

Japan Charged-Particle Nuclear Reaction Data Group (JCPRG)

EXFOR : Recent Compilation List (Added in Sep 2004)

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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					
$^{12}\text{C},x$	Many	CS	4ZZZDUB	2.2+10	3.2+10	Jour	JP/G,28,1199	02	A.Korejwo+	A0660
$^{12}\text{C},x$	Many	CS	4ZZZDUB	4.3+10		Jour	JP/G,26,1171	00	A.Korejwo+	A0661

2 Helium 4

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},el$	^4He	DA	2GERTUE	1.2+06	3.0+06	Jour	PR/C,48,1420	93	P.Mohr+	D0147

4 Beryllium 9

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^{36}\text{Ar},x$	Many	CS	2GERGSI	3.8+10		Jour	NP/A,733,187	04	M.Caamano+	A0672

6 Carbon

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{11}C	CS	2GERJUL	1.2+07	2.0+08	Jour	ARI,60,939	04	K.Kettern+	D0165

6 Carbon 12

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ,abs		CS	4RUSMOS	2.0+07	2.6+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ,abs		INT	4RUSMOS	2.0+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
d,p	^{13}C	DAP	4RUSFEI	5.0+05	1.8+06	Rept	FEI-1341,	82	V.G.Balin+	D0108

7 Nitrogen

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p,x	^{11}C	CS	2GERJUL	6.8+06	2.0+08	Jour	ARI,60,939	04	K.Kettern+	D0165
p,x	^{13}N	CS	2GERJUL	2.3+07	8.9+07	Jour	ARI,60,939	04	K.Kettern+	D0165

8 Oxygen

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,x</i>	¹¹ C	CS	2GERJUL	5.4+07	2.0+08	Jour	ARI,60,939	04	K.Kettern+	D0165
<i>p,x</i>	¹³ N	CS	2GERJUL	5.4+07	2.0+08	Jour	ARI,60,939	04	K.Kettern+	D0165

8 Oxygen 16

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>d,α</i>	¹⁴ N	DAP	2ITYCAT	9.8+05	2.0+06	Jour	NC,14,692	73	S.Cavallaro+	D0152
<i>d,el</i>	¹⁶ O	DA	2ITYCAT	9.8+05	2.0+06	Jour	NC,14,692	73	S.Cavallaro+	D0152
<i>d,p</i>	¹⁷ O	DAP	2ITYCAT	9.8+05	2.0+06	Jour	NC,14,692	73	S.Cavallaro+	D0152

12 Magnesium 24

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,abs</i>		CS	4RUSMOS	1.6+07	2.8+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
<i>γ,abs</i>		INT	4RUSMOS	1.6+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

12 Magnesium 26

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,abs</i>		CS	4RUSMOS	1.6+07	2.8+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
<i>γ,abs</i>		INT	4RUSMOS	1.2+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

14 Silicon 28

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,abs</i>		CS	4RUSMOS	1.7+07	2.8+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
<i>γ,abs</i>		INT	4RUSMOS	1.7+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

16 Sulphur 34

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>γ,abs</i>		CS	4RUSMOS	1.2+07	2.5+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
<i>γ,abs</i>		INT	4RUSMOS	1.2+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

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Calcium

48

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.0+07	4.0+07	Jour	IZV,67,1479	03	V.A.Erokhova+	M0653

23

Vanadium

51

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.5+07	2.8+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.5+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

27

Cobalt

59

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^{22}\text{Ne},2n$	^{79}Rb	CS	4ZZZDUB	6.5+07	9.2+07	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{22}\text{Ne},3n$	^{78}Rb	CS	4ZZZDUB	6.5+07	1.1+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{22}\text{Ne},4n$	^{77}Rb	CS	4ZZZDUB	6.5+07	1.1+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{22}\text{Ne},5n$	^{76}Rb	CS	4ZZZDUB	9.6+07	1.2+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595

28

Nickel

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,n	incl	INT	2ITYTUR	1.0+07	2.8+07	Jour	NP,67,178	65	G.Baciu+	M0541

28

Nickel

58

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.2+07	3.0+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.2+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
p,α	^{55}Co	CS	2NEDAMS	7.1+06	5.1+07	Jour	RRL,28,9	77	G.A.Brinkman+	D0162
$p,n+p$	^{57}Ni	CS	2NEDAMS	1.2+07	5.1+07	Jour	RRL,28,9	77	G.A.Brinkman+	D0162
$d,n+\alpha$	^{55}Co	CS	2NEDAMS	2.5+07		Jour	RRL,28,9	77	G.A.Brinkman+	D0162
$d,n+d$	^{57}Ni	CS	2NEDAMS	3.6+07		Jour	RRL,28,9	77	G.A.Brinkman+	D0162
$\alpha,n+\alpha$	^{57}Ni	CS	2NEDAMS	4.8+07		Jour	RRL,28,9	77	G.A.Brinkman+	D0162

28

Nickel

60

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.2+07	3.0+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.2+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

<i>p,x</i>	⁸¹ Rb	TT	2NEDENT	1.6+07	2.6+07	Jour	ARI,35,475	84	J.J.L.Mulders	D0115
<i>p,x</i>	⁸² Rb	TT	2NEDENT	7.5+06	2.6+07	Jour	ARI,35,475	84	J.J.L.Mulders	D0115
<i>p,x</i>	⁸³ Rb	TT	2NEDENT	5.2+06	2.6+07	Jour	ARI,35,475	84	J.J.L.Mulders	D0115
<i>p,x</i>	⁸⁴ Rb	TT	2NEDENT	5.3+06	2.6+07	Jour	ARI,35,475	84	J.J.L.Mulders	D0115
<i>p,x</i>	⁸⁶ Rb	TT	2NEDENT	5.3+06	2.0+07	Jour	ARI,35,475	84	J.J.L.Mulders	D0115

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Yttrium

89

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.5+07	2.4+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.5+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
¹⁶ O,x	Many	DA	3INDTRM	8.1+07		Jour	PR/C,68,051602	03	A.Ray+	A0673
¹⁶ O,x	Many	DE	3INDTRM	9.6+07		Jour	PR/C,68,051602	03	A.Ray+	A0673

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Zirconium

90

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.5+07	2.4+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.5+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

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Molybdenum

92

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.4+07	2.5+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656

42

Molybdenum

93

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		INT	4RUSMOS	1.4+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

45

Rhodium

103

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.0+07	2.6+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.0+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
α ,2 <i>n</i>	¹⁰⁵ Ag	CS	3INDVEC	3.2+07	5.0+07	Jour	JPJ,70,2903	01	A.Agarwal+	D0123
α ,3 <i>n</i>	¹⁰⁴ Ag	CS	3INDVEC	3.2+07	5.0+07	Jour	JPJ,70,2903	01	A.Agarwal+	D0123
α ,4 <i>n</i>	¹⁰³ Ag	CS	3INDVEC	3.6+07	5.0+07	Jour	JPJ,70,2903	01	A.Agarwal+	D0123
²² Ne,2 <i>n</i>	¹²³ Cs	CS	4ZZZDUB	7.6+07	1.1+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
²² Ne,3 <i>n</i>	¹²² Cs	CS	4ZZZDUB	7.6+07	1.2+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
²² Ne,4 <i>n</i>	¹²¹ Cs	CS	4ZZZDUB	7.6+07	1.5+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595

$^{22}\text{Ne},5n$	^{120}Cs	CS	4ZZZDUB	7.6+07	1.6+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{22}\text{Ne},6n$	^{119}Cs	CS	4ZZZDUB	1.1+08	1.6+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{22}\text{Ne},7n$	^{118}Cs	CS	4ZZZDUB	1.3+08	1.6+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595

47 Silver

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

γ,n	incl	INT	4RUSMOS	9.4+06		Jour	IZV,33,(12),2074	69	B.S.Ishkhanov+	M0524
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47 Silver 107

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

$^{18}\text{O},2n$	^{123}Cs	CS	4ZZZDUB	5.8+07	1.1+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{18}\text{O},3n$	^{122}Cs	CS	4ZZZDUB	5.8+07	1.1+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{18}\text{O},4n$	^{121}Cs	CS	4ZZZDUB	6.4+07	1.2+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{18}\text{O},5n$	^{120}Cs	CS	4ZZZDUB	8.6+07	1.2+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{18}\text{O},6n$	^{119}Cs	CS	4ZZZDUB	8.6+07	1.2+08	Prog	JINR-P7-11661	78	P.Klapish+	A0595
$^{18}\text{O},n$	^{124}Cs	CS	4ZZZDUB	5.8+07	7.9+07	Prog	JINR-P7-11661	78	P.Klapish+	A0595

47 Silver 109

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

γ,n	incl	INT	4RUSMOS	9.4+06		Jour	IZV,33,(12),2074	69	B.S.Ishkhanov+	M0524
p,el	^{109}Ag	DA	4RUSFEI	3.2+06	6.2+06	Jour	YF,37,529	83	A.I.Baryshnikov+	D0094

50 Tin 112

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

p,x	^{110}Sn	CS	4ZZZDUB	3.6+09		Priv	DEMEKHINA	Feb 04	A.R.Balabekyan+	A0669
d,p	^{113}Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
d,x	^{110}Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593

50 Tin 118

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

p,x	Many	CS	4ZZZDUB	3.6+09		Priv	DEMEKHINA	Feb 04	A.R.Balabekyan+	A0669
$d,2n$	^{118}Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
$d,5n$	^{115}Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
d,x	^{110}Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
d,x	^{117}Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593

50

Tin

120

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,x</i>	Many	CS	4ZZZDUB	6.6+08	3.6+09	Priv	DEMEKHINA	Feb 04	A.R.Balabekyan+	A0669
<i>d,2n</i>	¹²⁰ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,4n</i>	¹¹⁸ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,6n</i>	¹¹⁶ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,7n</i>	¹¹⁵ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹⁰ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹³ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹⁷ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593

50

Tin

124

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	8.0+06	2.2+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	8.0+06		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
<i>p,x</i>	Many	CS	4ZZZDUB	3.6+09		Priv	DEMEKHINA	Feb 04	A.R.Balabekyan+	A0669
<i>d,10n</i>	¹¹⁶ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,11n</i>	¹¹⁵ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,2n</i>	¹²⁴ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,4n</i>	¹²² Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,6n</i>	¹²⁰ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,8n</i>	¹¹⁸ Sb	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹⁰ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹³ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹¹⁷ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593
<i>d,x</i>	¹²³ Sn	CS	4ZZZDUB	7.3+09		Conf	2003MOSCOW,,162	03	A.R.Balabekyan+	A0593

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Tellurium

122

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>d,p</i>	¹²³ Te	DAP	2GERMUU	1.7+07		Jour	NP/A,673,85	00	V.Bondarenko+	D0158

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Tellurium

128

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>d,p</i>	¹²⁹ Te	DAP	2GERMUU	1.8+07	2.4+07	Jour	NP/A,716,3	03	H.-F.Wirth+	D0151
<i>d,p</i>	¹²⁹ Te	POD	2GERMUU	1.8+07		Jour	NP/A,716,3	03	H.-F.Wirth+	D0151

52

Tellurium

130

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>d,t</i>	¹²⁹ Te	DAP	2GERMUU	2.4+07		Jour	NP/A,716,3	03	H.-F.Wirth+	D0151
<i>d,t</i>	¹²⁹ Te	POD	2GERMUU	2.4+07		Jour	NP/A,716,3	03	H.-F.Wirth+	D0151

60

Neodymium

142

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.2+07	2.0+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.2+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

63

Europium

151

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
α ,n	¹⁵⁴ Tb	CS	4UKRIJI	1.6+07	2.6+07	Conf	89TASHKE,,372	89	V.I.Gavriluk+	A0680

64

Gadolinium

160

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	8.0+06	2.9+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	8.0+06		Jour	IZV,67,656	03	V.V.Varlamov+	M0656

70

Ytterbium

176

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
²² Ne,x	¹⁹² Au	CS	4ZZZDUB	1.1+08	1.7+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594
²² Ne,x	¹⁹³ Au	CS	4ZZZDUB	1.1+08	1.7+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594
²² Ne,x	¹⁹⁴ Au	CS	4ZZZDUB	1.1+08	1.7+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594

71

Lutetium

176

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
²² Ne,x	¹⁹¹ Au	CS	4ZZZDUB	1.0+08	1.7+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594
²² Ne,x	¹⁹² Au	CS	4ZZZDUB	1.0+08	2.2+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594
²² Ne,x	¹⁹³ Au	CS	4ZZZDUB	1.0+08	2.2+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594
²² Ne,x	¹⁹⁴ Au	CS	4ZZZDUB	1.0+08	2.2+08	Jour	YF,33,1453	81	H.Bruchertseifer+	A0594

73

Tantalum

181

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,abs		CS	4RUSMOS	1.0+07	2.5+07	Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,abs		INT	4RUSMOS	1.0+07		Jour	IZV,67,656	03	V.V.Varlamov+	M0656
γ ,el	¹⁸¹ Ta	DA	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0651
γ ,el	¹⁸¹ Ta	DA	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0657
γ ,el	¹⁸¹ Ta	DA	3ISLNEG	9.0+06	1.1+07	Jour	PR/C,50,2000	94	S.Kahane+	M0651
γ ,el	¹⁸¹ Ta	DA	3ISLNEG	9.0+06	1.1+07	Jour	PR/C,50,2000	94	S.Kahane+	M0657
γ ,inel	¹⁸¹ Ta	DAP	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0651
γ ,inel	¹⁸¹ Ta	DAP	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0657

77

Iridium

193

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
α ,n	¹⁹⁶ Au	CS	4UKRIJI	1.6+07	5.1+07	Conf	89TASHKE,,374	89	V.I.Gavriluk+	A0681

80

Mercury

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
p ,x	¹⁹⁸ Tl	TT	2FR CSN	1.4+07	2.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	¹⁹⁹ Tl	TT	2FR CSN	1.4+07	2.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	¹⁹⁹ Tl	TT	2FR SAC	1.4+07	5.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰⁰ Tl	TT	2FR CSN	1.4+07	2.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰⁰ Tl	TT	2FR SAC	1.4+07	5.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰¹ Tl	TT	2FR CSN	1.4+07	2.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰¹ Tl	TT	2FR SAC	1.4+07	5.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰² Tl	TT	2FR CSN	1.4+07	2.0+07	Jour	RRL,23,131	75	D.Comar+	D0148
p ,x	²⁰² Tl	TT	2FR SAC	5.0+07		Jour	RRL,23,131	75	D.Comar+	D0148
d ,x	¹⁹⁹ Tl	TT	2UK HHL	1.5+07		Jour	RRL,23,131	75	D.Comar+	D0148
d ,x	²⁰⁰ Tl	TT	2UK HHL	1.5+07		Jour	RRL,23,131	75	D.Comar+	D0148
d ,x	²⁰¹ Tl	TT	2UK HHL	1.5+07		Jour	RRL,23,131	75	D.Comar+	D0148
d ,x	²⁰² Tl	TT	2UK HHL	1.5+07		Jour	RRL,23,131	75	D.Comar+	D0148

82

Lead

206

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,el	²⁰⁶ Pb	DA	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0651
γ ,el	²⁰⁶ Pb	DA	3ISLNEG	1.1+07		Jour	PR/C,50,2000	94	S.Kahane+	M0657
γ ,el	²⁰⁶ Pb	DA	3ISLNEG	9.0+06	1.1+07	Jour	PR/C,50,2000	94	S.Kahane+	M0651
γ ,el	²⁰⁶ Pb	DA	3ISLNEG	9.0+06	1.1+07	Jour	PR/C,50,2000	94	S.Kahane+	M0657

92**Uranium**

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,f</i>	Many	CS	2SWDUPP	1.7+08		Jour	JIN,26,1639	64	E.Hagebo+	D0153
<i>p,f</i>	Many	?	2SWDUPP	1.7+08		Jour	JIN,26,1639	64	E.Hagebo+	D0153

94**Plutonium****244**

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
γ ,f	Many	FY	4ZZZDUB	0.0+00	2.5+07	Jour	YF,66,1251	03	Yu.P.Gangrsky+	M0655