2.5-02	Rept	INDC(EUR)-0036	20	L.Salamon+	23533
*	n,γ	^{108}Ag	RI	2ZZZGEL	5.0-01	1.0+03	Rept	INDC(EUR)-0036	20	L.Salamon+	23533

47 Silver 109

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZGEL			Rept	INDC(EUR)-0036	20	L.Salamon+	23533
*	n,γ	^{110}Ag	CS	2ZZZGEL	2.5-02	2.5-02	Rept	INDC(EUR)-0036	20	L.Salamon+	23533
*	n,γ	^{110}Ag	RI	2ZZZGEL	5.0-01	1.0+03	Rept	INDC(EUR)-0036	20	L.Salamon+	23533

48 Cadmium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{114}In	CS	4UKRIJD	1.4+07	6.2+07	Jour	ARI,41,177	90	N.G.Zaitseva+	A0569

48 Cadmium 112

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{113}In	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,9,1633	74	R.G.Markham+	C2984
α,t	^{113}In	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,9,1633	74	R.G.Markham+	C2984

48 Cadmium 113

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,γ	^{114}In	TT	4UKRIJD	5.8+06	4.9+07	Jour	ARI,41,177	90	N.G.Zaitseva+	A0569

48 Cadmium 114

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,n	^{114}In	CS	4UKRIJD	9.2+06	6.2+07	Jour	ARI,41,177	90	N.G.Zaitseva+	A0569

49 Indium 115

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,2n	^{114}Sn	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,3n	^{113}Sn	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,t	^{113}In	DAP	1USAROC	1.9+07	1.9+07	Jour	PR/C,9,1633	74	R.G.Markham+	C2984
p,x	^{114}In	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068

50 Tin

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{118}Sb	TT	4UZ UZB	8.0+06	1.2+07	Jour	SJA,49,540	80	A.V.Muminov+	A0085
p,x	^{120}Sb	TT	4UZ UZB	8.0+06	1.2+07	Jour	SJA,49,540	80	A.V.Muminov+	A0085
α,x	^{119}Te	TT	4RUSFEI	1.8+07	4.4+07	Jour	SJA,55,707	83	P.P.Dmitriev+	A0199
α,x	^{121}Te	TT	4RUSFEI	1.8+07	4.4+07	Jour	SJA,55,707	83	P.P.Dmitriev+	A0199
α,x	^{123}Te	TT	4RUSFEI	1.8+07	4.4+07	Jour	SJA,55,707	83	P.P.Dmitriev+	A0199
α,x	^{123}Te	TT	4RUSFEI	4.4+07	4.4+07	Jour	SJA,42,168	77	P.P.Dmitriev+	A0017

50 Tin 112

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,x	^{8}He	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{6}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{7}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136

α,x	^{8}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{9}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{11}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136

50 Tin 116

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{64}Ni,fis		CS	2BLGLVN	3.8+08	3.8+08	Jour	PR/C,69,044611	04	V.Roberfroid+	A0816
^{64}Ni,fus		CS	2BLGLVN	3.8+08	3.8+08	Jour	PR/C,69,044611	04	V.Roberfroid+	A0816

50 Tin 122

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{58}Ni,fis		CS	2BLGLVN	3.8+08	3.8+08	Jour	PR/C,69,044611	04	V.Roberfroid+	A0816
^{58}Ni,fus		CS	2BLGLVN	3.8+08	3.8+08	Jour	PR/C,69,044611	04	V.Roberfroid+	A0816

50 Tin 124

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,x	^{8}He	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{6}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{7}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{8}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{9}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136
α,x	^{11}Li	?	4ZZZDUB	1.5+07	1.5+07	Jour	SNP,36,19	82	V.I.Bogatin+	A0136

51 Antimony

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{3}He,x	^{123}I	CS	2UK HHL	1.2+07	2.6+07	Jour	JIN,35,3047	73	I.A.Watson+	A0238
^{3}He,x	^{124}I	CS	2UK HHL	1.2+07	2.6+07	Jour	JIN,35,3047	73	I.A.Watson+	A0238
α,x	^{124}I	CS	2UK HHL	9.7+06	2.8+07	Jour	JIN,35,3047	73	I.A.Watson+	A0238
α,x	^{124}I	TT	4RUSFEI	1.6+07	4.4+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{125}I	TT	4RUSFEI	1.6+07	4.4+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{126}I	TT	4RUSFEI	1.6+07	4.4+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078

51 Antimony 123

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,n	^{123}Te	TT	4RUSFEI	7.1+06	2.2+07	Jour	SJA,42,168	77	P.P.Dmitriev+	A0017
d,2n	^{123}Te	TT	4RUSFEI	7.1+06	2.2+07	Jour	SJA,42,168	77	P.P.Dmitriev+	A0017

52 Tellurium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{124}I	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
p,x	^{125}I	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
p,x	^{126}I	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
p,x	^{130}I	TT	4RUSFEI	9.8+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
d,x	^{124}I	TT	4RUSFEI	9.5+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
d,x	^{125}I	TT	4RUSFEI	9.5+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
d,x	^{126}I	TT	4RUSFEI	9.5+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
d,x	^{130}I	TT	4RUSFEI	9.5+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
d,x	^{131}I	TT	4RUSFEI	9.5+06	2.2+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{124}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{125}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{126}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{130}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{131}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078
α,x	^{132}I	TT	4RUSFEI	1.9+07	4.3+07	Jour	SJA,49,789	80	P.P.Dmitriev+	A0078

52 Tellurium 122

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,x	^{123}I	TT	1USABNL	4.3+07	4.3+07	Jour	ARI,26,703	75	M.Guillaume+	A0326

52 Tellurium 123

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,x	^{123}I	TT	1USABNL	2.4+07	3.9+07	Jour	ARI,26,703	75	M.Guillaume+	A0326

52 Tellurium 124

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,x	^{123}I	TT	1USABNL	3.2+07	5.2+07	Jour	ARI,26,703	75	M.Guillaume+	A0326

53 Iodine 137

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
0,β^-	^{137}Xe	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

53 Iodine 138

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{138}Xe	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

55 Cesium 141

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{141}Ba	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

55 Cesium 142

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{142}Ba	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

55 Cesium 143

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{143}Ba	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

55 Cesium 144

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{144}Ba	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

55 Cesium 145

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
$0,\beta^-$	^{145}Ba	NUD	1USABNW	Decay		Jour	PR/C,15,2108	77	P.L.Reeder+	14828

56 Barium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{136}La	TT	4UZ UZB	8.0+06	1.2+07	Jour	SJA,49,540	80	A.V.Muminov+	A0085

58 Cerium 136

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{136}Ce	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{136}Ce	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790

58 Cerium 140

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{140}Ce	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{140}Ce	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790

58 Cerium 142

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{142}Ce	CSP	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790
*	n,inel	^{142}Ce	?	2GERMUN	Fast		Jour	JRN,332,3133	23	N.Ophoven+	23790

59 Praesodymium 141

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{12}C,4n	^{149}Tb	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,5n	^{148}Tb	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{147}Tb	CS	2FR GRE	8.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,7n	^{146}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{141}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{142}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{142}Pm	CS	2FR GRE	8.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{143}Pm	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{144}Pm	CS	2FR GRE	7.7+07	8.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{144}Sm	CS	2FR GRE	9.4+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{145}Sm	CS	2FR GRE	8.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{146}Sm	CS	2FR GRE	7.7+07	8.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{143}Eu	CS	2FR GRE	9.4+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{145}Eu	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{146}Eu	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Eu	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Eu	CS	2FR GRE	7.7+07	8.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{146}Gd	CS	2FR GRE	9.4+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Gd	CS	2FR GRE	8.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Gd	CS	2FR GRE	7.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Gd	CS	2FR GRE	7.7+07	8.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,3n	^{152}Dy	CS	2FR GRE	6.0+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,4n	^{151}Dy	CS	2FR GRE	6.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,5n	^{150}Dy	CS	2FR GRE	6.0+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{14}N,6n	^{149}Dy	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,8n	^{147}Dy	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{139}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{140}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{141}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{142}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{143}Nd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{141}Pm	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{142}Pm	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{143}Pm	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{144}Pm	CS	2FR GRE	8.8+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{143}Sm	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{144}Sm	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{145}Sm	CS	2FR GRE	6.0+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Sm	CS	2FR GRE	6.0+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{145}Eu	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Eu	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Eu	CS	2FR GRE	6.0+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Eu	CS	2FR GRE	6.0+07	6.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{145}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Gd	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Gd	CS	2FR GRE	6.0+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{150}Gd	CS	2FR GRE	6.0+07	6.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Tb	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Tb	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Tb	CS	2FR GRE	6.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Tb	CS	2FR GRE	6.0+07	7.2+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Tb	CS	2FR GRE	6.0+07	6.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

62 Samarium 144

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,3n	^{153}Er	CS	2FR GRE	7.4+07	9.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,4n	^{152}Er	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,5n	^{151}Er	CS	2FR GRE	8.2+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{150}Er	CS	2FR GRE	9.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{145}Gd	CS	2FR GRE	9.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{146}Gd	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Gd	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Gd	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Gd	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Tb	CS	2FR GRE	9.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Tb	CS	2FR GRE	8.2+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Tb	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Tb	CS	2FR GRE	7.4+07	8.2+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Dy	CS	2FR GRE	1.0+08	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Dy	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Dy	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Dy	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Dy	CS	2FR GRE	7.4+07	9.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Dy	CS	2FR GRE	7.4+07	7.4+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Dy	CS	2FR GRE	7.4+07	7.4+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{12}C,x	^{149}Ho	CS	2FR GRE	1.0+08	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Ho	CS	2FR GRE	9.0+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Ho	CS	2FR GRE	7.4+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Ho	CS	2FR GRE	7.4+07	9.0+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Ho	CS	2FR GRE	7.4+07	8.2+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,3n	^{155}Tm	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,4n	^{154}Tm	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,5n	^{153}Tm	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,6n	^{152}Tm	CS	2FR GRE	8.3+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{143}Sm	CS	2FR GRE	6.6+07	6.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{143}Eu	CS	2FR GRE	9.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{144}Eu	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{145}Eu	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Eu	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Gd	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Gd	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Gd	CS	2FR GRE	6.6+07	6.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Tb	CS	2FR GRE	8.3+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Tb	CS	2FR GRE	8.3+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{150}Tb	CS	2FR GRE	9.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Dy	CS	2FR GRE	9.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Dy	CS	2FR GRE	8.3+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Dy	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Dy	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Dy	CS	2FR GRE	9.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Ho	CS	2FR GRE	8.3+07	8.3+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Ho	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Ho	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Ho	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Ho	CS	2FR GRE	9.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Er	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Er	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Er	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Er	CS	2FR GRE	6.6+07	9.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{12}C,3n	^{156}Er	CS	2FR GRE	8.5+07	9.3+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,4n	^{155}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{153}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,7n	^{152}Er	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{147}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Gd	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Gd	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{148}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Tb	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{12}C,x	^{153}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Dy	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Ho	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Ho	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Ho	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Ho	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Ho	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,4n	^{157}Tm	CS	2FR GRE	7.3+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,5n	^{156}Tm	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,6n	^{155}Tm	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,7n	^{154}Tm	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{145}Sm	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Sm	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{146}Eu	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{147}Eu	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Eu	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Eu	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{148}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Gd	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{150}Gd	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Tb	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Tb	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Dy	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Dy	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Dy	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Dy	CS	2FR GRE	7.3+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Ho	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Ho	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Ho	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{157}Ho	CS	2FR GRE	7.3+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Er	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{156}Er	CS	2FR GRE	7.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{157}Er	CS	2FR GRE	7.3+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{158}Er	CS	2FR GRE	7.3+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

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Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,5n	^{157}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{156}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,7n	^{155}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,8n	^{154}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,9n	^{153}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{149}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{150}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{12}C,x	^{152}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Dy	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Dy	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Ho	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Ho	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{158}Ho	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{159}Ho	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,4n	^{160}Tm	CS	2FR GRE	7.2+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,5n	^{159}Tm	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,6n	^{158}Tm	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,7n	^{157}Tm	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,9n	^{155}Tm	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Sm	CS	2FR GRE	7.2+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{149}Eu	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{150}Eu	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Eu	CS	2FR GRE	7.2+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Gd	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Gd	CS	2FR GRE	8.8+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Dy	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Dy	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{156}Dy	CS	2FR GRE	1.0+08	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Ho	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Ho	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Ho	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{157}Ho	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{158}Ho	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{156}Er	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{158}Er	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{159}Er	CS	2FR GRE	7.2+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{160}Er	CS	2FR GRE	7.2+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

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Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,4n	^{160}Er	CS	2FR GRE	6.6+07	9.3+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,5n	^{159}Er	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{158}Er	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,7n	^{157}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,8n	^{156}Er	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,9n	^{155}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{151}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Gd	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Gd	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{12}C,x	^{156}Gd	CS	2FR GRE	9.3+07	9.3+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{152}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Tb	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Tb	CS	2FR GRE	8.5+07	8.5+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Dy	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Dy	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Dy	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Dy	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Dy	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{158}Dy	CS	2FR GRE	6.6+07	6.6+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Ho	CS	2FR GRE	9.3+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Ho	CS	2FR GRE	8.5+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{159}Ho	CS	2FR GRE	6.6+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{160}Ho	CS	2FR GRE	6.6+07	9.3+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,4n	^{162}Tm	CS	2FR GRE	7.1+07	8.7+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,5n	^{161}Tm	CS	2FR GRE	7.1+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,6n	^{160}Tm	CS	2FR GRE	7.1+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,7n	^{159}Tm	CS	2FR GRE	8.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,9n	^{157}Tm	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{151}Eu	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Eu	CS	2FR GRE	8.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{153}Eu	CS	2FR GRE	7.1+07	7.1+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Eu	CS	2FR GRE	7.1+07	8.7+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{152}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Gd	CS	2FR GRE	1.0+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{156}Gd	CS	2FR GRE	8.7+07	8.7+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{154}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{155}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{157}Ho	CS	2FR GRE	8.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{158}Ho	CS	2FR GRE	8.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{159}Ho	CS	2FR GRE	8.7+07	8.7+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{157}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{159}Er	CS	2FR GRE	8.7+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{160}Er	CS	2FR GRE	7.1+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{161}Er	CS	2FR GRE	7.1+07	1.0+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{14}N,x	^{162}Er	CS	2FR GRE	7.1+07	7.1+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

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Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,4n	^{162}Er	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,5n	^{161}Er	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,6n	^{160}Er	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,7n	^{159}Er	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{153}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{154}Gd	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Gd	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Tb	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{158}Tb	CS	2FR GRE	8.8+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

^{12}C,x	^{154}Dy	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{155}Dy	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{156}Dy	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{157}Dy	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{159}Dy	CS	2FR GRE	8.8+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{160}Dy	CS	2FR GRE	8.8+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{160}Ho	CS	2FR GRE	1.1+08	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{161}Ho	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{162}Ho	CS	2FR GRE	8.8+07	1.1+08	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366
^{12}C,x	^{163}Ho	CS	2FR GRE	8.8+07	8.8+07	Jour	PR/C,32,1612	85	R.Kossakowski+	A0366

64 Gadolinium 154

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{155}Tb	DAP	1USAROC	2.6+07	2.6+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980
α,t	^{155}Tb	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980

64 Gadolinium 156

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{157}Tb	DAP	1USAROC	2.6+07	2.6+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980
α,t	^{157}Tb	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980

64 Gadolinium 158

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{159}Tb	DAP	1USAROC	2.6+07	2.6+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980
α,t	^{159}Tb	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980

64 Gadolinium 160

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{161}Tb	DAP	1USAROC	2.6+07	2.6+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980
α,t	^{161}Tb	DAP	1USAROC	2.7+07	2.7+07	Jour	PR/C,6,1411	72	J.S.Boyno+	C2980

65 Terbium 159

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{159}Tb	CSP	2GERMUN	Fast		Jour	JRN,333,1287	24	N.Ophoven+	23908
*	n,inel	^{159}Tb	?	2GERMUN	Fast		Jour	JRN,333,1287	24	N.Ophoven+	23908
	^{40}Ca,x	^{191}Bi	CS	4ZZZDUB	1.9+08	2.0+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476

	^{40}Ca,x	^{193}Bi	CS	4ZZZDUB	1.8+08	1.9+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ca,x	^{193}Po	CS	4ZZZDUB	2.0+08	2.0+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ca,x	^{194}Po	CS	4ZZZDUB	1.8+08	2.0+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ca,x	^{195}Po	CS	4ZZZDUB	1.8+08	2.0+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476

66 Dysprosium 161

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USALAS		4.0+02	Jour	PR/C,106,034607	22	I.Knapova+	14839

66 Dysprosium 163

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USALAS	1.7+00	4.8+02	Jour	PR/C,106,034607	22	I.Knapova+	14839

67 Holmium 165

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,2n	^{167}Tm	TT	4RUSFEI	1.7+07	4.3+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	α,3n	^{166}Tm	TT	4RUSFEI	3.0+07	4.3+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	α,n	^{168}Tm	TT	4RUSFEI	1.7+07	4.3+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	^{40}Ar,6n	^{199}At	CS	4ZZZDUB	1.8+08	2.4+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,7n	^{198}At	CS	4ZZZDUB	2.0+08	2.6+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,8n	^{197}At	CS	4ZZZDUB	2.2+08	2.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,9n	^{196}At	CS	4ZZZDUB	2.4+08	2.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,x	^{195}Po	CS	4ZZZDUB	2.5+08	2.8+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,x	^{196}Po	CS	4ZZZDUB	2.2+08	2.8+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,x	^{197}Po	CS	4ZZZDUB	2.1+08	2.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,x	^{198}Po	CS	4ZZZDUB	1.9+08	2.6+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
	^{40}Ar,x	^{199}Po	CS	4ZZZDUB	1.8+08	2.5+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476

68 Erbium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{166}Tm	TT	4RUSFEI	9.2+06	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	p,x	^{167}Tm	TT	4RUSFEI	9.2+06	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	p,x	^{168}Tm	TT	4RUSFEI	9.2+06	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	p,x	^{170}Tm	TT	4RUSFEI	9.2+06	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	d,x	^{166}Tm	TT	4RUSFEI	1.1+07	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	d,x	^{167}Tm	TT	4RUSFEI	1.1+07	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	d,x	^{168}Tm	TT	4RUSFEI	1.1+07	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094
	d,x	^{170}Tm	TT	4RUSFEI	1.1+07	2.2+07	Jour	SJA,48,419	80	P.P.Dmitriev+	A0094

68 Erbium 167

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	1USALAS	4.6-01	3.7+02	Jour	PR/C,106,034607	22	I.Knapova+	14839

68 Erbium 168

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,el	^{168}Er	DA	1USAROC	1.6+07	1.6+07	Jour	PR/C,33,793	86	I.M.Govil+	C2988
d,inel	^{168}Er	DAP	1USAROC	1.6+07	1.6+07	Jour	PR/C,33,793	86	I.M.Govil+	C2988
α,el	^{168}Er	DA	1USAROC	3.6+07	3.6+07	Jour	PR/C,33,793	86	I.M.Govil+	C2988
α,inel	^{168}Er	DAP	1USAROC	3.6+07	3.6+07	Jour	PR/C,33,793	86	I.M.Govil+	C2988

70 Ytterbium 172

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{172}Yb	DA	1USAROC	3.6+07	3.6+07	Jour	PR/C,36,1442	87	M.Govil+	C2989
α,inel	^{172}Yb	DAP	1USAROC	3.6+07	3.6+07	Jour	PR/C,36,1442	87	M.Govil+	C2989

72 Hafnium 180

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{180}Hf	DA	1USARUT	2.1+07	2.4+07	Jour	PRL,40,364	78	R.M.Ronningen+	C2992
α,inel	^{180}Hf	DAP	1USARUT	2.1+07	2.4+07	Jour	PL/B,70,167	77	F.T.Baker+	C2990
α,inel	^{180}Hf	DAP	1USARUT	2.1+07	2.4+07	Jour	PRL,40,364	78	R.M.Ronningen+	C2992

73 Tantalum

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,x	^{182}Re	TT	4RUSFEI	2.6+07	4.3+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
α,x	^{183}Re	TT	4RUSFEI	1.8+07	4.3+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
α,x	^{184}Re	TT	4RUSFEI	1.8+07	4.3+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070

73 Tantalum 179

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{180}Ta	CS	2GERMNZ	2.5-02	2.5-02	Jour	PR/C,107,045805	23	R.Garg+	23791
*	n,γ	^{180}Ta	RI	2GERMNZ		5.0-01	Jour	PR/C,107,045805	23	R.Garg+	23791

73 Tantalum 181

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,2n	^{180}W	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
p,3n	^{179}W	CS	4RUSFEI	2.2+07	2.2+07	Jour	SNP,31,291	80	N.S.Biryukov+	A0068
d,2n	^{181}W	TT	4RUSFEI	8.6+06	2.3+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
α,2n	^{183}Re	CS	3INDVEC	1.8+07	4.8+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,3n	^{182}Re	CS	3INDVEC	2.6+07	5.8+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,4n	^{181}Re	CS	3INDVEC	3.6+07	5.8+07	Jour	PRM,30,193	88	M.Ismail+	A0442
α,n	^{184}Re	TT	4RUSFEI	1.5+07	4.5+07	Jour	SJA,60,390	86	I.O.Konstantinov+	A0294
^{24}Mg,6n	^{199}At	CS	4ZZZDUB	1.2+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,7n	^{198}At	CS	4ZZZDUB	1.4+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,8n	^{197}At	CS	4ZZZDUB	1.5+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,x	^{196}Po	CS	4ZZZDUB	1.5+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,x	^{197}Po	CS	4ZZZDUB	1.5+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,x	^{198}Po	CS	4ZZZDUB	1.4+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476
^{24}Mg,x	^{199}Po	CS	4ZZZDUB	1.2+08	1.7+08	Jour	SNP,52,412	90	A.N.Andreev+	A0476

74 Tungsten

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
p,x	^{182}Re	TT	4RUSFEI	1.0+07	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
p,x	^{183}Re	TT	4RUSFEI	1.0+07	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
p,x	^{184}Re	TT	4RUSFEI	1.0+07	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
d,x	^{182}Re	TT	4RUSFEI	8.7+06	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
d,x	^{183}Re	TT	4RUSFEI	8.7+06	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070
d,x	^{184}Re	TT	4RUSFEI	8.7+06	2.2+07	Jour	SJA,48,150	80	P.P.Dmitriev+	A0070

78 Platinum 192

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
α,el	^{192}Pt	DA	1USARUT	2.4+07	2.4+07	Jour	PR/C,17,1559	78	F.T.Baker+	C2991
α,inel	^{192}Pt	DAP	1USARUT	2.4+07	2.4+07	Jour	PR/C,17,1559	78	F.T.Baker+	C2991

79 Gold 197

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,sct	^{197}Au	DAP	1USALTI	2.0+06	2.0+06	Thes	O'CONNOR	96	M.O'Connor+	14002
n,tot		CS	1USALTI	8.1+05	1.5+06	Thes	O'CONNOR	96	M.O'Connor+	14002

81 Thallium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{48}Ca,x	^{252}Fm	INT	4ZZZDUB	2.2+08	2.2+08	Jour	SNP,30,317	79	O.A.Orlova+	A0061

82 Lead

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	α,x	^{206}Po	?	3ARGCNE	2.3+07	5.4+07	Jour	RRL,50,(4),211	82	C.Wasilevsky+	A0139
	α,x	^{207}Po	?	3ARGCNE	1.7+07	5.4+07	Jour	RRL,50,(4),211	82	C.Wasilevsky+	A0139

82 Lead 208

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{9}Be,x	^{8}Be	CSP	3AULCBR	3.4+07	5.8+07	Jour	PR/C,68,014611	03	R.J.Woolliscroft+	A0713
	^{48}Ca,x	^{252}Fm	?	4ZZZDUB	2.2+08	2.2+08	Jour	SNP,30,317	79	O.A.Orlova+	A0061
	^{48}Ca,x	^{254}Fm	INT	4ZZZDUB	2.2+08	2.2+08	Jour	SNP,30,317	79	O.A.Orlova+	A0061
	^{238}U,fis	Many	CS	2GERGSI	1.8+11	1.8+11	Jour	EPJ/A,2,179	98	W.Schwab+	A0095
	^{238}U,fis		KE	2GERGSI	1.8+11	1.8+11	Jour	EPJ/A,2,179	98	W.Schwab+	A0095

83 Bismuth 209

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2ZZZGEL	3.0+02	1.5+05	Rept	EUR-31873	24	P.Romojaro+	23785
	p,x	^{204}Bi	?	4ZZZDUB	1.0+10	1.0+10	Jour	BAS,27,907	63	B.I.Belyaev+	A0914
	d,2n	^{209}Po	CS	1USAANL	7.7+06	2.1+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	d,3n	^{208}Po	CS	1USAANL	1.2+07	2.2+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	d,n	^{210}Po	CS	1USAANL	6.3+06	2.2+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	α,3n	^{210}At	CS	1USAANL	3.0+07	4.3+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	α,3n	^{210}At	CS	3INDVEC	4.5+07	4.9+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
	α,4n	^{209}At	CS	1USAANL	4.1+07	4.3+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	α,4n	^{209}At	CS	3INDVEC	4.5+07	4.9+07	Jour	RCA,39,61	86	S.S.Rattan+	A0353
	α,x	^{210}Po	CS	1USAANL	2.1+07	2.9+07	Jour	PR,114,154	59	W.J.Ramler+	A0246
	^{48}Ca,x	^{252}Fm	?	4ZZZDUB	2.4+08	2.4+08	Jour	SNP,30,317	79	O.A.Orlova+	A0061

90 Thorium 232

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis	^{134}Te	FY	2FR CSN	2.0+06	2.0+06	Jour	PR/C,108,064602	23	D.Gjestvang+	23906
*	n,tot		CS	1USALAS	3.3+06	2.3+08	Jour	NSE,198,1901	24	P.W.Lisowski+	14825
	p,3n	^{230}Pa	CS	2SF JYV	1.5+07	2.0+07	Jour	PS,24,930	81	A.Celler+	A0348
	p,3n	^{230}Pa	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,5n	^{228}Pa	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230

	p,6n	^{227}Pa	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,x	Many	CS	1USALRL	3.4+08	3.4+08	Jour	PR,103,378	56	M.Lindner+	C0367
*	d,2n	^{232}Pa	CS	1USABRK	3.1+07	5.0+07	Jour	PR/C,108,024609	23	N.Burahmah+	C2974
*	d,4n	^{230}Pa	CS	1USABRK	3.1+07	5.0+07	Jour	PR/C,108,024609	23	N.Burahmah+	C2974
*	d,5n	^{229}Pa	CS	1USABRK	3.1+07	5.0+07	Jour	PR/C,108,024609	23	N.Burahmah+	C2974
*	d,6n	^{228}Pa	CS	1USABRK	3.5+07	5.0+07	Jour	PR/C,108,024609	23	N.Burahmah+	C2974
*	d,x	^{233}Pa	CS	1USABRK	3.1+07	5.0+07	Jour	PR/C,108,024609	23	N.Burahmah+	C2974
	^{19}F,x	^{233}Pa	CS	3INDTRM	9.5+07	1.1+08	Jour	PR/C,53,796	96	G.K.Gubbi+	A0596
	^{74}Ge,x	^{227}Th	CS	4ZZZDUB	4.0+08	6.0+08	Jour	SNP,19,244	74	Ju.Ts.Oganesyan+	A0028
	^{74}Ge,x	^{231}Th	CS	4ZZZDUB	4.0+08	6.0+08	Jour	SNP,19,244	74	Ju.Ts.Oganesyan+	A0028
	^{74}Ge,x	^{230}U	CS	4ZZZDUB	4.0+08	6.0+08	Jour	SNP,19,244	74	Ju.Ts.Oganesyan+	A0028

92 Uranium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{6}Li,x	^{240}Am	CS	1USAYAL	3.5+07	5.8+07	Rept	COO-1716-17,15	73	R.C.Rudy	A0119

92 Uranium 228

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis	^{134}Te	FY	2FR CSN	1.9+06	3.4+06	Jour	PR/C,108,064602	23	D.Gjestvang+	23906

92 Uranium 233

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{12}C,fis	Many	CS	2JPNJAE	7.6+07	7.6+07	Prog	NEANDC(J)-130,111	88	H.Baba+	A0402

92 Uranium 234

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,d	^{235}Np	DAP	1USAROC	3.0+07	3.0+07	Jour	PR/C,18,671	78	R.D.Griffioen+	C2987
	α,t	^{235}Np	DAP	1USAROC	3.0+07	3.0+07	Jour	PR/C,18,671	78	R.D.Griffioen+	C2987

92 Uranium 235

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis	Many	FY	1USAORL	2.5-02	2.5-02	Jour	NIM/A,1059,169001	24	S.Kim+	14826
*	n,fis	Many	FY	1USATNL	5.5+06	1.1+07	Jour	PR/C,109,044604	24	M.E.Gooden+	14837
*	n,fis		MFQ	1USALAS	1.0+06	2.0+07	Jour	PR/C,105,044615	22	K.J.Kelly+	14788
	n,fis	^{118}Sn	FY	4RUSFEI	1.2+05	6.0+06	Jour	SNP,14,629	72	P.P.D'Yachenko+	41079
*	n,tot		CS	1USALAS	3.2+06	2.3+08	Jour	NSE,198,1901	24	P.W.Lisowski+	14825

	p,2n	^{234}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,3n	^{233}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,4n	^{232}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,5n	^{231}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	^{12}C,fis	Many	CS	2JPNJAE	7.5+07	7.5+07	Prog	NEANDC(J)-130,111	88	H.Baba+	A0402

92 Uranium 238

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,fis	Many	FY	1USATNL	5.5+06	1.1+07	Jour	PR/C,109,044604	24	M.E.Gooden+	14837
*	n,fis		MFQ	1USALAS	2.0+06	2.0+07	Jour	PR/C,108,024603	23	K.J.Kelly+	14823
*	n,tot		CS	1USALAS	3.3+06	2.3+08	Jour	NSE,198,1901	24	P.W.Lisowski+	14825
	p,3n	^{236}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,4n	^{235}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,5n	^{234}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,6n	^{233}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,7n	^{232}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	p,8n	^{231}Np	CS	1USABNL	2.0+08	2.0+08	Jour	IRE,30,1153	83	Y.Y.Chu+	A0230
	^{12}C,fis	Many	CS	2JPNJAE	7.3+07	7.3+07	Prog	NEANDC(J)-130,111	88	H.Baba+	A0402
	^{36}S,5n	^{269}Hs	CS	2GERGSI	1.8+08	2.0+08	Jour	PR/C,81,061601	10	R.Graeger+	A0873
	^{48}Ca,4n	^{282}Cn	CS	4ZZZDUB	2.4+08	2.4+08	Jour	PR/C,70,064609	04	Yu.Ts.Oganessian+	A0889

93 Neptunium 237

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,fis	^{88}Kr	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{91}Sr	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{92}Sr	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{93}Y	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{95}Zr	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{97}Zr	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{99}Mo	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{103}Ru	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{105}Ru	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{105}Rh	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{127}Sn	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{128}Sn	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{129}Sb	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{130}Sb	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{131}Te	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{132}Te	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{133}Te	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{134}Te	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{131}I	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{133}I	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{135}I	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{139}Ba	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{140}Ba	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{141}La	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{142}La	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,fis	^{143}Ce	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835

*	n,fis	^{151}Pm	FY	1USALAS	Fast		Jour	NDS,193,131	24	A.S.Tamashiro+	14835
*	n,γ	^{238}Np	CS	1USALAS	Fiss		Jour	PR/C,110,014626	24	A.S.Tamashiro+	14830
*	n,tot		CS	1USALAS	3.2+06	2.3+08	Jour	NSE,198,1901	24	P.W.Lisowski+	14825

94 Plutonium 239

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,fis	Many	FY	1USAORL	2.5-02	2.5-02	Jour	NIM/A,1059,169001	24	S.Kim+	14826
*	n,fis	Many	FY	1USATNL	5.5+06	1.1+07	Jour	PR/C,109,044604	24	M.E.Gooden+	14837
*	n,tot		CS	1USALAS	3.3+06	2.3+08	Jour	NSE,198,1901	24	P.W.Lisowski+	14825

94 Plutonium 240

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	0,fis		MFQ	1USALAS	Spont		Jour	PR/C,109,064611	24	K.J.Kelly+	14829
*	n,fis		MFQ	1USALAS	1.0+06	2.0+07	Jour	PR/C,109,064611	24	K.J.Kelly+	14829

94 Plutonium 242

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	^{48}Ca,2n	^{288}Fl	CS	4ZZZDUB	2.4+08	2.4+08	Jour	PR/C,70,064609	04	Yu.Ts.Oganessian+	A0889
	^{48}Ca,3n	^{287}Fl	CS	4ZZZDUB	2.4+08	2.4+08	Jour	PR/C,70,064609	04	Yu.Ts.Oganessian+	A0889

94 Plutonium 244

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	^{48}Ca,4n	^{288}Fl	CS	4ZZZDUB	2.4+08	2.4+08	Jour	PR/C,69,054607	04	Yu.Ts.Oganessian+	A0891
	^{48}Ca,5n	^{287}Fl	CS	4ZZZDUB	2.6+08	2.6+08	Jour	PR/C,69,054607	04	Yu.Ts.Oganessian+	A0891

95 Americium 243

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,fis		DA	4RUSLIN	5.7+05	4.5+08	Jour	EPJ/A,60,117	24	A.S.Vorobyev+	41773
*	n,fis		?	4RUSLIN	2.0+05	7.3+08	Jour	EPJ/A,60,117	24	A.S.Vorobyev+	41773

96 Curium 245

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

	^{48}Ca,3n	^{290}Lv	CS	4ZZZDUB	2.4+08	2.4+08	Jour	PR/C,69,054607	04	Yu.Ts.Oganessian+	A0891
	^{48}Ca,4n	^{289}Lv	CS	4ZZZDUB	2.6+08	2.6+08	Jour	PR/C,74,044602	06	Yu.Ts.Oganessian+	A0856

96 Curium 248

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{16}O,x	^{259}No	CS	1USABRK	9.8+07	9.8+07	Jour	PR/C,25,286	82	D.Lee+	A0173
	^{20}Ne,x	^{259}No	CS	1USABRK	1.2+08	1.2+08	Jour	PR/C,25,286	82	D.Lee+	A0173
	^{22}Ne,x	^{256}Md	CS	1USABRK	1.2+08	1.2+08	Jour	PR/C,25,286	82	D.Lee+	A0173
	^{22}Ne,x	^{259}No	CS	1USABRK	1.2+08	1.2+08	Jour	PR/C,25,286	82	D.Lee+	A0173
	^{48}Ca,3n	^{293}Lv	CS	4ZZZDUB	2.5+08	2.5+08	Jour	PR/C,70,064609	04	Yu.Ts.Oganessian+	A0889

97 Berkelium 249

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{22}Ne,x	^{256}Fm	CS	4ZZZDUB	1.3+08	1.5+08	Rept	JINR-P7-12762	79	G.V.Buklanov+	A0063

98 Californium 252

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,fis	^{134}Te	FY	2NOROSL	Spont		Jour	PR/C,108,064602	23	D.Gjestvang+	23906

102 Nobelium 250

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,fis		KE	4ZZZDUB	Spont		Jour	PPN/L,14,571	17	A.I.Svirikhin+	41774
*	0,fis		KE	4ZZZDUB	Spont		Jour	PPN/L,14,571	17	A.I.Svirikhin+	41774
*	0,fis		NU	4ZZZDUB	Spont		Jour	PPN/L,14,571	17	A.I.Svirikhin+	41774
*	0,fis		NU	4ZZZDUB	Spont		Jour	PPN/L,14,571	17	A.I.Svirikhin+	41774
*	0,fis		NU	4ZZZDUB	Spont		Jour	CPH/C,48,064002	24	R.S.Mukhin+	41775