

## The Network of Nuclear Reaction Data Centres (NRDC)

### EXFOR : Recent Compilation (Added in February 2008)

EXFOR is a world-wide database for experimental neutron induced, charged-particle induced and photonuclear reaction compiled by Nuclear Reaction Data Centres Network coordinated by IAEA Nuclear Data Section. This list gives newly compiled data to EXFOR. *This list consists of tables titled by target nuclide.*

Retrieval service is available at:

<http://www.jcprg.org/exfor/> (JCPRG)

<http://www-nds.iaea.org/exfor/> IAEA Nuclear Data Section (IAEA-NDS)

<http://www.nndc.bnl.gov/exfor/> National Nuclear Data Center (NNDC)

<http://cdfc.sinp.msu.ru/exfor/> Centre for Photonuclear Experiments Data (CDFE)

<http://www.nea.fr/html/dbdata/x4/> NEA Data Bank (NEA-DB)

[http://www.ippe.obninsk.ru/podr/cjd/page4\\_9\\_cjd.html](http://www.ippe.obninsk.ru/podr/cjd/page4_9_cjd.html) Center Jadernykh Dan-nykh(CJD)

#### 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	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)

**1 Hydrogen 1**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>1</sup> H	DA	1USABRK	4.2+06	9.0+07	Jour	PR,75,351	Feb 49	J.Hadley+	11167

**1 Hydrogen 2**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>2</sup> H	DA	2JPNOSA	2.5+08	2.5+08	Jour	PR/C,76,014004	07	Y.Maeda+	22983
<i>n</i> ,el	<sup>2</sup> H	POD	2JPNOSA	2.5+08	2.5+08	Jour	PR/C,76,014004	07	Y.Maeda+	22983
<i>p</i> ,el	<sup>2</sup> H	POD	2JPNOSA	2.5+08	2.5+08	Jour	PR/C,76,014004	07	Y.Maeda+	22983

**3 Lithium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,abs		?	1CANMRC	Maxwl		Jour	CJR/A,25,73	Mar 47	F.W.Fenning+	11156
<i>n</i> ,el	<i>nat</i> Li	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123

**3 Lithium 7**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>α</i> , <i>p</i>	<sup>10</sup> Be	DAP	4KASKAZ	5.0+07	5.0+07	Jour	IZV,39,2160	75	N.T.Burtebaev+	F0868

**4 Beryllium 9**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>9</sup> Be	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
<i>d</i> ,el	<sup>9</sup> Be	DA	4RUSTPI	1.4+07	1.4+07	Jour	YF,15,670	72	V.A.Matusevich+	F0878

**5 Boron 10**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<sup>14</sup> N, <sup>12</sup> C	<sup>12</sup> C	DAP	2GERUEN	1.4+07	1.8+07	Jour	NP/A,179,23	72	H.Voit+	F0856
<sup>14</sup> N, <i>α</i>	<sup>20</sup> Ne	DAP	2GERUEN	1.3+07	1.8+07	Jour	NP/A,179,23	72	H.Voit+	F0856

**6 Carbon**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,non		CS	2UK OXF	5.5+07	1.4+08	Jour	PRS/A,236,41	56	R.G.P.Voss+	21370
<i>n</i> ,x	<sup>7</sup> Be	CS	3SAFITH	1.1+08	1.1+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150

**6 Carbon 12**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>12</sup> C	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
<i>n</i> ,el	<sup>12</sup> C	DA	2SWDUPP	9.6+07	9.6+07	Jour	PR/C,68,064605	03	J.Klug+	22847
<i>n</i> ,inel	<sup>12</sup> C	CSP	1USARIC	1.4+06	1.4+06	Jour	PR,94,941	May 54	L.C.Thompson+	11362
<i>d</i> ,el	<sup>12</sup> C	DA	4RUSTPI	1.4+07	1.4+07	Jour	YF,15,670	72	V.A.Matusevich+	F0878
<i>t</i> , <sup>3</sup> He	<sup>12</sup> B	DAE	2NEDKVI	1.3+08	1.3+08	Jour	PR/C,73,014616	06	J.Guillot+	F0863
<i>t</i> , <sup>3</sup> He	<sup>12</sup> B	DAP	2NEDKVI	1.3+08	1.3+08	Jour	PR/C,73,014616	06	J.Guillot+	F0863
<sup>3</sup> He,inel	<sup>12</sup> C	DAP	4RUSKUR	3.6+07	3.6+07	Jour	YF,11,43	70	K.P.Artemov+	F0870
<sup>3</sup> He, <i>t</i>	<sup>12</sup> N	DAP	4RUSKUR	3.6+07	3.6+07	Jour	YF,11,43	70	K.P.Artemov+	F0870
$\alpha$ , <sup>6</sup> Li	<sup>10</sup> B	DAP	4UKRIJD	9.0+07	9.0+07	Jour	NP/A,534,349	91	L.Glowacka+	F0857
$\alpha$ , <sup>7</sup> Li	<sup>9</sup> B	DAP	4UKRIJD	9.0+07	9.0+07	Jour	NP/A,534,349	91	L.Glowacka+	F0857
$\alpha$ , <sup>7</sup> Be	<sup>9</sup> Be	DAP	4UKRIJD	9.0+07	9.0+07	Jour	NP/A,534,349	91	L.Glowacka+	F0857
<sup>9</sup> Be, $\alpha$	<sup>17</sup> O	DAP	4RUSKUR	2.6+07	2.6+07	Jour	YF,22,924	75	N.I.Venikov+	F0872
<sup>13</sup> C, $\alpha$	<sup>21</sup> Ne	DAP	2GERUEN	1.2+07	1.6+07	Jour	NP/A,179,23	72	H.Voit+	F0856
<sup>13</sup> C, <i>p</i>	<sup>24</sup> Na	DAP	2GERUEN	1.2+07	1.6+07	Jour	NP/A,179,23	72	H.Voit+	F0856
<sup>14</sup> N, $\alpha$	<sup>22</sup> Na	DAP	2GERUEN	1.4+07	1.9+07	Jour	NP/A,179,23	72	H.Voit+	F0856
<sup>14</sup> N, <i>p</i>	<sup>25</sup> Mg	DAP	2GERUEN	1.4+07	1.9+07	Jour	NP/A,179,23	72	H.Voit+	F0856

**7 Nitrogen 14**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>14</sup> N	DA	1USAORL	4.3+06	8.6+06	Rept	ORNL-4805	Feb 74	F.G.Perey+	10283
<i>n</i> ,inel	<sup>14</sup> N	DAP	1USAORL	6.0+06	8.6+06	Rept	ORNL-4805	Feb 74	F.G.Perey+	10283

**7 Nitrogen 15**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,tot		CS	1USALOK	2.2+06	4.5+06	Jour	PR,135,B1347	64	D.B.Fossan+	11333

**8 Oxygen 16**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,inel	<sup>16</sup> O	CSP	1USARIC	1.4+07	1.4+07	Jour	PR,94,941	May 54	L.C.Thompson+	11362
<i>d</i> ,el	<sup>16</sup> O	DA	4RUSTPI	1.4+07	1.4+07	Jour	YF,15,670	72	V.A.Matusevich+	F0878

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## Fluorine

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Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,t$	$^{20}\text{Ne}$	CSP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885
$\alpha,t$	$^{20}\text{Ne}$	DAP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885

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## Neon

20

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,\text{inel}$	$^{20}\text{Ne}$	DAP	2FR PAR	2.0+08	2.0+08	Jour	NP/A,464,315	87	A.Willis+	F0849

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## Neon

22

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,\text{inel}$	$^{22}\text{Ne}$	DAP	2FR PAR	2.0+08	2.0+08	Jour	NP/A,464,315	87	A.Willis+	F0849

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## Magnesium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{el}$	$^{nat}\text{Mg}$	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,\text{inel}$	$^{nat}\text{Mg}$	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,\text{sct}$	$^{nat}\text{Mg}$	CS	1USAANL	2.2+06	4.5+06	Conf	65ANTWERP,,288(103)	Jul 65	A.J.Elwyn	11506
$n,\text{sct}$	$^{nat}\text{Mg}$	DA	1USAANL	2.2+06	4.5+06	Conf	65ANTWERP,,288(103)	Jul 65	A.J.Elwyn	11506
$n,\text{sct}$	$^{nat}\text{Mg}$	DA	1USATEX	2.8+06	2.8+06	Jour	RMF,4,1	54	P.Okhuysen+	11498

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## Magnesium

24

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{24}\text{Mg}$	CSP	1USADAV	1.7+07	4.2+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151

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## Magnesium

26

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{26}\text{Mg}$	CSP	1USADAV	1.7+07	3.2+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151

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## Aluminium

26

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,0$		RP	2ZZZGEL			Jour	PR/C,76,045804	Sep 07	L.Desmet+	22890
$n,\alpha$	$^{23}\text{Na}$	CS	2ZZZGEL	Maxwl		Jour	PR/C,76,045804	Sep 07	L.Desmet+	22890

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## Aluminium

27

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\alpha$	$^{24}\text{Na}$	CS	2AUSIRK	1.4+07	1.5+07	Jour	ZP,237,155	Sep 70	H.Vonach+	20111
$n,d$	$^{26}\text{Mg}$	CSP	1USADAV	6.5+06	4.2+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151
$n,el$	$^{27}\text{Al}$	DA	2ITYTUR	1.4+07	1.4+07	Jour	PR,140,B835	Nov 65	G.C.Bonazzola+	21080
$n,el$	$^{27}\text{Al}$	DA	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$n,el$	$^{27}\text{Al}$	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
$n,inel$	$^{27}\text{Al}$	CSP	2ITYTUR	1.4+07	1.4+07	Jour	PR,140,B835	Nov 65	G.C.Bonazzola+	21080
$n,inel$	$^{27}\text{Al}$	CSP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$n,inel$	$^{27}\text{Al}$	CSP	1USADAV	6.5+06	4.2+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151
$n,inel$	$^{27}\text{Al}$	DAP	2ITYTUR	1.4+07	1.4+07	Jour	PR,140,B835	Nov 65	G.C.Bonazzola+	21080
$n,inel$	$^{27}\text{Al}$	DAP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$n,non$		CS	2UK OXF	5.5+07	1.4+08	Jour	PRS/A,236,41	56	R.G.P.Voss+	21370
$n,x$	$^{22}\text{Na}$	CS	3SAFITH	1.1+08	1.1+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150
$n,x$	$^{24}\text{Na}$	CS	3SAFITH	7.4+07	1.1+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150
$\alpha,t$	$^{28}\text{Si}$	CSP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885
$\alpha,t$	$^{28}\text{Si}$	DAP	4RUSMOS	2.1+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885

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## Silicon

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,el$	$^{nat}\text{Si}$	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,inel$	$^{nat}\text{Si}$	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,x$	$^{22}\text{Na}$	CS	3SAFITH	7.1+07	1.1+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150
$n,x$	$^{24}\text{Na}$	CS	3SAFITH	1.1+08	1.1+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150
$n,tot$		CS	1USACOL	3.0+06	8.0+06	Jour	RSI,36,887	65	B.M.Rustad+	11586

## 14

## Silicon

28

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,el$	$^{28}\text{Si}$	DA	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$n,inel$	$^{28}\text{Si}$	CSP	1USADAV	1.7+07	6.4+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151
$n,inel$	$^{28}\text{Si}$	CSP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$n,inel$	$^{28}\text{Si}$	DAP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
$p,el$	$^{28}\text{Si}$	DA	4RUSMOS	5.5+06	6.2+06	Jour	IZV,37,1083	73	V.B.Gubin+	F0877

**15                                  Phosphorus                                  31**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>31</sup> P	DA	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
<i>n</i> ,inel	<sup>31</sup> P	CSP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
<i>n</i> ,inel	<sup>31</sup> P	DAP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046

**16                                  Sulphur**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>nat</sup> S	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527

**16                                  Sulphur                                  32**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>32</sup> S	DA	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
<i>n</i> ,inel	<sup>32</sup> S	CSP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
<i>n</i> ,inel	<sup>32</sup> S	DAP	2UK HAR	6.0+06	6.0+06	Jour	NP/A,113,(3),564	Jun 68	J.Martin+	21046
<i>n</i> , <i>p</i>	<sup>32</sup> P	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.Al-Abyad+	22857
<i>p</i> ,el	<sup>32</sup> S	DA	4RUSMOS	4.8+06	6.2+06	Jour	IZV,37,1083	73	V.B.Gubin+	F0877
<i>p</i> ,el	<sup>32</sup> S	DA	4RUSMOS	5.4+06	5.4+06	Jour	IZV,38,2574	74	V.B.Gubin+	F0869
<i>p</i> ,el	<sup>32</sup> S	DA	4RUSMOS	5.4+06	5.9+06	Jour	IZV,37,1083	73	V.B.Gubin+	F0877
<i>p</i> ,el	<sup>32</sup> S	DA	4RUSMOS	5.4+06	6.4+06	Jour	IZV,38,2574	74	V.B.Gubin+	F0869

**16                                  Sulphur                                  34**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p</i> ,el	<sup>34</sup> S	DA	4RUSMOS	5.4+06	6.2+06	Jour	IZV,38,2574	74	V.B.Gubin+	F0869

**17                                  Chlorine                                  36**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,0		RP	2ZZZGEL			Jour	PR/C,75,034617	07	L.Desmet+	22965
<i>n</i> , <i>p</i>	<sup>36</sup> S	?	2ZZZGEL	5.0+02	2.5+05	Jour	PR/C,75,034617	07	L.Desmet+	22965

**20                                  Calcium                                  40**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,inel	<sup>40</sup> Ca	CSP	1USADAV	1.7+07	3.2+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151

**20 Calcium 48**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$t, ^3\text{He}$	$^{48}\text{K}$	DAE	2NEDKVI	1.3+08	1.3+08	Jour	PR/C,73,014616	06	J.Guillot+	F0863

**21 Scandium 42**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	$^{44}\text{Ti}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

**21 Scandium 44**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	$^{46}\text{Ti}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

**21 Scandium 46**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	$^{48}\text{Ti}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

**21 Scandium 50**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	$^{52}\text{Ti}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

**22 Titanium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n, el$	$^{nat}\text{Ti}$	DA	1USAORL	4.1+06	8.6+06	Rept	ORNL-4810	Oct 73	W.E.Kinney+	10285
$n, el$	$^{nat}\text{Ti}$	?	1USAORL	5.2+06	5.2+06	Rept	ORNL-4810	Oct 73	W.E.Kinney+	10285
$n, inel$	$^{nat}\text{Ti}$	DAE	1USAORL	5.2+06	8.6+06	Rept	ORNL-4810	Oct 73	W.E.Kinney+	10285
$n, inel$	$^{48}\text{Ti}$	DAP	1USAORL		8.6+06	Rept	ORNL-4810	Oct 73	W.E.Kinney+	10285

**23 Vanadium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,tot</i>		CS	1USACOL	2.5+06	2.5+06	Jour	RSI,36,887	65	B.M.Rustad+	11586

**23 Vanadium 50**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	<sup>51</sup> V	CS	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,338,(4),371	91	S.Michaelsen+	22221
<i>n,γ</i>	<sup>51</sup> V	SPC	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,338,(4),371	91	S.Michaelsen+	22221

**23 Vanadium 51**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,γ</i>	<sup>52</sup> V	SPC	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,338,(4),371	91	S.Michaelsen+	22221
<i>α,t</i>	<sup>52</sup> Cr	CSP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885
<i>α,t</i>	<sup>52</sup> Cr	DAP	4RUSMOS	2.1+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885

**24 Chromium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,el</i>	<sup>nat</sup> Cr	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
<i>n,inel</i>	<sup>nat</sup> Cr	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527

**24 Chromium 50**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>p,inel</i>	<sup>50</sup> Cr	DA	4RUSSUL	5.7+06	6.0+06	Jour	IZV,42,169	78	Yu.F.Andronov+	F0876

**24 Chromium 52**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,inel</i>	<sup>52</sup> Cr	CS	2AUSIRK	1.4+07	1.4+07	Jour	APA,23,31	May 66	S.Tagesen+	20032
<i>p,el</i>	<sup>52</sup> Cr	DA	4RUSSUL	5.6+06	6.0+06	Jour	IZV,42,169	78	Yu.F.Andronov+	F0876
<i>p,inel</i>	<sup>52</sup> Cr	DA	4RUSSUL	5.6+06	6.0+06	Jour	IZV,42,169	78	Yu.F.Andronov+	F0876



24

## Chromium

54

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{56}\text{Mn}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

25

## Manganese

52

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{54}\text{Fe}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

25

## Manganese

54

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{56}\text{Fe}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

25

## Manganese

55

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{tot}$		CS	1USAKAP	2.2+06	5.6+06	Jour	RSI,28,514	Jul 57	R.Fulwood+	11681

25

## Manganese

56

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{58}\text{Fe}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

26

## Iron

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,x+\gamma$	inclusive	DAE	2JPNTOH	6.0+06	3.3+07	Jour	NST,31,(11),1133	Nov 94	E.Tanabe+	23010
$n,x+\gamma$	inclusive	DAP	2JPNTOH	6.0+06	3.3+07	Jour	NST,31,(11),1133	Nov 94	E.Tanabe+	23010

26

## Iron

54

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{54}\text{Fe}$	?	1USADAV	6.5+06	6.4+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151

26

Iron

56

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{55}\text{Fe}$	CSP	1USADAV	1.7+07	6.4+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151
$n,\text{inel}$	$^{56}\text{Fe}$	CSP	1USADAV	6.5+06	6.4+07	Jour	NIM/B,260,508	07	C.M.Castaneda+	14151
$^7\text{Li},^6\text{He}$	$^{57}\text{Co}$	DAP	3AULCBR	3.8+07	3.8+07	Jour	NP/A,470,241	87	J.B.A.England+	F0861

27

Cobalt

56

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{58}\text{Ni}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

27

Cobalt

58

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{60}\text{Ni}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

27

Cobalt

59

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,t$	$^{60}\text{Ni}$	CSP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885
$\alpha,t$	$^{60}\text{Ni}$	DAP	4RUSMOS	2.5+07	2.5+07	Jour	NP/A,298,206	78	V.M.Lebedev+	F0885

27

Cobalt

60

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{62}\text{Ni}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

28

Nickel

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{el}$	$^{nat}\text{Ni}$	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,\text{inel}$	$^{nat}\text{Ni}$	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527

28

Nickel

58

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$d, {}^3\text{He}$	${}^{57}\text{Co}$	DAP	2GERJUL	7.8+07	7.8+07	Jour	NP/A,438,429	85	A.Marinov+	F0852
$t, {}^3\text{He}$	${}^{58}\text{Co}$	DAE	2NEDKVI	1.3+08	1.3+08	Jour	PR/C,73,014616	06	J.Guillot+	F0863
${}^9\text{Be}, \text{el}$	${}^{58}\text{Ni}$	DA	4RUSKUR	2.3+07	2.3+07	Jour	YF,23,3	76	Yu.A.Glukhov+	F0873
${}^9\text{Be}, \text{inel}$	${}^{58}\text{Ni}$	DAP	4RUSKUR	2.3+07	2.3+07	Jour	YF,23,3	76	Yu.A.Glukhov+	F0873

28

Nickel

60

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	${}^{62}\text{Cu}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

28

Nickel

62

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$d, p$	${}^{63}\text{Ni}$	DAP	4RUSSUL	2.8+06	2.8+06	Jour	YF,11,273	70	V.F.Litvin+	F0875

29

Copper

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n, \text{el}$	${}^{\text{nat}}\text{Cu}$	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
$n, \text{non}$		CS	2UK OXF	5.5+07	1.4+08	Jour	PRS/A,236,41	56	R.G.P.Voss+	21370

29

Copper

60

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	${}^{62}\text{Zn}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

29

Copper

62

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha, d$	${}^{64}\text{Zn}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

29

Copper

64

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

$\alpha,d$	$^{66}\text{Zn}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855
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29

Copper

66

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

$\alpha,d$	$^{68}\text{Zn}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855
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30

Zinc

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

$n,el$	$^{nat}\text{Zn}$	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,inel$	$^{nat}\text{Zn}$	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527

30

Zinc

64

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

$n,2n$	$^{63}\text{Zn}$	CS	1USAQTY	1.3+06	1.8+06	Jour	NUK,7,117	65	F.Gabbard+	11814
$n,p$	$^{64}\text{Cu}$	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.AI-Abyad+	22857
$\alpha,el$	$^{64}\text{Zn}$	DA	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865
$\alpha,inel$	$^{64}\text{Zn}$	DAP	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865

30

Zinc

66

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

$\alpha,el$	$^{66}\text{Zn}$	DA	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865
$\alpha,inel$	$^{66}\text{Zn}$	DAP	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865

30

Zinc

67

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

$n,p$	$^{67}\text{Cu}$	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.AI-Abyad+	22857
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30

Zinc

68

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

$\alpha,el$	$^{68}\text{Zn}$	DA	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865
$\alpha,inel$	$^{68}\text{Zn}$	DAP	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865

30 Zinc 70

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,el$	$^{70}\text{Zn}$	DA	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865
$\alpha,inel$	$^{70}\text{Zn}$	DAP	4KASKAZ	2.9+07	5.0+07	Jour	IZV,39,2152	75	K.B.Baktybaev+	F0865

31 Gallium 66

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{68}\text{Ge}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

31 Gallium 68

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{70}\text{Ge}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

32 Germanium 70

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,inel$	$^{70}\text{Ge}$	DAP	2FR PAR	2.2+07	2.2+07	Jour	NP/A,453,389	86	L.H.Rosier+	F0848

32 Germanium 72

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,inel$	$^{72}\text{Ge}$	DAP	2FR PAR	2.2+07	2.2+07	Jour	NP/A,453,389	86	L.H.Rosier+	F0848

32 Germanium 74

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,inel$	$^{74}\text{Ge}$	DAP	2FR PAR	2.2+07	2.2+07	Jour	NP/A,453,389	86	L.H.Rosier+	F0848

32 Germanium 76

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p,inel$	$^{76}\text{Ge}$	DAP	2FR PAR	2.2+07	2.2+07	Jour	NP/A,453,389	86	L.H.Rosier+	F0848

33

Arsenic

72

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{74}\text{Se}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

33

Arsenic

74

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,d$	$^{76}\text{Se}$	DAP	2GERBON	5.5+07	5.5+07	Jour	NP/A,569,421	94	U.Fister+	F0855

36

Krypton

84

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$d,^3\text{He}$	$^{83}\text{Br}$	DAP	2GERKFK	5.2+07	5.2+07	Jour	NP/A,455,381	86	A.Pfeiffer+	F0827
$d,^3\text{He}$	$^{83}\text{Br}$	POD	2GERKFK	5.2+07	5.2+07	Jour	NP/A,455,381	86	A.Pfeiffer+	F0827

36

Krypton

86

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$d,^3\text{He}$	$^{85}\text{Br}$	DAP	2GERKFK	5.2+07	5.2+07	Jour	NP/A,455,381	86	A.Pfeiffer+	F0827
$d,^3\text{He}$	$^{85}\text{Br}$	POD	2GERKFK	5.2+07	5.2+07	Jour	NP/A,455,381	86	A.Pfeiffer+	F0827

39

Yttrium

89

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,p$	$^{89}\text{Sr}$	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.Al-Abyad+	22857
$p,el$	$^{89}\text{Y}$	DA	4RUSMOS	5.4+06	6.3+06	Jour	IZV,38,2162	75	E.A.Romanovskij+	F0864

40

Zirconium

90

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,p$	$^{90}\text{Y}$	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.Al-Abyad+	22857
$\alpha,inel$	$^{90}\text{Zr}$	DAP	2GERMPH	3.5+07	3.5+07	Jour	NP/A,455,399	86	M.Lahanas+	F0847

**40                                  Zirconium                                  96**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha$ ,el	<sup>96</sup> Zr	DA	2GERMPH	3.5+07	3.5+07	Jour	NP/A,455,399	86	M.Lahanas+	F0847
$\alpha$ ,inel	<sup>96</sup> Zr	DAP	2GERMPH	3.5+07	3.5+07	Jour	NP/A,455,399	86	M.Lahanas+	F0847

**41                                  Niobium                                  89**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p$ ,el	<sup>89</sup> Nb	DA	4RUSMOS	5.6+06	6.3+06	Jour	IZV,38,2162	75	E.A.Romanovskij+	F0864

**41                                  Niobium                                  93**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$p$ ,el	<sup>93</sup> Nb	DA	4RUSMOS	5.9+06	6.4+06	Jour	IZV,38,2162	75	E.A.Romanovskij+	F0864

**48                                  Cadmium                                  96**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n$ ,el	<sup>nat</sup> Cd	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n$ ,el	<sup>nat</sup> Cd	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
$n$ ,inel	<sup>nat</sup> Cd	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n$ ,non		CS	2UK OXF	5.5+07	1.4+08	Jour	PRS/A,236,41	56	R.G.P.Voss+	21370

**48                                  Cadmium                                  110**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n$ , $p$	<sup>110</sup> Ag	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**48                                  Cadmium                                  112**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n$ , $p$	<sup>112</sup> Ag	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**48                                  Cadmium                                  114**

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

<i>n,p</i>	<sup>114</sup> Ag	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540
				<b>49</b>		<b>Indium</b>			<b>113</b>	
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,γ</i>	<sup>114</sup> In	CS	1USACOR	Maxwl		Jour	BAP,12,544(GH2)	67	D.Clark+	12609
				<b>49</b>		<b>Indium</b>			<b>115</b>	
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,γ</i>	<sup>116</sup> In	CS	1USACOR	Maxwl		Jour	BAP,12,544(GH2)	67	D.Clark+	12609
				<b>50</b>		<b>Tin</b>				
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,el</i>	<sup>nat</sup> Sn	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
<i>n,inel</i>	<sup>nat</sup> Sn	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
				<b>50</b>		<b>Tin</b>			<b>116</b>	
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,p</i>	<sup>116</sup> In	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540
				<b>50</b>		<b>Tin</b>			<b>117</b>	
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,p</i>	<sup>117</sup> In	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540
				<b>50</b>		<b>Tin</b>			<b>118</b>	
Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
<i>n,p</i>	<sup>118</sup> In	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540



**50 Tin 120**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>120</sup> In	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**50 Tin 122**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>122</sup> In	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**51 Antimony**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,el</i>	<sup>nat</sup> Sb	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
<i>n,inel</i>	<sup>nat</sup> Sb	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527

**52 Tellurium 122**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>122</sup> Sb	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**52 Tellurium 124**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>124</sup> Sb	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**52 Tellurium 126**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>126</sup> Sb	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

**52 Tellurium 128**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n,p</i>	<sup>128</sup> Sb	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

52

## Tellurium

130

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,p$	$^{130}\text{Sb}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,222,605	Apr 74	W.Struwe+	20540

56

## Barium

136

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\alpha,2n$	$^{138}\text{Ce}$	DAP	2ITYMIL	2.5+07	2.5+07	Jour	NP/A,470,266	87	G.Lobianco+	F0851

58

## Cerium

140

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{139}\text{Ce}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

58

## Cerium

142

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{141}\text{Ce}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

60

## Neodymium

142

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{141}\text{Nd}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

62

## Samarium

150

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{150}\text{Sm}$	CSP	1USALAS	1.0+06	3.3+07	Jour	NIM/B,261,948	07	D.Dashdorj+	14148

63

## Europium

153

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,p$	$^{153}\text{Sm}$	CS	2GERJUL	1.4+07	1.4+07	Jour	RCA,95,313	07	S.M.Qaim+	22992
$n,p$	$^{153}\text{Sm}$	CS	2GERJUL	3.0+06	3.0+06	Jour	ARI,64,717	06	M.AI-Abyad+	22857

**64 Gadolinium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,abs		CS	2FR ILL	2.2-08	9.9-07	Jour	PRL,83,(24),4955	Dec 99	H.Rauch+	22495
<i>n</i> ,abs		TSL	2FR ILL	5.2-07	5.2-07	Jour	PRL,83,(24),4955	Dec 99	H.Rauch+	22495
<i>n</i> ,tot		CS	1USACOL	2.5-02	9.2+06	Jour	RSI,36,887	65	B.M.Rustad+	11586

**64 Gadolinium 154**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,2 <i>n</i>	<sup>153</sup> Gd	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**64 Gadolinium 157**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,abs		CS	2FR ILL	2.3-08	1.0-06	Jour	PRL,83,(24),4955	Dec 99	H.Rauch+	22495
<i>n</i> ,abs		TSL	2FR ILL	5.2-07	5.2-07	Jour	PRL,83,(24),4955	Dec 99	H.Rauch+	22495
<i>n</i> ,tot		CS	2FR ILL	2.3-08	9.9-07	Jour	PRL,83,(24),4955	Dec 99	H.Rauch+	22495

**66 Dysprosium**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> , $\gamma$		CS	1USAMTR	Maxwl		Jour	NSE,25,12	66	J.J.Scoville+	12101
<i>n</i> , $\gamma$		RI	1USAMTR		5.0-01	Jour	NSE,25,12	66	J.J.Scoville+	12101

**66 Dysprosium 160**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,2 <i>n</i>	<sup>159</sup> Dy	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**67 Holmium 165**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,2 <i>n</i>	<sup>164</sup> Ho	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**68 Erbium 166**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{165}\text{Er}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**69 Thulium 169**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{168}\text{Tm}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**70 Ytterbium 170**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{169}\text{Yb}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**71 Lutetium 175**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{174}\text{Lu}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**72 Hafnium 176**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{175}\text{Hf}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**74 Tungsten**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,tot$		CS	1USAANL	1.5+06	8.1+06	Jour	BAP,9,651(Q13)	Oct 64	J.F.Whalen+	12176

**74 Tungsten 182**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{181}\text{W}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

77

Iridium

191

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{190}\text{Ir}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

78

Platinum

192

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{191}\text{Pt}$	DA	2NEDKVI	1.5+04	2.2+06	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854
$^3\text{He},\alpha$	$^{191}\text{Pt}$	DAP	2NEDKVI	5.0+07	5.0+07	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

78

Platinum

194

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{193}\text{Pt}$	DAP	2NEDKVI	5.0+07	5.0+07	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

78

Platinum

195

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{194}\text{Pt}$	DA	2NEDKVI	1.3+05	2.4+06	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

78

Platinum

196

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{195}\text{Pt}$	DAP	2NEDKVI	5.0+07	5.0+07	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

78

Platinum

197

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{196}\text{Pt}$	DA	2NEDKVI	5.8+04	2.1+06	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

78

Platinum

198

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$^3\text{He},\alpha$	$^{197}\text{Pt}$	DAP	2NEDKVI	5.0+07	5.0+07	Jour	NP/A,435,125	85	T.F.Thorsteinsen+	F0854

**79 Gold 197**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{196}\text{Au}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802
$\alpha,2n$	$^{199}\text{Tl}$	CS	2NEDIKO	2.2+07	4.0+07	Jour	PHY,29,1214	63	R.E.Vandevijver	P0086
$\alpha,3n$	$^{198}\text{Tl}$	CS	2NEDIKO	2.6+07	5.1+07	Jour	PHY,29,1214	63	R.E.Vandevijver	P0086
$\alpha,4n$	$^{197}\text{Tl}$	CS	2NEDIKO	4.0+07	5.1+07	Jour	PHY,29,1214	63	R.E.Vandevijver	P0086
$\alpha,5n$	$^{196}\text{Tl}$	CS	2NEDIKO	5.0+07	5.1+07	Jour	PHY,29,1214	63	R.E.Vandevijver	P0086
$\alpha,n$	$^{200}\text{Tl}$	CS	2NEDIKO	2.2+07	2.6+07	Jour	PHY,29,1214	63	R.E.Vandevijver	P0086

**79 Gold 198**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,3n$	$^{196}\text{Au}$	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150
$n,5n$	$^{194}\text{Au}$	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,261,993	07	Janetm.Sisterson	14150

**80 Mercury**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,x+n$	inclusive	DA	2JPNJAE	1.4+07	1.5+07	Jour	NSTS,2,986	Aug 02	F.Maekawa+	22762
$n,x+n$	inclusive	DAE	2JPNJAE	1.4+07	1.5+07	Jour	NSTS,2,986	Aug 02	F.Maekawa+	22762

**80 Mercury 196**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{195}\text{Hg}$	CS	2GERJUL	9.7+06	1.3+07	Jour	PR/C,73,064608	06	M.AI-Abyad+	22935

**80 Mercury 198**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{197}\text{Hg}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802
$n,2n$	$^{197}\text{Hg}$	CS	2GERJUL	9.7+06	1.3+07	Jour	PR/C,73,064608	06	M.AI-Abyad+	22935
$n,p$	$^{198}\text{Au}$	CS	2GERJUL	9.7+06	1.3+07	Jour	PR/C,73,064608	06	M.AI-Abyad+	22935

**80 Mercury 199**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,p$	$^{199}\text{Au}$	CS	2GERJUL	8.4+06	1.3+07	Jour	PR/C,73,064608	06	M.AI-Abyad+	22935

**80 Mercury 204**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{203}\text{Hg}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802
$n,2n$	$^{203}\text{Hg}$	CS	2GERJUL	7.7+06	1.3+07	Jour	PR/C,73,064608	06	M.Al-Abyad+	22935

**81 Thallium 203**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{202}\text{Tl}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802
$n,2n$	$^{202}\text{Tl}$	CSP	1USALAS	6.2+06	2.4+07	Jour	PR/C,76,14302	07	N.Fotiades+	14147
$n,\gamma+2n$	$^{202}\text{Tl}$	CSP	1USALAS	1.4+07	2.4+07	Jour	PR/C,76,14302	07	N.Fotiades+	14147

**82 Lead**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$		CS	2JPNTOH	1.4+07	1.4+07	Conf	88MITO,,229	May 88	S.Iwasaki+	22558
$n,2n$		DAE	2JPNTOH	1.4+07	1.4+07	Conf	88MITO,,229	May 88	S.Iwasaki+	22558
$n,2n$		DE	2JPNTOH	1.4+07	1.4+07	Conf	88MITO,,229	May 88	S.Iwasaki+	22558
$n,\text{el}$	$^{nat}\text{Pb}$	CS	2GERPTB	2.9+06	2.9+06	Conf	2007NICE,	07	E.Poenitz+	22988
$n,\text{el}$	$^{nat}\text{Pb}$	DA	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,\text{el}$	$^{nat}\text{Pb}$	DA	2GERPTB	2.9+06	2.9+06	Conf	2007NICE,	07	E.Poenitz+	22988
$n,\text{el}$	$^{nat}\text{Pb}$	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
$n,\text{inel}$	$^{nat}\text{Pb}$	DAP	1USAORL	1.4+06	1.4+06	Jour	NP,68,97	Jun 65	P.H.Stelson+	11527
$n,\text{non}$		CS	2UK OXF	5.5+07	1.4+08	Jour	PRS/A,236,41	56	R.G.P.Voss+	21370

**82 Lead 204**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,2n$	$^{203}\text{Pb}$	CS	2AUSIRK	1.5+07	1.5+07	Jour	NP/A,118,9	Sep 68	W.Dilg+	20802

**82 Lead 206**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{206}\text{Pb}$	CSP	2GERPTB	2.9+06	2.9+06	Conf	2007NICE,	07	E.Poenitz+	22988
$n,\text{inel}$	$^{206}\text{Pb}$	DAP	2GERPTB	2.9+06	2.9+06	Conf	2007NICE,	07	E.Poenitz+	22988





**91 Protactinium 233**

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

$n,\gamma$	$^{234}\text{Pa}$	CS	2FR ILL	2.5-02	2.5-02	Conf	2006VANCOU,,(C034)	06	O.Bringer+	22941
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**92 Uranium**

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

$n,\text{el}$	$^{nat}\text{U}$	DA	2UK HAR	9.6+07	9.6+07	Jour	NP,21,15	Nov 60	G.L.Salmon	21123
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**92 Uranium 233**

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

$n,0$		RP	2ZZZGEL	2.5+00	3.0+01	Conf	70HELSINKI,1,387	Jun 70	W.Kolar+	20114
$n,\text{el}$		RP	2ZZZGEL	2.5+00	5.2+01	Conf	70HELSINKI,1,387	Jun 70	W.Kolar+	20114
$n,\text{fis}$		CS	2ZZZGEL	1.8-02	5.2+01	Jour	JNE,24,(3),111	Jun 70	M.G.Cao+	20003
$n,\text{fis}$		CS	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
$n,\text{fis}$		CS	2ZZZGEL	6.8-01	3.0+03	Jour	JNE,24,(3),111	Jun 70	M.G.Cao+	20003
$n,\text{fis}$		RI	2ZZZGEL	4.1-01	3.0+03	Jour	JNE,24,(3),111	Jun 70	M.G.Cao+	20003
$n,\text{fis}$		RP	2ZZZGEL			Jour	JNE,24,(3),111	Jun 70	M.G.Cao+	20003
$n,\text{fis}$		?	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
$n,\text{fis}$		?	2JPNTOH	4.9+05	7.0+06	Jour	RE,93,233	86	K.Kanda+	22014
$n,\text{fis}$		?	2JPNTOH	5.1+05	6.8+06	Rept	JAERI-M-85-035,220	85	K.Kanda+	21963
$n,\text{fis}$		?	2GERKFK	5.2+03	1.0+06	Jour	NSE,40,375	Jun 70	E.Pfletschinger+	20363
$n,\text{tot}$		CS	1USAKAP	1.6+06	9.0+06	Prog	KAPL-1770,65	Apr 57	R.Fulwood+	11681
$n,\text{tot}$		CS	2ZZZGEL	6.8-01	7.5+02	Conf	70HELSINKI,1,387	Jun 70	W.Kolar+	20114
$n,\text{tot}$		RP	2ZZZGEL	9.0-01	9.3+01	Conf	70HELSINKI,1,387	Jun 70	W.Kolar+	20114

**92 Uranium 234**

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

$n,\text{fis}$		CS	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
$n,\text{fis}$		?	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
$n,\text{fis}$		?	2JPNTOH	4.9+05	7.0+06	Jour	RE,93,233	86	K.Kanda+	22014
$n,\text{fis}$		?	2JPNTOH	5.1+05	6.8+06	Rept	JAERI-M-85-035,220	85	K.Kanda+	21963
$n,\gamma$	$^{235}\text{U}$	CS	2FR ILL	2.5-02	2.5-02	Conf	2006VANCOU,,(C034)	06	O.Bringer+	22941

**92 Uranium 235**

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

$n,\text{fis}$		CS	2GERKFK	1.2+06	2.0+07	Conf	76ANL,,246	Jun 76	B.Leugers+	20943
$n,\text{fis}$		CS	2FR BRC	1.4+07	1.5+07	Jour	NSE,68,(2),197	Nov 78	M.Cance+	20779
$n,\text{fis}$		CS	2GERZFK	2.6+06	1.5+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304

<i>n</i> ,fis		CS	2GERKFK	3.0+04	3.0+04	Jour	JNE,21,643	Aug 67	G.F.Knoll+	21194
<i>n</i> ,fis		CS	2GERZFK	4.4+06	1.9+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2GERKFK	6.4+04	6.4+04	Jour	JNE,21,643	Aug 67	G.F.Knoll+	21194
<i>n</i> ,fis		RI	2ZZZGEL	5.0-01	3.0+04	Jour	NSE,99,1	May 88	H.Knitter+	22032
<i>n</i> ,fis		?	2GERKFK			Jour	JNE,21,643	Aug 67	G.F.Knoll+	21194
<i>n</i> ,fis		?	2UK ALD	1.3+07	1.9+07	Jour	JNE/AB,14,85	61	B.Adams+	21209
<i>n</i> ,fis		?	2FR ILL	2.5-02	2.5-02	Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis	Many	?	2FR ILL	2.5-02	2.5-02	Conf	2007NICE,72	07	A.Bail+	22985
<i>n</i> ,fis		?	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> , $\gamma$	<sup>236</sup> U	CS	2FR ILL	2.5-02	2.5-02	Conf	2006VANCOU,,(C034)	06	O.Bringer+	22941
<i>n</i> ,tot		CS	1USAKAP	2.1+00	7.9+00	Prog	KAPL-1770,65	Apr 57	R.Fulwood+	11681

**92 Uranium 236**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	2UK ALD	1.3+05	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		?	2UK ALD	1.3+05	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463

**92 Uranium 238**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	2GERKFK	1.2+06	2.0+07	Conf	76ANL,,246	Jun 76	B.Leugers+	20943
<i>n</i> ,fis		CS	2UK ALD	1.3+07	1.9+07	Jour	JNE/AB,14,85	61	B.Adams+	21209
<i>n</i> ,fis		CS	2UK NPL	1.4+07	1.4+07	Conf	91JUELIC,,514	May 91	G.Winkler+	22565
<i>n</i> ,fis		CS	2JPNKYU	1.4+07	1.5+07	Priv	KATASE	Sep 61	A.Katase	20299
<i>n</i> ,fis		CS	2FR BRC	1.4+07	1.5+07	Jour	NSE,68,(2),197	Nov 78	M.Cance+	20779
<i>n</i> ,fis		CS	2GERZFK	1.5+07	1.5+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2ITYCAT	1.8+06	4.5+06	Jour	NP,63,641	Mar 65	V.Emma+	21134
<i>n</i> ,fis		CS	2GERZFK	4.8+06	1.9+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2FR SAC	5.3+05	4.0+06	Jour	PRL,35,1749	Dec 75	J.Blons+	20796
<i>n</i> ,fis		?	2GERKFK	1.4+06	3.0+07	Conf	76ANL,,94	Jun 76	S.Cierjacks+	20409
<i>n</i> ,fis		?	2SWDUPP	4.7+06	8.8+06	Conf	76ANL,,128	Jun 76	C.Nordborg+	20869
<i>n</i> , $\gamma$	<sup>239</sup> U	CS	1USABNL	2.5+06	2.5+06	Conf	55GENEVA,4,147(832)	55	H.Palevsky+	12446

**93 Neptunium 237**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	2GERZFK	1.5+07	1.5+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		CS	2GERZFK	4.9+06	1.8+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis	Many	FY	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis		KE	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis	Many	KE	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis		?	2FR ILL	2.5-02	2.5-02	Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> ,fis		?	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		?	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752

<i>n</i> ,fis	Many	?	2FR ILL	Maxwl		Jour	NP/A,369,1	Oct 81	C.Wagemans+	21752
<i>n</i> , $\gamma$	<sup>238</sup> Np	CS	2JPNKTO	1.8-02	1.0+02	Jour	NST,42,(2),135	Feb 05	O.Shcherbakov+	22872
<i>n</i> , $\gamma$	<sup>238</sup> Np	CS	2JPNKTO	2.5-02	2.5-02	Jour	NST,31,1239	Dec 94	K.Kobayashi+	22366
<i>n</i> , $\gamma$	<sup>238</sup> Np	CS	2JPNKTO	2.5-02	2.5-02	Jour	NST,43,(11),1289	Nov 06	H.Harada+	22977
<i>n</i> , $\gamma$	<sup>238</sup> Np	CS	2JPNKTO	3.0-01	1.1+03	Jour	NST,42,(2),135	Feb 05	O.Shcherbakov+	22872
<i>n</i> , $\gamma$	<sup>238</sup> Np	RI	2JPNKNK		5.0-01	Jour	NST,31,1239	Dec 94	K.Kobayashi+	22366
<i>n</i> , $\gamma$	<sup>238</sup> Np	RI	2JPNKTO	3.0-01	1.0+02	Jour	NST,42,(2),135	Feb 05	O.Shcherbakov+	22872
<i>n</i> , $\gamma$	<sup>238</sup> Np	?	2JPNKTO	Maxwl		Jour	NST,43,(11),1289	Nov 06	H.Harada+	22977

**94                      Plutonium                      238**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	1USALRL	2.0+06	3.0+06	Jour	PR,154,1111	67	W.F.Stubbins+	12489

**94                      Plutonium                      239**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	2UK HAR	1.0+03	1.5+04	Rept	ANL-7320,16	66	G.D.James+	21090
<i>n</i> ,fis		CS	2FR BRC	1.4+07	1.5+07	Jour	NSE,68,(2),197	Nov 78	M.Cance+	20779
<i>n</i> ,fis		CS	2GERZFK	1.5+07	1.5+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		CS	2UK ALD	4.0+04	5.5+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		CS	2GERZFK	4.9+06	1.9+07	Conf	91JUELIC,,510	May 91	K.Merla+	22304
<i>n</i> ,fis		?	2UK ALD	1.3+07	1.9+07	Jour	JNE/AB,14,85	61	B.Adams+	21209
<i>n</i> ,fis	Many	?	2FR ILL	2.5-02	2.5-02	Conf	2007NICE,72	07	A.Bail+	22985
<i>n</i> ,fis		?	2GERKFK	3.9+05	2.1+07	Conf	76ANL,,94	Jun 76	S.Cierjacks+	20409
<i>n</i> ,fis		?	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		?	2GERKFK	5.2+03	1.0+06	Jour	NSE,40,375	Jun 70	E.Pfletschinger+	20363
<i>n</i> ,fis		?	2GERKFK	5.3+03	1.5+05	Conf	66PARIS,1,295	Oct 66	W.B.Gilboy+	21085

**94                      Plutonium                      240**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		CS	2ZZZGEL	2.0+02	8.0+03	Jour	NP/A,112,603	May 68	E.Migneco+	20005
<i>n</i> ,fis		RP	2ZZZGEL	7.5+02	3.4+03	Jour	NP/A,112,603	May 68	E.Migneco+	20005
<i>n</i> ,fis		?	2GERKFK	1.4+04	1.7+05	Conf	66PARIS,1,295	Oct 66	W.B.Gilboy+	21085

**94                      Plutonium                      241**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el		RP	2UK HAR	1.0-02	2.0+01	Jour	NP,65,353	Mar 65	G.D.James	20940
<i>n</i> ,fis		CS	2UK HAR	4.0+00	2.5+03	Jour	NP,65,353	Mar 65	G.D.James	20940
<i>n</i> ,fis		CS	2UK ALD	4.0+04	5.0+05	Conf	65SALZBURG,1,219	Mar 65	P.H.White+	21463
<i>n</i> ,fis		CS	2UK HAR	8.4-03	3.2+01	Jour	NP,65,353	Mar 65	G.D.James	20940
<i>n</i> ,fis		?	2GERKFK	1.4+04	1.1+06	Jour	NSE,51,124	Jun 73	F.Kaeppler+	20364

*n*,fis ? 2UK ALD 4.0+04 5.0+05 Conf 65SALZBURG,1,219 Mar 65 P.H.White+ 21463

94 Plutonium 242

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,0		RP	2UK HAR		2.0+01	Jour	NP,65,353	Mar 65	G.D.James	20940
<i>n</i> ,tot		CS	2ZZZGEL	4.0-01	1.0+03	Priv	KOPECKY	07	P.Siegler+	22955

95 Americium 243

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,0		RP	2ZZZGEL			Jour	NSE,99,1	May 88	H.Knitter+	22032
<i>n</i> ,fis		CS	2JPNTOH	1.1+06	6.8+06	Jour	NST,24,423	Jun 87	K.Kanda+	22044
<i>n</i> ,fis		CS	2ZZZGEL	1.8+06	7.4+06	Conf	2007NICE,,(#473)	07	M.Aiche+	22993
<i>n</i> ,fis		CS	2ZZZGEL	3.4+05	9.9+06	Jour	NSE,99,1	May 88	H.Knitter+	22032
<i>n</i> ,fis		RI	2ZZZGEL	5.0-01	2.0+07	Jour	NSE,99,1	May 88	H.Knitter+	22032
<i>n</i> ,fis		?	2JPNTOH	1.1+06	6.8+06	Jour	NST,24,423	Jun 87	K.Kanda+	22044