

Japan Charged-Particle Nuclear Reaction Data Group (JCPRG)

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Retrieval service is available at:

<http://www.jcprg.org/exfor/>

Quantity code

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

Special codes in outgoing particle field

abs	Absorption	fus	Fusion	non	Nonelastic	ths	Thermal scattering
el	Elastic	inel	Inelastic	sct	Scattering	tot	Total
f	Fission	incl	Inclusive	tcc	Total charge changing		

Special codes in incident energy field

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

1 Hydrogen 1

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
d,γ	^3He	POD	2SWTPSI	2.9+07	4.5+07	Jour	PR/C,73,034005	06	T.Klechneva+	O1370
$d,n+p$	^1H	D3A	2UK BIR	1.2+07		Jour	NP/A,231,391	74	N.T.Okumusoglu+	D0346
$^{238}\text{U},f$	Many	CS	2GERGSI	2.4+11		Jour	NP/A,765,197	06	M.Bernas+	O1303
$^{238}\text{U},f$	Many	KE	2GERGSI	2.4+11		Jour	PR/C,73,014607	06	M.V.Ricciardi+	O1302
$^{238}\text{U},f$	Many	KE	2GERGSI	2.4+11		Jour	NP/A,765,197	06	M.Bernas+	O1303
$^{238}\text{U},x$	Many	CS	2GERGSI	2.4+11		Jour	PR/C,73,014607	06	M.V.Ricciardi+	O1302

1 Hydrogen 2

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	incl	CS	1USAORL	2.8+06	2.5+06	Jour	PR,80,637	50	A.H.Snell+	L0113
$p,n+p$	^1H	POD	2GERJUL	5.0+05	8.0+05	Jour	PRL,94,072304	05	S.Yaschenko+	O1391
d,p	^3H	CS	2GERBOC	2.4+03	1.5+04	Jour	PL/B,547,193	02	F.Raiola+	O1381
d,p	^3H	CS	2GERBOC	3.9+03	2.2+04	Jour	JP/G,31,1141	05	F.Raiola+	O1379
$^9\text{Li},t$	^8Li	DAP	2ZZZCER	2.1+07		Jour	PL/B,635,17	06	H.B.Jeppesen+	O1395
$^{132}\text{Xe},d$	^{132}Xe	DA	2GERGSI	1.2+07		Jour	ZP/A,340,339	91	G.Kraus+	O1394
$^{132}\text{Xe},p$	^{133}Xe	DAP	2GERGSI	1.2+07		Jour	ZP/A,340,339	91	G.Kraus+	O1394

1 Hydrogen 3

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	^2H	CS	2GERHEI	1.8+07	3.1+07	Jour	ZAP,208,129	68	R.Pfeiffer	L0119
γ,n	^2H	CS	4RUSLEB	6.6+06	1.2+08	Jour	JET,20,20	65	A.T.Varfolomeev+	L0120

2 Helium 3

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,p	^2H	CS	2UK GLS	1.1+07	1.0+08	Jour	PL/B,46,369	73	G.Ticcioni+	L0116

2 Helium 4

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	^3He	CS	2ITYTUR	2.5+07	4.6+07	Jour	NC/A,38,145	77	F.Balertra+	L0118
γ,p	^3H	CS	2ITYTUR	2.4+07	4.6+07	Jour	NC/A,38,145	77	F.Balertra+	L0118
d,el	^4He	POD	2SWTBAS	3.3+07	5.2+07	Jour	NIM/A,404,394	98	H.Anklin+	O1380
$^{12}\text{C},\gamma$	^{16}O	CS	2GERBOC	1.9+06	4.9+06	Jour	EPJ/A,26,301	05	O.Schuermann+	O1308

7 Nitrogen 14

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
d,α	^{12}C	DAP	2GERMBG	5.3+05	2.8+09	Jour	NC/A,39,9	77	W.Koenig+	D0395
d,el	^{14}N	DA	3ALGUAG	1.3+06	3.2+06	Jour	NP/A,125,568	69	H.Beaumevieille+	D0392
d,p	^{15}N	DAP	3ALGUAG	1.0+06	3.2+06	Jour	NP/A,125,568	69	H.Beaumevieille+	D0392
d,p	^{15}N	DAP	2GERMBG	2.6+06	5.0+06	Jour	NC/A,39,9	77	W.Koenig+	D0395
d,p	^{15}N	DAP	2UK BIR	4.9+05	1.9+06	Jour	VAC,34,899	84	J.C.B.Simpson+	D0381
d,p	^{15}N	DAP	2GERMBG	5.6+05	3.0+06	Jour	NC/A,39,9	77	W.Koenig+	D0395
α,el	^{14}N	DA	2FR LYO	5.2+06	7.5+06	Jour	NIM/B,66,237	92	H.Artigalas+	D0399
α,p	^{17}O	DA	2ITYPAD	4.9+06	6.0+06	Jour	NIM/B,240,803	05	G.Dellamea+	O1286
α,p	^{17}O	DA	2FR LYO	5.2+06	7.5+06	Jour	NIM/B,66,237	92	H.Artigalas+	D0399

8 Oxygen 16

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122
γ,abs		CS	4RUSLEB	1.9+07	2.6+07	Jour	JET,16,50	63	N.A.Burgov+	L0127
γ,n	^{15}O	CS	1USALRL	1.6+07	3.0+07	Jour	PR,B133,869	64	R.L.Bramblett+	L0112
γ,n	incl	CS	2FR SAC	1.6+07	2.6+07	Jour	JPR,27,8	66	J.Miller+	L0126
d,α	^{14}N	DAP	2ITYCAT	9.7+05	2.0+06	Jour	NC/A,14,692	73	S.Cavallaro+	D0390
d,el	^{16}O	DA	2ITYCAT	9.8+05	2.0+06	Jour	NC/A,14,692	73	S.Cavallaro+	D0390
d,p	^{17}O	DAP	2ITYCAT	9.7+05	2.0+06	Jour	NC/A,14,692	73	S.Cavallaro+	D0390

8 Oxygen 18

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,p	^{17}N	CS	1USALRL	1.6+07	3.0+07	Jour	PRL,36,1441	76	B.L.Berman+	L0121

9 Fluorine 19

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma,2n$	^{17}F	CS	1USAOKL	2.2+07	6.0+07	Jour	NP/A,262,91	76	D.W.Anderson+	L0124
p,α	^{16}O	CSP	2UK MAN	8.4+05	2.1+06	Jour	NIM,140,519	77	R.A.Jarjis	D0386
p,α	^{16}O	DAP	2FR SAC	5.1+05	1.9+06	Jour	JRC,22,113	74	I.Goliceff+	D0388

12 Magnesium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122
γ,p		CS	2JPNTOH	1.6+07	2.4+07	Jour	JPJ,17,735	62	K.Shoda+	L0130
d,x	^{22}Na	TT	3BZLIEN	1.4+07		Jour	JRN/L,127,31	88	J.L.Q.Debritto+	O1333

<i>p,γ</i>	incl	CSP	4RUSITE	1.1+09		Jour	YF,67,1529	04	A.A.Vasenko+	O1324
<i>p,p</i>	incl	CS	2BLGLVN	6.3+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,p</i>	incl	DE	2BLGLVN	2.6+07	6.3+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,t</i>	incl	CS	2BLGLVN	6.3+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,t</i>	incl	DE	2BLGLVN	2.6+07	6.3+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,tot</i>		CS	2BLGLVN	2.6+07	6.3+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,x</i>	³ He	CS	2BLGLVN	6.3+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>p,x</i>	³ He	DE	2BLGLVN	6.3+07	2.6+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,α</i>	incl	CS	2BLGLVN	5.8+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,α</i>	incl	DE	2BLGLVN	5.8+07	2.5+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,d</i>	incl	CS	2BLGLVN	5.8+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,d</i>	incl	DE	2BLGLVN	2.5+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,p</i>	incl	CS	2BLGLVN	5.8+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,p</i>	incl	DE	2BLGLVN	2.5+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,t</i>	incl	CS	2BLGLVN	5.8+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,t</i>	incl	DE	2BLGLVN	5.8+07	2.5+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,tot</i>		CS	2BLGLVN	2.5+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,x</i>	³ He	CS	2BLGLVN	5.8+07		Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,x</i>	³ He	DE	2BLGLVN	2.5+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,x</i>	⁶ Li	DE	2BLGLVN	4.6+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,x</i>	⁷ Li	DE	2BLGLVN	5.8+07	4.6+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296
<i>α,x</i>	⁷ Be	DE	2BLGLVN	4.6+07	5.8+07	Jour	PR/C,72,034607	05	P.Demetriou+	O1296

14 Silicon 28

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,α</i>	²⁴ Mg	CSP	1USAUI	1.6+07	2.2+07	Jour	PR/C,27,470	83	R.L.Gulbranson+	L0134
<i>γ,p</i>	²⁷ Al	CS	1USAUI	1.6+07	2.3+07	Jour	PR/C,27,470	83	R.L.Gulbranson+	L0134
<i>γ,p</i>	²⁷ Al	CS	2JPNTOH	1.6+07	2.4+07	Jour	JPJ,17,735	62	K.Shoda+	L0130
<i>γ,p</i>	²⁷ Al	CSP	1USAUI	1.6+07	2.2+07	Jour	PR/C,27,470	83	R.L.Gulbranson+	L0134

16 Sulphur

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,abs</i>		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122

16 Sulphur 32

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,p</i>	³¹ P	CS	2JPNTOH	1.4+07	2.4+07	Jour	JPJ,17,735	62	K.Shoda+	L0130

16 Sulphur 34

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

α,n	^{37}Ar	DAP	2UK LVP	1.0+07	1.4+07	Jour	JP/G,1,35	75	P.J.Nolan+	O1373
α,n	^{37}Ar	DAP	2UK LVP	9.5+06		Jour	JP/A,7,83	74	L.L.Gadeken+	O1372
α,n	^{37}Ar	POL	2UK LVP	1.0+07	1.4+07	Jour	JP/G,1,35	75	P.J.Nolan+	O1373
α,n	^{37}Ar	POL	2UK LVP	9.5+06		Jour	JP/A,7,83	74	L.L.Gadeken+	O1372
α,p	^{37}Cl	DAP	2UK LVP	9.0+06	1.2+07	Jour	JP/A,7,1437	74	P.J.Nolan+	O1374
α,p	^{37}Cl	POL	2UK LVP	9.0+06	1.2+07	Jour	JP/A,7,1437	74	P.J.Nolan+	O1374

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Potassium

39

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
γ,n	^{38}K	CS	3AULAML	1.2+07	3.0+07	Jour	NP/A,171,324		71	D.V.Webb+	L0132

20

Calcium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
γ,abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576		65	J.M.Wyckoff+	L0122

20

Calcium

40

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
γ,n	incl	CS	2FR SAC	1.6+07	2.6+07	Jour	JPR,27,8		66	J.Miller+	L0126

22

Titanium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
p,x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426		06	C.-M.Herbach+	O1305
p,x	^{44}Ti	CS	3BZLIPE	2.1+07	2.9+07	Conf	2004SANTA,2,1374		05	F.Bringas+	O1313

23

Vanadium

50

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
p,n	^{50}Cr	TT	2GERBOC	7.3+05	1.6+06	Jour	JP/G,32,489		06	K.U.Kettner+	O1330

23

Vanadium

51

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
n,n	incl	DAE	3DDRTUD	1.4+07		Rept	INDC(GDR)-058/L		90	H.Al-Obiesi+	22736
p,x	^{44}Ti	TT	4RUSFVE	3.7+07		Conf	91VILLIG,,79		91	N.G.Zaitseva+	O1261

$\alpha,3n$	^{60}Cu	CS	2UK HAR	2.6+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{51}Cr	CS	2UK HAR	7.6+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{52}Mn	CS	2UK HAR	6.4+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{54}Mn	CS	2UK HAR	3.2+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{56}Mn	CS	2UK HAR	5.1+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{59}Fe	CS	2UK HAR	5.1+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{55}Co	CS	2UK HAR	5.1+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{56}Co	CS	2UK HAR	4.6+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{57}Co	CS	2UK HAR	2.6+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{58}Co	CS	2UK HAR	1.6+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{60}Co	CS	2UK HAR	2.9+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394
α,x	^{57}Ni	CS	2UK HAR	5.1+07	8.3+07	Jour	ZP/A,317,155	84	E.Gadioli+	D0394

28 Nickel

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122
p,x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305
p,x	^{55}Co	CS	2BLGVUB	1.3+07	2.9+07	Jour	ARI,47,445	96	M.Sonck+	D0393
p,x	^{56}Ni	CS	3BZLIPE	1.8+07	2.7+07	Conf	2004SANTA,2,1374	05	F.Bringas+	O1313

28 Nickel 58

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,p	^{58}Co	CS	2GERHAM	1.3+07		Jour	ZN/A,21,988	Sep 66	M.Bormann+	20836
$^{12}\text{C},\gamma$	^{70}Se	CS	2GERMUU	3.0+07	4.2+07	Jour	ZP/A,307,109	82	Ch.Setzensack+	O1346

28 Nickel 60

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^{12}\text{C},2n$	^{70}Se	CS	2GERMUU	3.4+07	4.2+07	Jour	ZP/A,307,109	82	Ch.Setzensack+	O1346

28 Nickel 61

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,0$		RP	2ZZZGEL	0.0+00		Priv	KOPECKI	Apr 06	S.Kopecky+	22922
n,el	^{61}Ni	AMP	2ZZZGEL	4.0+00	3.0+04	Priv	KOPECKI	Apr 06	S.Kopecky+	22922
n,tot		CS	2ZZZGEL	4.3+00	3.0+00	Priv	KOPECKI	Apr 06	S.Kopecky+	22922

29 Copper

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122
γ ,n	incl	CS	2JPNETL	6.2+06	2.3+07	Jour	JPJ,25,655	68	T.Tomimasu	L0108
p,x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305
α ,x	^{66}Ga	CS	2BLGVUB	9.9+06	4.2+07	Jour	ARI,47,445	96	M.Sonck+	D0393
^{12}C ,x	Many	CS	2ZZZCER	1.0+09		Jour	ZP/A,312,177	83	A.Lleres+	O1335

29 Copper 65

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
d , ^3He	^{64}Ni	DAP	2GERMUN	2.2+07		Conf	80SANTA,,670	80	N.Seichert+	O1368
d , ^3He	^{64}Ni	POD	2GERMUN	2.2+07		Conf	80SANTA,,670	80	N.Seichert+	O1368

30 Zinc

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{48}V	CS	4RUSJIA	1.4+08	9.8+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{51}Cr	CS	4RUSJIA	1.4+08	8.7+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{52}Mn	CS	4RUSJIA	1.4+08	6.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{54}Mn	CS	4RUSJIA	1.4+08	6.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{52}Fe	CS	4RUSJIA	1.4+08	1.2+08	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{59}Fe	CS	4RUSJIA	1.4+08	6.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{55}Co	CS	4RUSJIA	1.4+08	3.7+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{56}Co	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{57}Co	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{58}Co	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{60}Co	CS	4RUSJIA	1.4+08	3.7+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{56}Ni	CS	4RUSJIA	1.4+08	7.5+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{57}Ni	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{64}Cu	CS	2JPNIRS	2.6+07	4.0+07	Jour	NIM/B,240,625	05	F.Szelecsenyi+	O1351
p,x	^{64}Cu	CS	4RUSJIA	3.2+07	1.4+08	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{67}Cu	CS	4RUSJIA	3.2+07	1.4+08	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{62}Zn	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{65}Zn	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{66}Ga	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310
p,x	^{67}Ga	CS	4RUSJIA	1.4+08	3.3+07	Jour	JRN,264,101	05	M.L.Bonardi+	O1310

30 Zinc 66

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{64}Cu	CS	3SAFITH	3.5+07	1.0+08	Jour	NIM/B,240,625	05	F.Szelecsenyi+	O1351
d , α	^{64}Cu	CS	2GERJUL	5.4+06	1.4+07	Conf	2004SANTA,2,1631	04	K.Hilgers+	O1362

30

Zinc

68

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{64}Cu	CS	3SAFITH	1.8+07	9.9+07	Jour	NIM/B,240,625	05	F.Szelecsenyi+	O1351

31

Gallium

71

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
α,n	^{74}As	CS	2GERGOE	1.4+07		Jour	ZP,222,474	69	W.Weirauch+	O1377

32

Germanium

74

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$d,2n$	^{74}As	CS	2GERGOE	1.4+07		Jour	ZP,222,474	69	W.Weirauch+	O1377

33

Arsenic

75

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,p	^{75}Ge	CS	2GERHAM	1.4+07		Jour	ZN/A,21,988	Sep 66	M.Bormann+	20836

34

Selenium

80

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	incl	CS	2ITYTUP	1.2+07	2.3+07	Jour	NC/B,51,199	67	S.Costa+	L0114

35

Bromine

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{77}Kr	TT	4RUSFVE	2.2+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

37

Rubidium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{82}Sr	TT	4RUSFVE	3.6+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

44 Ruthenium 100

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
α, n	^{103}Pd	CS	2GERJUL	1.1+07	2.5+07	Conf	2004SANTA,2,1634	04	Ye.Skakun+	O1363

44 Ruthenium 101

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He}, n$	^{103}Pd	CS	2GERJUL	1.5+07	3.4+07	Conf	2004SANTA,2,1634	04	Ye.Skakun+	O1363
$\alpha, 2n$	^{103}Pd	CS	2GERJUL	1.5+07	2.3+07	Conf	2004SANTA,2,1634	04	Ye.Skakun+	O1363

44 Ruthenium 102

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He}, 2n$	^{103}Pd	CS	2GERJUL	1.4+07	3.4+07	Conf	2004SANTA,2,1634	04	Ye.Skakun+	O1363

47 Silver

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ, abs		CS	1USANBS	1.0+07	3.5+07	Jour	PR,B137,576	65	J.M.Wyckoff+	L0122
p, x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305
p, x	^{100}Pd	CS	3SAFITH	4.6+07	1.0+08	Jour	RCA,87,87	99	M.Fassbender+	D0397
p, x	^{100}Pd	TT	3SAFITH	6.6+07		Jour	RCA,87,87	99	M.Fassbender+	D0397
p, x	^{101}Pd	CS	3SAFITH	3.6+07	1.0+08	Jour	RCA,87,87	99	M.Fassbender+	D0397
p, x	^{101}Pd	TT	3SAFITH	6.6+07		Jour	RCA,87,87	99	M.Fassbender+	D0397
p, x	^{103}Pd	CS	3SAFITH	1.7+07	9.5+07	Jour	RCA,87,87	99	M.Fassbender+	D0397
p, x	^{103}Pd	TT	3SAFITH	6.6+07		Jour	RCA,87,87	99	M.Fassbender+	D0397
$^{12}\text{C}, x$	Many	CS	2ZZZCER	1.0+09		Jour	ZP/A,312,177	83	A.Lleres+	O1335

47 Silver 107

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, 2n$	^{109}In	CS	2GERGOE	1.9+07	4.0+07	Jour	ZP,214,437	68	F.Smend+	O1378

47 Silver 109

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, 2n$	^{111}In	CS	2GERGOE	1.9+07	3.5+07	Jour	ZP,214,437	68	F.Smend+	O1378

48 Cadmium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,x</i>	¹⁰⁴ Ag	CS	2BLGVUB	1.3+07	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹⁰⁶ Ag	CS	2BLGVUB	1.6+07	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹¹ Ag	CS	2BLGVUB	1.3+07	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹⁰⁷ Cd	CS	2BLGVUB	1.7+07	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹⁰⁹ Cd	CS	2BLGVUB	3.5+07	6.6+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹¹ Cd	CS	2BLGVUB	7.5+06	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹⁰⁷ In	CS	2BLGVUB	7.5+06	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹⁰⁸ In	CS	2BLGVUB	7.5+06	6.6+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹⁰ In	CS	2BLGVUB	7.5+06	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹¹ In	CS	2BLGVUB	7.5+06	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹³ In	CS	2BLGVUB	7.5+06	7.4+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170
<i>p,x</i>	¹¹⁵ In	CS	2BLGVUB	7.5+06	6.6+07	Jour	NIM/B,245,379	06	F.Tarkanyi+	D4170

48 Cadmium 113

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,3n</i>	¹¹¹ In	TT	4RUSFVE	2.5+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

48 Cadmium 114

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,4n</i>	¹¹¹ In	TT	4RUSFVE	2.0+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

50 Tin

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,x</i>	¹¹⁰ In	CS	2BLGVUB	6.6+07	3.5+07	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹¹⁴ In	CS	2BLGVUB	6.6+07	1.3+07	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹¹⁷ Sn	CS	2BLGVUB	6.6+07	3.2+06	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹¹⁶ Sb	CS	2BLGVUB	3.2+07	5.6+06	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹¹⁸ Sb	CS	2BLGVUB	6.6+07	3.2+06	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹²⁰ Sb	CS	2BLGVUB	6.6+07	3.2+06	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
<i>p,x</i>	¹²⁴ Sb	CS	2BLGVUB	6.6+07	3.2+06	Jour	NIM/B,247,180	06	A.Hermanne+	D4173
¹¹ B,x	¹²⁷ Cs	CS	3INDTRM	3.5+07	5.1+07	Jour	NIM/A,531,645	04	M.Hemalatha+	D0401
¹¹ B,x	¹²⁹ Cs	CS	3INDTRM	3.5+07	5.1+07	Jour	NIM/A,531,645	04	M.Hemalatha+	D0401

50 Tin 112

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

$^{12}\text{C},x$	^{48}V	DA	2ZZZCER	1.0+09		Jour	ZP/A,312,177	83	A.Lleres+	O1335
$^{12}\text{C},x$	^{52}Mn	DA	2ZZZCER	1.0+09		Jour	ZP/A,312,177	83	A.Lleres+	O1335

50

Tin

124

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^{12}\text{C},x$	Many	DA	2ZZZCER	1.0+09		Jour	ZP/A,312,177	83	A.Lleres+	O1335

51

Antimony

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},x$	^{121}I	CS	2GERJUL	1.2+07	3.5+07	Jour	ARI,64,409	06	K.F.Hassan+	D4171
$^3\text{He},x$	^{124}I	CS	2GERJUL	7.0+06	3.5+07	Jour	ARI,64,409	06	K.F.Hassan+	D4171
$^3\text{He},x$	^{124}I	TT	2GERJUL	1.3+07		Jour	ARI,64,409	06	K.F.Hassan+	D4171

52

Tellurium

123

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,inel	^{123}Te	TT	4RUSRI	8.0+06		Conf	99VANCOU,,319	99	V.Jakovlev+	O1332

53

Iodine

127

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,5n$	^{123}Xe	TT	4RUSFVE	4.8+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

55

Cesium

133

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,6n$	^{128}Ba	TT	4RUSFVE	4.3+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261
p,x	^{127}Xe	TT	4RUSFVE	5.9+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

56

Barium

138

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
d,γ	^{140}La	CS	2GERGOE	8.4+06	2.6+07	Jour	ZP/A,291,377	79	R.Kantus+	O1340

58 Cerium

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

$^3\text{He},x$	^{140}Nd	CS	2GERJUL	1.6+07	3.5+07	Conf	2004SANTA,2,1631	04	K.Hilgers+	O1362
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59 Praesodymium 141

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

$p,2n$	^{140}Nd	CS	2GERJUL	1.1+07	4.5+07	Conf	2004SANTA,2,1631	04	K.Hilgers+	O1362
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62 Samarium

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

α,x	^{145}Eu	CS	2GERKFK	7.2+07	1.4+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{146}Eu	CS	2GERKFK	7.2+07	2.1+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{147}Eu	CS	2GERKFK	7.2+07	4.2+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{148}Eu	CS	2GERKFK	7.2+07	3.0+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{150}Eu	CS	2GERKFK	7.2+07	3.0+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{152}Eu	CS	2GERKFK	7.2+07	3.5+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359
α,x	^{154}Eu	CS	2GERKFK	7.2+07	2.1+07	Jour	JRN,162,145	92	M.J.Ozafran+	O1359

62 Samarium 152

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

$^3\text{He},d$	^{153}Eu	DAP	2GERBON	3.5+07		Jour	ZP/A,301,319	81	H.Ower+	O1341
α,t	^{153}Eu	DAP	2GERBON	3.5+07		Jour	ZP/A,301,319	81	H.Ower+	O1341

64 Gadolinium 154

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

$^3\text{He},d$	^{155}Tb	DAP	2GERBON	3.5+07		Jour	ZP/A,301,319	81	H.Ower+	O1341
α,t	^{155}Tb	DAP	2GERBON	3.5+07		Jour	ZP/A,301,319	81	H.Ower+	O1341

64 Gadolinium 156

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

α,t	^{157}Tb	DAP	2GERBON	3.5+07		Jour	ZP/A,301,319	81	H.Ower+	O1341
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71 Lutetium 176

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	¹⁷⁷ Lu	CS	2GERKFK	Maxwl	2.2+05	Jour	PR/C,73,015807	06	K.Wisshak+	22917
<i>n,γ</i>	¹⁷⁷ Lu	?	2GERKFK	3.0+03	2.2+05	Jour	PR/C,73,015807	06	K.Wisshak+	22917
<i>n,tot</i>		CS	2GERKFK	1.0+04	2.0+05	Jour	PR/C,73,015807	06	K.Wisshak+	22917
<i>p,n</i>	¹⁷⁶ Hf	TT	2GERBOC	7.7+05	1.4+06	Jour	JP/G,32,489	06	K.U.Kettner+	O1330

71 Lutetium 177

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	¹⁷⁸ Lu	CS	2FR BRC	2.5+00		Jour	PR/C,73,014603	06	G.Belier+	22915
<i>n,γ</i>	¹⁷⁸ Lu	CST	2FR SAC	2.5-02		Jour	PR/C,73,014603	06	G.Belier+	22915
<i>n,γ</i>	¹⁷⁸ Lu	CST	2FR ILL	2.5-02		Jour	PR/C,73,014603	06	G.Belier+	22915
<i>n,γ</i>	¹⁷⁸ Lu	RI	2FR BRC	5.0-01		Jour	PR/C,73,014603	06	G.Belier+	22915

73 Tantalum

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,x</i>	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305

73 Tantalum 181

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,n</i>	incl	CS	1USANIS	7.8+06	2.4+07	Jour	PR,112,560	58	E.G.Fuller+	L0111
<i>n,n</i>	incl	DAE	3DDRTUD	1.4+07		Rept	INDC(GDR)-058/L	90	H.Al-Obiesi+	22736
<i>p,f</i>		CS	4ZZZDUB	2.0+08	1.0+09	Jour	FCY/L,2,49	05	V.I.Yurevich+	O1331
¹² C, <i>3n</i>	¹⁹⁰ Au	CS	2ITYLNS	5.4+07	8.3+07	Jour	ZP/A,350,121	94	M.Crippa+	O1349
¹² C, <i>fus</i>		CS	2ITYLNS	5.4+07	9.8+07	Jour	ZP/A,350,121	94	M.Crippa+	O1349
¹² C, <i>x</i>	¹⁸⁴ Re	CS	2ITYLNS	5.4+07	9.8+07	Jour	ZP/A,350,121	94	M.Crippa+	O1349
¹² C, <i>x</i>	¹⁸⁵ Os	CS	2ITYLNS	6.8+07	9.8+07	Jour	ZP/A,350,121	94	M.Crippa+	O1349
¹² C, <i>x</i>	¹⁸⁹ Ir	CS	2ITYLNS	0.0+00		Jour	ZP/A,350,121	94	M.Crippa+	O1349
¹² C, <i>x</i>	¹⁸⁹ Pt	CS	2ITYLNS	5.7+07	9.8+07	Jour	ZP/A,350,121	94	M.Crippa+	O1349

74 Tungsten

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,n</i>	incl	DAE	3DDRTUD	1.4+07		Rept	INDC(GDR)-058/L	90	H.Al-Obiesi+	22736
<i>p,x</i>	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305

82 Lead

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	incl	CS	2JPNETL	2.4+06	2.2+07	Jour	JPJ,25,655	68	T.Tomimasu	L0108
p,x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305

82 Lead 204

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,f		DA	2SWDUPP	4.8+07	1.8+08	Conf	2004SANTA,,1,633	05	V.P.Eysmont+	O1312

82 Lead 206

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	incl	CS	4RUSMOS	7.5+06	2.7+07	Jour	IZK,37,156	73	Yu.Sorokin+	L0107
$n,0$		RP	2ZZZGEL	0.0+00		Conf	2004SANTA,,1539	Sep 04	A.Borella+	22921
n,el	^{206}Pb	AMP	2ZZZGEL	3.0+00		Conf	2004SANTA,,1539	Sep 04	A.Borella+	22921
n,γ	^{207}Pb	CS	2ZZZGEL	6.2+00	3.0+00	Thes	BORELLA	05	A.Borella+	22909
n,γ	^{207}Pb	CS	2ZZZGEL	Maxwl		Conf	2004SANTA,,1539	Sep 04	A.Borella+	22921
n,tot		CS	2ZZZGEL	8.0+00	3.0+00	Thes	BORELLA	05	A.Borella+	22909
p,f		DA	2SWDUPP	4.8+07	1.8+08	Conf	2004SANTA,1,633	05	V.P.Eysmont+	O1312
p,x	^{201}Tl	TT	4RUSFVE	4.9+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

82 Lead 207

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,f		DA	2SWDUPP	4.8+07	1.8+08	Conf	2004SANTA,1,633	05	V.P.Eysmont+	O1312
p,x	^{201}Tl	TT	4RUSFVE	5.7+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261

82 Lead 208

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,n	incl	CS	4RUSMOS	7.3+06	2.7+07	Jour	IZK,37,156	73	Yu.Sorokin+	L0107
n,p	^{208}Tl	DAE	2SWDUPP	9.7+07		Jour	NP/A,617,316	97	A.Ringbom+	22740
p,f		DA	2SWDUPP	4.8+07	1.8+08	Conf	2004SANTA,1,633	05	V.P.Eysmont+	O1312
p,x	^{201}Tl	TT	4RUSFVE	6.8+07		Conf	91VILLIG,,79	91	N.G.Zaitseva+	O1261
d,p	^{209}Pb	DAP	2GERMUN	2.2+07		Conf	80SANTA,,670	80	N.Seichert+	O1368
d,p	^{209}Pb	POD	2GERMUN	2.2+07		Conf	80SANTA,,670	80	N.Seichert+	O1368
d,t	^{207}Pb	POD	2GERMUN	2.2+07		Conf	80SANTA,,670	80	N.Seichert+	O1368

83

Bismuth

209

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,f		DA	2SWDUPP	4.8+07	1.8+08	Conf	2004SANTA,1,633	05	V.P.Eysmont+	O1312
α,f		CS	4ZZZDUB	4.3+07	5.1+07	Jour	RM,25,267	95	N.K.Skobelev+	O1288
${}^6\text{He},f$		CS	4ZZZDUB	3.2+07	4.9+07	Jour	RM,25,267	95	N.K.Skobelev+	O1288
${}^{12}\text{C},x$	Many	CS	3CPRIMP	5.6+08		Jour	JRN/L,212,409	96	Zongweili+	O1386

90

Thorium

232

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,f		CS	2SWTPSI	5.9+08		Jour	NP/A,764,1	06	H.U.Wenger+	O1284
p,x	Many	CSP	2GERGSI	1.2+09		Jour	NP/A,765,426	06	C.-M.Herbach+	O1305
p,x	Many	CS	2SWTPSI	5.9+08		Jour	NP/A,764,1	06	H.U.Wenger+	O1284
α,f	${}^{99}\text{Y}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{99}\text{Zr}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{99}\text{Nb}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{100}\text{Nb}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{102}\text{Nb}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{106}\text{Tc}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{107}\text{Tc}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{108}\text{Tc}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{111}\text{Rh}$?	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{112}\text{Rh}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{117}\text{Ag}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
α,f	${}^{118}\text{Ag}$	CS	3INDVEC	2.8+07	7.1+07	Jour	ZP/A,345,401	93	A.Chakrabarti+	O1392
${}^{12}\text{C},f$		CS	3INDTRM	6.3+07	8.2+07	Jour	ZP/A,351,195	95	A.Karnik+	O1390
${}^{12}\text{C},f$		DA	3INDTRM	6.3+07	8.2+07	Jour	ZP/A,351,195	95	A.Karnik+	O1390

92

Uranium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,f	${}^{91}\text{Y}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{95}\text{Zr}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{95}\text{Nb}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{99}\text{Mo}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{103}\text{Ru}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{112}\text{Pd}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{115}\text{Cd}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{124}\text{Sb}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{126}\text{Sb}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{127}\text{Sb}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{132}\text{Te}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{131}\text{I}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{134}\text{Cs}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{136}\text{Cs}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{137}\text{Cs}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
p,f	${}^{140}\text{Ba}$	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361

<i>p,f</i>	¹⁴¹ Ce	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
<i>p,f</i>	¹⁴⁴ Ce	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
<i>p,f</i>	¹⁴⁷ Nd	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
<i>p,n</i>	²³⁸ Np	CS	2SWTPSI	2.2+07	6.9+07	Conf	2004SANTA,2,1547	05	M.A.M.Uosif+	O1361
<i>p,x</i>	Many	CS	4ZZZDUB	6.6+08		Conf	2004SANTA,1,1043	04	J.Adam+	O1311
<i>p,x</i>	Many	CS	2SWTPSI	5.9+08		Jour	NP/A,764,1	06	H.U.Wenger+	O1284

92 Uranium 233

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,f</i>	Many	FY	2SWDAE	Fast		Jour	EPJ/A,8,331	Apr 00	J.Galy+	22798
<i>n,f</i>	Many	CHG	2SWDAE	1.2+06		Jour	EPJ/A,8,331	Apr 00	J.Galy+	22798

92 Uranium 235

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	²³⁶ U	CS	2ZZZGEL	2.0+02	3.2+04	Conf	75WASH,,599	Mar 75	F.Corvi+	22630

92 Uranium 236

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
³ He, <i>2n</i>	²³⁷ Pu	CS	2SF JYV	2.1+07	5.9+07	Jour	RAK,43,389	01	J.Aaltonen+	O1309
³ He, <i>x</i>	²³⁴ Np	CS	2SF JYV	4.2+07	5.9+07	Jour	RCA,91,557	03	J.Aaltonen+	O1354
³ He, <i>x</i>	²³⁵ Np	CS	2SF JYV	2.1+07	4.2+07	Jour	RAK,43,389	01	J.Aaltonen+	O1309
³ He, <i>x</i>	²³⁵ Np	CS	2SF JYV	4.6+07	5.9+07	Jour	RCA,91,557	03	J.Aaltonen+	O1354
³ He, <i>x</i>	²³⁶ Np	CS	2SF JYV	2.1+07	5.9+07	Jour	RAK,43,389	01	J.Aaltonen+	O1309
³ He, <i>x</i>	²³⁶ Pu	CS	2SF JYV	2.1+07	5.9+07	Jour	RAK,43,389	01	J.Aaltonen+	O1309
³ He, <i>x</i>	²³⁸ Pu	CS	2SF JYV	2.1+07	5.6+07	Jour	RAK,43,389	01	J.Aaltonen+	O1309

92 Uranium 238

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	²³⁹ U	CS	2UK HAR	1.0+03	2.0+05	Prog	EANDC(UK)-113	Jun 69	M.C.Moxon	20465

93 Neptunium 237

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,f</i>		CS	2SWTPSI	5.9+08		Jour	NP/A,764,1	06	H.U.Wenger+	O1284
<i>p,x</i>	Many	CS	2SWTPSI	5.9+08		Jour	NP/A,764,1	06	H.U.Wenger+	O1284
³ He, <i>x</i>	²³⁶ Pu	CS	2SF JYV	2.6+07	6.0+07	Jour	JALC,271,296	98	J.Aaltonen+	O1384
³ He, <i>x</i>	²³⁷ Pu	CS	2SF JYV	2.6+07	6.0+07	Jour	JALC,271,296	98	J.Aaltonen+	O1384

$^3\text{He,x}$ ^{238}Pu CS 2SF JYV 2.6+07 6.0+07 Jour JALC,271,296 98 J.Aaltonen+ O1384

94 Plutonium 240

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,f		CS	2BLGGHT	1.0+07	3.0+07	Jour	PR/C,23,2104	81	H.Thierens+	L0105
γ ,f		FY	2BLGGHT	1.2+07	3.0+07	Jour	PR/C,23,2104	81	H.Thierens+	L0105
γ ,f		KE	2BLGGHT	1.2+07	3.0+07	Jour	PR/C,23,2104	81	H.Thierens+	L0105
γ ,f	Many	FY	2BLGGHT	2.0+07		Jour	PR/C,23,2104	81	H.Thierens+	L0105
γ ,f	Many	KE	2BLGGHT	2.0+07		Jour	PR/C,23,2104	81	H.Thierens+	L0105
n,γ	^{241}Pu	SPC	2FR ILL	Maxwl		Jour	PR/C,57,1112	98	D.H.White+	22738

94 Plutonium 242

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{243}Pu	CS	2FR ILL	2.5-02		Jour	NIM/A,556,547	06	F.Marie+	22924

94 Plutonium 244

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,f		CS	2BLGGHT	1.0+07	2.9+07	Jour	PR/C,27,1117	83	H.Thierens+	L0106
γ ,f		FY	2BLGGHT	1.2+07	3.0+07	Jour	PR/C,27,1117	83	H.Thierens+	L0106
γ ,f		KE	2BLGGHT	1.2+07	3.0+07	Jour	PR/C,27,1117	83	H.Thierens+	L0106
γ ,f	Many	FY	2BLGGHT	2.0+07		Jour	PR/C,27,1117	83	H.Thierens+	L0106
γ ,f	Many	KE	2BLGGHT	2.0+07		Jour	PR/C,27,1117	83	H.Thierens+	L0106

95 Americium 243

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{244}Am	CS	2FR ILL	2.5-02		Jour	NIM/A,556,547	06	F.Marie+	22924