

# EXFOR News (June 2015)

## New experimental data available from Nuclear Reaction Data Centres

EXFOR [1] is a world-wide data library for experimental neutron, charged-particle and photon induced reaction data compiled by the [International Network of the Nuclear Reaction Data Centres \(NRDC\)](#)<sup>a</sup> coordinated by the [IAEA Nuclear Data Section](#). Regularly updated web retrieval databases are available at [IAEA-NDS](#) as well as [NNDC](#), [NEADB](#), [JAEA](#), [JCPRG](#) and [CDFE](#).

This News lists newly created EXFOR entries as well as revised EXFOR entries where new data subentries are added. Entries from articles published in past 10 years are flagged by asterisks (\*). Please send an email to N.Otsuka (NRDC Coordinator [n.otsuka@iaea.org](mailto:n.otsuka@iaea.org)) for inclusion in the EXFOR News distribution list as well as any question on EXFOR.

[1] N.Otsuka et al., [Nucl.Data.Sheets](#) **120**(2014)272.

### Quantity codes

ALF	$\alpha$ -value ( $\sigma_{\text{capt}}/\sigma_{\text{fis}}$ )	FY	Fission product yield
AMP	Length or amplitude	INT	Cross section integral over incident energy
CHG	Fragment charge	KE	Kinetic energy
CS	Cross section	KER	Kerma factor
CSN	Differential with respect to number of particles	MLT	Multiplicity
CSP	Partial cross section	NQ	Nuclear quantity
CST	Temperature dependent cross section	NU	Fission neutron multiplicity $\bar{\nu}$
D3A	Triple differential $d\Omega_1/d\Omega_2/dE'$	NUD	Delayed fission neutron multiplicity $\bar{\nu}_d$
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	$\eta$ -value $\bar{\nu}\sigma_{\text{fis}}/(\sigma_{\text{capt}} + \sigma_{\text{fis}})$	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	tex	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)

<sup>a</sup> [NNDC](#) (USA), [NEADB](#) (France), [NDS](#) (Austria), [CJD](#) (Russia), [CNDC](#) (China), [ATOMKI](#) (Hungary), [NDPCI](#) (India), [JAEA](#) (Japan), [JCPRG](#) (Japan), [KAERI](#) (Korea), [CDFE](#) (Russia), [CNPD](#) (Russia), [UkrNDC](#) (Ukraine)

6 Carbon 12

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,p$	$^{12}\text{B}$	RI	2ZZZCER	1.0+10	1.4+07	Jour	<a href="#">PR/C,90,021601</a>	14	P.Zugec+	<a href="#">23259</a>

10 Neon 20

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,0$		RP	2GERKFK			Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>
* $n,\gamma$	$^{21}\text{Ne}$	CS	2GERKFK	Maxwl		Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>

10 Neon 21

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,0$		RP	2GERKFK			Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>
* $n,\gamma$	$^{22}\text{Ne}$	CS	2GERKFK	Maxwl		Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>

10 Neon 22

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,0$		RP	2GERKFK			Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>
* $n,\gamma$	$^{23}\text{Ne}$	CS	2GERKFK	Maxwl		Jour	<a href="#">PR/C,90,045804</a>	14	M.Heil+	<a href="#">23265</a>

11 Sodium 23

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{24}\text{Na}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{24}\text{Na}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

12 Magnesium 24

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\text{inel}$	$^{24}\text{Mg}$	CS	2ZZZGEL		1.4+06	Jour	<a href="#">PR/C,90,034603</a>	14	A.Olachel+	<a href="#">23258</a>
* $n,\text{inel}$	$^{24}\text{Mg}$	CSP	2ZZZGEL		6.3+06	Jour	<a href="#">PR/C,90,034603</a>	14	A.Olachel+	<a href="#">23258</a>
* $n,p$	$^{24}\text{Na}$	CS	3INDDLH	4.5+06	4.5+06	Jour	IJP,28,396	54	S.K.Nandi+	<a href="#">33077</a>

12 Magnesium 25

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	0,0	NQ	2ZZZGEL	Spont		Jour	<a href="#">PR/C,90,034603</a>	14	A.Olacel+	<a href="#">23258</a>

12 Magnesium 26

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{27}\text{Mg}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{27}\text{Mg}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

13 Aluminium 27

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{28}\text{Al}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{28}\text{Al}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
	$n,p$	$^{27}\text{Mg}$	CS	3INDDLH	4.5+06	4.5+06	Jour	<a href="#">IJP,28,396</a>	54	S.K.Nandi+	<a href="#">33077</a>

17 Chlorine 37

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{38}\text{Cl}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{38}\text{Cl}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

19 Potassium 41

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{42}\text{K}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	$^{42}\text{K}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

21 Scandium 45

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{46}\text{Sc}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{46}\text{Sc}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

22 Titanium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $\gamma, x$	<sup>46</sup> Sc	INT	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>46</sup> Sc	?	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>47</sup> Sc	INT	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>47</sup> Sc	?	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>48</sup> Sc	INT	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>48</sup> Sc	?	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>49</sup> Sc	INT	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>49</sup> Sc	?	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>
* $\gamma, x$	<sup>45</sup> Ti	INT	4RUSMOS		5.5+07	Jour	YF,78,(3-4),246	15	S.S.Belyshev+	<a href="#">M0905</a>

22 Titanium 47

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma, p$	<sup>46</sup> Sc	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>

22 Titanium 50

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	<sup>51</sup> Ti	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n, \gamma$	<sup>51</sup> Ti	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

23 Vanadium 51

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	<sup>52</sup> V	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n, \gamma$	<sup>52</sup> V	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

24 Chromium 50

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	<sup>51</sup> Cr	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n, \gamma$	<sup>51</sup> Cr	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

25 Manganese 55

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n, \alpha$	<sup>52</sup> V	CS	3INDSAH	1.4+07	1.4+07	Jour	<a href="#">NP,39,325</a>	62	O.N.Kaul	<a href="#">33075</a>

*	$n,\gamma$	$^{56}\text{Mn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
	$n,\gamma$	$^{56}\text{Mn}$	?	3HUNKFI			Jour	<a href="#">JRN,81,397</a>	84	A.Simonits+	<a href="#">31750</a>
*	$n,\gamma$	$^{56}\text{Mn}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**26 Iron 54**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma,n$	$^{56}\text{Fe}$	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>

**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	2ZZZGEL	1.3+07	Jour	<a href="#">PR/C,88,027601</a>	13	A.Negret+	<a href="#">23073</a>
*	$n,\text{inel}$	$^{56}\text{Fe}$	CSP	2ZZZGEL	4.5+06	Jour	<a href="#">PR/C,88,027601</a>	13	A.Negret+	<a href="#">23073</a>
*	$n,\text{inel}$	$^{56}\text{Fe}$	?	2ZZZGEL	8.6+05	Jour	<a href="#">PR/C,88,027601</a>	13	A.Negret+	<a href="#">23073</a>

**26 Iron 57**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	0,0	NQ	2ZZZGEL	Spont		Jour	<a href="#">PR/C,88,027601</a>	13	A.Negret+	<a href="#">23073</a>

**26 Iron 58**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{59}\text{Fe}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
	$n,\gamma$	$^{59}\text{Fe}$	?	3HUNKFI			Jour	<a href="#">JRN,81,397</a>	84	A.Simonits+	<a href="#">31750</a>
*	$n,\gamma$	$^{59}\text{Fe}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**27 Cobalt 59**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{60}\text{Co}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{60}\text{Co}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**28 Nickel 64**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{65}\text{Ni}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

\*  $n,\gamma$   $^{65}\text{Ni}$  ? 2BLGMOL 5.5-01 Jour [JRN,296,931](#) 13 F.Farinaarbocco+ [23266](#)

**29 Copper 63**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{64}\text{Cu}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{64}\text{Cu}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**29 Copper 65**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{66}\text{Cu}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{66}\text{Cu}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**30 Zinc 64**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{65}\text{Zn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{65}\text{Zn}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**30 Zinc 68**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{69}\text{Zn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{69}\text{Zn}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**31 Gallium 71**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{72}\text{Ga}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{72}\text{Ga}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**33 Arsenic 75**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{76}\text{As}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{76}\text{As}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**34 Selenium 74**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma, n$	<sup>73</sup> Se	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>

**35 Bromine 81**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, \gamma$	<sup>82</sup> Br	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>82</sup> Br	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**37 Rubidium 85**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma, n$	<sup>84</sup> Rb	CS	4UZ NUU		2.5+07	Conf	94PETRBG,402	94	S.R.Palvanov+	<a href="#">M0902</a>
*	$n, \gamma$	<sup>86</sup> Rb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>86</sup> Rb	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**37 Rubidium 87**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma, n$	<sup>86</sup> Rb	CS	4UZ NUU		2.5+07	Conf	94PETRBG,402	94	S.R.Palvanov+	<a href="#">M0902</a>
*	$n, \gamma$	<sup>88</sup> Rb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>88</sup> Rb	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**38 Strontium 84**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, \gamma$	<sup>85</sup> Sr	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>85</sup> Sr	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**38 Strontium 86**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, \gamma$	<sup>87</sup> Sr	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>87</sup> Sr	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**39 Yttrium 89**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{90}\text{Y}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{90}\text{Y}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**40 Zirconium 90**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
	$\gamma,\text{el}$	RP	4RUSMOS	1.0+07	1.0+07	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>

**40 Zirconium 91**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
	$\gamma,\text{el}$	RP	4RUSMOS	8.7+06	8.7+06	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>

**40 Zirconium 92**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
	$\gamma,\text{el}$	RP	4RUSMOS	9.0+06	9.0+06	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>

**40 Zirconium 94**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma,\text{el}$	RP	4RUSMOS	8.5+06	8.5+06	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>	
*	$n,\gamma$	$^{95}\text{Zr}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	$^{95}\text{Zr}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**40 Zirconium 96**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{97}\text{Zr}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**41 Niobium 93**

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



	$\gamma,el$		RP	4RUSMOS	7.0+06	7.0+06	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>
*	$n,\gamma$	<sup>94</sup> Nb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	<sup>94</sup> Nb	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**42 Molybdenum 94**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
	$\gamma,el$		RP	4RUSMOS	9.7+06	9.7+06	Conf	83MOSCOW,,347	83	A.S.Alimov+	<a href="#">M0904</a>

**42 Molybdenum 98**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
*	$n,\gamma$	<sup>99</sup> Mo	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	<sup>99</sup> Mo	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**42 Molybdenum 100**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
*	$n,\gamma$	<sup>101</sup> Mo	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>101</sup> Mo	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**44 Ruthenium 96**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
*	$n,\gamma$	<sup>97</sup> Ru	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>97</sup> Ru	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**44 Ruthenium 102**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
*	$n,\gamma$	<sup>103</sup> Ru	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>103</sup> Ru	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**44 Ruthenium 104**

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max					
*	$n,\gamma$	<sup>105</sup> Ru	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>105</sup> Ru	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

46 Palladium 108

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{109}\text{Pd}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{109}\text{Pd}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

46 Palladium 110

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{111}\text{Pd}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{111}\text{Pd}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

47 Silver 107

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{108}\text{Ag}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{108}\text{Ag}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

47 Silver 109

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{110}\text{Ag}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{110}\text{Ag}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

48 Cadmium 114

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{115}\text{Cd}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{115}\text{Cd}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

49 Indium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,x$	$^{112}\text{In}$	CS	2SWDUPP	1.8+07	4.7+07	Jour	<a href="#">NIM/A,726,84</a>	13	J.Vrzalova+	<a href="#">31714</a>

**49 Indium 113**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{114}\text{In}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{114}\text{In}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**49 Indium 115**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{116}\text{In}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{116}\text{In}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**50 Tin 112**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{113}\text{Sn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{113}\text{Sn}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**50 Tin 116**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{117}\text{Sn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{117}\text{Sn}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**50 Tin 118**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma,p$	$^{117}\text{In}$	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>

**50 Tin 124**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{125}\text{Sn}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{125}\text{Sn}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**51                    Antimony                    121**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma, n$	<sup>120</sup> Sb	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>
*	$n, \gamma$	<sup>122</sup> Sb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>122</sup> Sb	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**51                    Antimony                    123**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma, n$	<sup>122</sup> Sb	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>
*	$n, \gamma$	<sup>124</sup> Sb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>124</sup> Sb	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**53                    Iodine                    127**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, 8n$	<sup>120</sup> I	CS	2SWDUPP	9.4+07	9.4+07	Jour	<a href="#">NIM/A,726,84</a>	13	J.Vrzalova+	<a href="#">31714</a>

**56                    Barium                    130**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, \gamma$	<sup>131</sup> Ba	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>131</sup> Ba	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**56                    Barium                    132**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
	$\gamma, n$	<sup>131</sup> Ba	CS	4UZ NUU		2.2+07	Conf	88BAKU,320	88	M.G.Davydov+	<a href="#">M0901</a>
*	$n, \gamma$	<sup>133</sup> Ba	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>133</sup> Ba	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**56                    Barium                    134**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n, \gamma$	<sup>135</sup> Ba	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>135</sup> Ba	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n, \gamma$	<sup>135</sup> Ba	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n, \gamma$	<sup>135</sup> Ba	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**56 Barium 138**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{139}\text{Ba}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{139}\text{Ba}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**57 Lanthanum 139**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{140}\text{La}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{140}\text{La}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**58 Cerium 138**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma,n$	$^{137}\text{Ce}$	CS	4UZ NUU		2.5+07	Conf	94PETRBG,403	94	S.R.Palvanov+	<a href="#">M0903</a>

**58 Cerium 140**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$\gamma,n$	$^{139}\text{Ce}$	CS	4UZ NUU		2.5+07	Conf	94PETRBG,403	94	S.R.Palvanov+	<a href="#">M0903</a>

**59 Praseodymium 141**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{142}\text{Pr}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	$^{142}\text{Pr}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

**60 Neodymium 142**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\alpha$	$^{139}\text{Ce}$	CS	2TUKCNA	1.4+07	1.5+07	Jour	<a href="#">ARI,91,44</a>	14	I.A.Reyhancan	<a href="#">23239</a>

**60 Neodymium 143**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\gamma$	<sup>144</sup> Nd	SPC	4LATIFL	2.5-02	2.5-02	Jour	IZV,40,(1),68	76	D.Rabenstein+	<a href="#">41606</a>

**62 Samarium 152**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	$n,\gamma$	<sup>153</sup> Sm	CS	2BLGMOL	2.5-02	2.5-02	Jour	13	F.Farinaarbocco+	<a href="#">23266</a>
*	$n,\gamma$	<sup>153</sup> Sm	?	2BLGMOL	5.5-01		Jour	13	F.Farinaarbocco+	<a href="#">23266</a>

**63 Europium 151**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	$n,\gamma$	<sup>152</sup> Eu	CS	2BLGMOL	2.5-02	2.5-02	Jour	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>152</sup> Eu	CS	3HUNKFI	2.5-02	2.5-02	Jour	14	M.S.Basunia+	<a href="#">31751</a>

**63 Europium 153**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	$n,\gamma$	<sup>154</sup> Eu	CS	2BLGMOL	2.5-02	2.5-02	Jour	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>154</sup> Eu	CS	3HUNKFI	2.5-02	2.5-02	Jour	14	M.S.Basunia+	<a href="#">31751</a>

**64 Gadolinium 152**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	$n,\gamma$	<sup>153</sup> Gd	CS	2BLGMOL	2.5-02	2.5-02	Jour	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>153</sup> Gd	?	2BLGMOL	5.0-01		Jour	14	F.Farinaarbocco+	<a href="#">23260</a>

**64 Gadolinium 158**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
*	$n,\gamma$	<sup>159</sup> Gd	CS	2BLGMOL	2.5-02	2.5-02	Jour	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	<sup>159</sup> Gd	?	2BLGMOL	5.0-01		Jour	14	F.Farinaarbocco+	<a href="#">23260</a>

**65           Terbium           159**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>160</sup> Tb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>		13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	<sup>160</sup> Tb	CS	2SPNSEU	Maxwl		Jour	NDS,120,205		14	J.Praena+	<a href="#">23249</a>
* $n,\gamma$	<sup>160</sup> Tb	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>		13	F.Farinaarbocco+	<a href="#">23266</a>

**66           Dysprosium           164**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>165</sup> Dy	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	<sup>165</sup> Dy	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>

**67           Holmium           165**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>166</sup> Ho	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>		13	F.Farinaarbocco+	<a href="#">23266</a>
* $n,\gamma$	<sup>166</sup> Ho	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>		13	F.Farinaarbocco+	<a href="#">23266</a>

**69           Thulium           169**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>170</sup> Tm	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	<sup>170</sup> Tm	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>

**70           Ytterbium           168**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>169</sup> Yb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>

**70           Ytterbium           174**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation		Date	Author	Data #
				Min	Max		Ref	Vol Page			
* $n,\gamma$	<sup>175</sup> Yb	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	<sup>175</sup> Yb	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>		14	F.Farinaarbocco+	<a href="#">23260</a>

70 Ytterbium 176

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{177}\text{Yb}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{177}\text{Yb}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

71 Lutetium 176

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\text{inel}$	$^{176}\text{Lu}$	CS	4LATIFL	1.0+06	1.0+06	Conf	84ALMAAT,,143	Apr 84	M.R.Beytin'Sh+	<a href="#">40907</a>

72 Hafnium 174

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{175}\text{Hf}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{175}\text{Hf}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

72 Hafnium 179

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{180}\text{Hf}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{180}\text{Hf}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

72 Hafnium 180

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n,\gamma$	$^{181}\text{Hf}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{181}\text{Hf}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

73 Tantalum 181

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $\gamma,\text{fis}$	Many	CS	4ARMJER		3.5+09	Jour	<a href="#">PR/C,91,024620</a>	15	A.Deppman+	<a href="#">M0906</a>
* $n,\gamma$	$^{182}\text{Ta}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
* $n,\gamma$	$^{182}\text{Ta}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>



## 74 Tungsten

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \text{tot}$		CS	4ZZZDUB	1.3-03	1.3-03	Jour	PTE,,(5),27	06	Zh.V.Mezentseva+	<a href="#">41491</a>

## 74 Tungsten 180

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	$^{181}\text{W}$	CS	3HUNKFI	2.5-02	2.5-02	Jour	NDS,119,91	14	A.M.Hurst+	<a href="#">31752</a>

## 74 Tungsten 186

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	$^{187}\text{W}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n, \gamma$	$^{187}\text{W}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

## 75 Rhenium 185

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	$^{186}\text{Re}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n, \gamma$	$^{186}\text{Re}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

## 75 Rhenium 187

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* $n, \gamma$	$^{188}\text{Re}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>
* $n, \gamma$	$^{188}\text{Re}$	?	2BLGMOL	5.5-01		Jour	<a href="#">JRN,296,931</a>	13	F.Farinaarbocco+	<a href="#">23266</a>

## 76 Osmium 184

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n, \gamma$	$^{185}\text{Os}$	SPC	4LATIFL	2.5-02	2.5-02	Jour	IZV,38,(10),2135	74	P.T.Prokofev+	<a href="#">41604</a>

## 76 Osmium 186

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n, \gamma$	$^{187}\text{Os}$	SPC	4LATIFL	2.5-02	2.5-02	Jour	IZV,38,(10),2135	74	P.T.Prokofev+	<a href="#">41604</a>

**76 Osmium 190**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
$n,\gamma$	$^{191}\text{Os}$	SPC	4LATIFL	2.5-02	2.5-02	Jour	IZV,38,(10),2135	74	P.T.Prokofev+	<a href="#">41604</a>

**78 Platinum 196**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{197}\text{Pt}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	$^{197}\text{Pt}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**78 Platinum 198**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,\gamma$	$^{199}\text{Pt}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	$^{199}\text{Pt}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**79 Gold 197**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$n,7n$	$^{191}\text{Au}$	CS	2SWDUPP	5.9+07	8.9+07	Jour	<a href="#">NIM/A,726,84</a>	13	J.Vrzalova+	<a href="#">31714</a>

**90 Thorium 232**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$\gamma,\text{fis}$	$^{135}\text{Xe}$	CS	4ZZZDUB		1.4+07	Jour	<a href="#">JRN,303,(1),99</a>	15	Tranducthiep+	<a href="#">M0899</a>
	$n,\text{fis}$		NUF	4RUSFEI	7.3+06	7.3+06	Jour	YK,1996,(1),102	96	G.N.Lovchikova+	<a href="#">41238</a>
*	$n,\gamma$	$^{233}\text{Th}$	CS	2BLGMOL	2.5-02	2.5-02	Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>
*	$n,\gamma$	$^{233}\text{Th}$	?	2BLGMOL	5.0-01		Jour	<a href="#">JRN,302,655</a>	14	F.Farinaarbocco+	<a href="#">23260</a>

**92 Uranium 233**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #	
				Min	Max						
*	$\gamma,\text{fis}$	$^{135}\text{Xe}$	CS	4ZZZDUB		1.4+07	Jour	<a href="#">JRN,303,(1),99</a>	15	Tranducthiep+	<a href="#">M0899</a>

92 Uranium 235

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		NUF	4RUSFEI	1.5+06	1.5+06	Jour	YK,1996,(1),102	96	G.N.Lovchikova+	41238
<i>n</i> ,fis	<sup>4</sup> He	DA	3INDITK	1.4+05	1.0+06	Jour	PRM,24,131	85	M.M.Sharma+	33078
* <i>n</i> , $\gamma$	<sup>236</sup> U	CS	2GERKFK		4.3+05	Jour	PRL,112,192501	14	A.Wallner+	23170

92 Uranium 238

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
0,fis		NU	4ZZZDUB	Spont		Jour	YF,24,(3),473	76	A.G.Popeko+	41605
0,fis		?	4ZZZDUB	Spont		Jour	YF,24,(3),473	76	A.G.Popeko+	41605
* <i>n</i> , $\gamma$	<sup>239</sup> U	CS	2GERKFK		4.3+05	Jour	PRL,112,192501	14	A.Wallner+	23170
* <i>n</i> , $\gamma$	<sup>239</sup> U	?	2GERKFK		4.3+05	Jour	PRL,112,192501	14	A.Wallner+	23170

94 Plutonium 239

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		NUF	4RUSFEI	1.5+06	7.5+06	Jour	YK,1996,(1),102	96	G.N.Lovchikova+	41238

94 Plutonium 242

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el	<sup>242</sup> Pu	CS	2FR BRC	6.0+05	3.4+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782
<i>n</i> ,el	<sup>242</sup> Pu	DA	2FR BRC	1.0+06	2.5+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782
<i>n</i> ,el	<sup>242</sup> Pu	DA	2FR BRC	2.5+06	2.5+06	Rept	INDC(FR)-0044	81	G.Haouat+	23257
<i>n</i> ,el	<sup>242</sup> Pu	DA	2FR BRC	6.0+05	3.4+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782
<i>n</i> ,inel	<sup>242</sup> Pu	CSP	2FR BRC	6.0+05	3.4+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782
<i>n</i> ,inel	<sup>242</sup> Pu	DAP	2FR BRC	1.0+06	2.5+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782
<i>n</i> ,inel	<sup>242</sup> Pu	DAP	2FR BRC	2.5+06	2.5+06	Rept	INDC(FR)-0044	81	G.Haouat+	23257
<i>n</i> ,inel	<sup>242</sup> Pu	DAP	2FR BRC	6.0+05	3.4+06	Jour	NSE,81,(4),491	82	G.Haouat+	21782

95 Americium 243

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
* <i>n</i> ,0		RP	2ZZZCER		4.0+02	Jour	PR/C,90,034608	14	E.Mendoza+	23254
* <i>n</i> ,el		RP	2ZZZCER		4.2+04	Jour	PR/C,90,034608	14	E.Mendoza+	23254
* <i>n</i> , $\gamma$		RP	2ZZZCER	3.0+00	4.3+01	Jour	PR/C,90,034608	14	E.Mendoza+	23254
* <i>n</i> , $\gamma$	<sup>244</sup> Am	CS	2ZZZCER	7.3-01	2.5+03	Jour	PR/C,90,034608	14	E.Mendoza+	23254
* <i>n</i> , $\gamma$	<sup>244</sup> Am	RI	2ZZZCER		5.0-01	Jour	PR/C,90,034608	14	E.Mendoza+	23254

**96 Curium 244**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
0,fis		NU	4ZZZDUB	Spont		Jour	SNP,16,641	73	M.Dakovskii+	<a href="#">40141</a>

**100 Fermium 256**

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
0,fis		NU	4ZZZDUB	Spont		Jour	SNP,16,641	73	M.Dakovskii+	<a href="#">40141</a>