ENDF/B-VII.1 SM-149
Principal cross sections

Energy (MeV)

Cross section (barns)

- total
- absorption
- elastic
- gamma production

Energy (MeV)
ENDF/B-VII.1 SM-149
resonance total cross section
ENDF/B-VII.1 SM-149
resonance total cross section
ENDF/B-VII.1 SM-149

resonance total cross section

Cross section (barns) vs. Energy (MeV)

Energy (MeV)

Cross section (barns)

-10^1

-10^2

-10^3

-10^4

10^{-6} - 10^{-5}
ENDF/B-VII.1 SM-149
resonance total cross section

Energy (MeV)

Cross section (barns)

10^{-5}  10^{-4}  10^{-3}  10^{-2}  10^{-1}  10^1  10^2  10^3  10^4

10^{-5}  10^{-4}  10^{-3}  10^{-2}  10^{-1}  10^1  10^2  10^3  10^4

10^{-5}  10^{-4}  10^{-3}  10^{-2}  10^{-1}  10^1  10^2  10^3  10^4

total
ENDF/B-VII.1 SM-149
resonance total cross section

Energy (MeV)

Cross section (barns)
ENDF/B-VII.1 SM-149
resonance absorption cross sections

![Graph showing resonance absorption cross sections for ENDF/B-VII.1 SM-149. The x-axis represents energy in MeV, ranging from $10^{-8}$ to $10^{-7}$, and the y-axis represents cross section in barns, ranging from $10^{-8}$ to $10^5$. The graph highlights the capture process.](image-url)
ENDF/B-VII.1 SM-149
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 SM-149
resonance absorption cross sections

Energy (MeV) vs. Cross section (barns)

Capture cross sections are shown as a function of energy. The plot displays resonances at specific energy levels, where the cross section significantly increases.
ENDF/B-VII.1 SM-149
resonance absorption cross sections
ENDF/B-VII.1 SM-149
UR total cross section
ENDF/B-VII.1 SM-149
UR elastic cross section

Cross section (barns) vs. Energy (MeV)

- Inf. Dil.
- 100 b
- 1 b
ENDF/B-VII.1 SM-149
UR capture cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 SM-149
Non-threshold reactions

Energy (MeV)

Cross section (barns)

(n,gma)
(n,a)
(n,xa)
ENDF/B-VII.1 SM-149
Heating

Heating (MeV/reaction) vs. Energy (MeV)

- The graph shows the heating as a function of energy for the ENDF/B-VII.1 SM-149 dataset.
- The heating increases significantly with energy, particularly above 15 MeV.
ENDF/B-VII.1 SM-149
Damage

![Graph showing the relationship between energy (MeV) and damage (MeV-barns). The graph indicates an upward trend with increased energy leading to greater damage.](image-url)
ENDF/B-VII.1 SM-149
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*21)
ENDF/B-VII.1 SM-149
Threshold reactions

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 SM-149
Threshold reactions

![Graph showing cross section vs. energy for various reactions]

- (n,2np)
- (n,n*c)
- (n,p)
- (n,xp)
- (n,p*0)

Cross section (barns) vs. Energy (MeV)
ENDF/B-VII.1 SM-149
Threshold reactions

![Graph showing energy (MeV) versus cross section (barns) for various threshold reactions. The x-axis represents energy in MeV ranging from 2 to 20. The y-axis represents cross section in barns with a logarithmic scale, ranging from $10^{-1}$ to 250. Different colors represent different reactions: (n,p*6), (n,p*7), (n,p*8), (n,p*9), and (n,p*10). The graph peaks at around 8 MeV for (n,p*6) and decreases for higher energy reactions.]
Threshold reactions

Cross section (barns) vs. Energy (MeV) for ENDF/B-VII.1 SM-149.

- (n,p*11)
- (n,p*12)
- (n,p*13)
- (n,p*14)
- (n,p*15)
ENDF/B-VII.1 SM-149
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,p^*16)
- (n,p^*17)
- (n,p^*18)
- (n,p^*19)
- (n,p^*20)
ENDF/B-VII.1 SM-149
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,p*21)
(n,p*22)
(n,p*23)
(n,p*24)
(n,p*25)
ENDF/B-VII.1 SM-149
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,p*26)
(n,p*27)
(n,p*28)
(n,p*29)
(n,p*30)

Energy (MeV)
ENDF/B-VII.1 SM-149
Threshold reactions

Cross section (barns)

Energy (MeV)

(n,p*31)
(n,p*32)
(n,p*33)
(n,p*34)
(n,p*35)
ENDF/B-VII.1 SM-149
Threshold reactions

Energy (MeV)

*10^-3

Cross section (barns)

(n,p*c)

Energy (MeV)
ENDF/B-VII.1 SM-149
angular distribution for elastic
ENDF/B-VII.1 SM-149
angular distribution for (n,n*1)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*2)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*3)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*4)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*5)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*7)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*8)
ENDF/B-VII.1 SM-149
angular distribution for \((n,n^\ast11)\)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*12)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*13)
ENDF/B-VII.1 SM-149
angular distribution for \((n,n^{*}14)\)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*15)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*16)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*17)
ENDF/B-VII.1 SM-149
angular distribution for \((n,n^{18})\)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*19)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*20)
ENDF/B-VII.1 SM-149
angular distribution for (n,n*21)
ENDF/B-VII.1 SM-149
Neutron emission for (n,2n)
ENDF/B-VII.1 SM-149
Neutron emission for (n,3n)
ENDF/B-VII.1 SM-149
Neutron emission for (n,n*)a
ENDF/B-VII.1 SM-149
Neutron emission for (n,2n)a
ENDF/B-VII.1 SM-149
Neutron emission for \((n,n^*)p\)
ENDF/B-VII.1 SM-149
Neutron emission for (n,2np)
ENDF/B-VII.1 SM-149
Neutron emission for (n,n*c)
ENDF/B-VII.1 SM-149
Photon emission for (n,2n)
ENDF/B-VII.1 SM-149
Photon emission for (n,3n)
ENDF/B-VII.1 SM-149
Photon emission for \((n,n^*)a\)
ENDF/B-VII.1 SM-149
Photon emission for (n,2n)a
ENDF/B-VII.1 SM-149
Photon emission for (n,2np)
Photon emission for $(n,n^*c)$

ENDF/B-VII.1 SM-149

$E_\gamma$ (MeV) vs. $E_n$ (MeV)

Probability vs. Photon Energy
Photon emission for (n,gma)
ENDF/B-VII.1 SM-149
Photon emission for (n,p*c)
ENDF/B-VII.1 SM-149
thermal capture photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
ENDF/B-VII.1 SM-149
14 MeV photon spectrum
ENDF/B-VII.1 SM-149
Recoil Heating

Heating (MeV/reaction)

Energy (MeV)
ENDF/B-VII.1 SM-149
Particle production cross sections

Energy (MeV)

*10^3

Cross section (barns)

protons

alphas

Energy (MeV)
ENDF/B-VII.1 SM-149
protons from (n,n*)p
ENDF/B-VII.1 SM-149
protons from (n,2np)
ENDF/B-VII.1 SM-149
angular distribution for (n,p*0) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p^1) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*2) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*4) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*5) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*6) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*7) proton

Prob/Cos

10^0

10^-1

1.0 0.5 0.0 -0.5 -1.0

Cosine

4 6 8 10 12 14 16 18 20

Energy (MeV)
ENDF/B-VII.1 SM-149
angular distribution for (n,p*8) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p^9) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*10) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*11) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*12) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*13) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*14) proton
ENDF/B-VII.1 SM-149
angular distribution for \( (n,p^{*15}) \) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*16) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*17) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*18) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*19) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*21) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*22) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*23) proton
ENDF/B-VII.1 SM-149
angular distribution for \((n,p^{*24})\) proton

\[ \begin{align*}
\text{Energy (MeV)} & \quad 4 \quad 6 \quad 8 \quad 10 \quad 12 \quad 14 \quad 16 \quad 18 \quad 20 \\
\text{Cosine} & \quad -1 \quad -0.5 \quad 0 \quad 0.5 \quad 1 \\
\text{Prob/Cos} & \quad 10^{-1} \quad 10^0 \quad 10^1 \quad 10^2 \quad 10^3
\end{align*} \]
ENDF/B-VII.1 SM-149
angular distribution for (n,p*25) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*26) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*27) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*28) proton

Prob/Cos

10^0

10^-1

Energy (MeV)

Cosine

1.0 0.5 0.0 -0.5 -1.0 0

4 6 8 10 12 14 16 18 20
ENDF/B-VII.1 SM-149
angular distribution for (n,p*29) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*30) proton
ENDF/B-VII.1 SM-149
angular distribution for \((n,p^{31})\) proton
ENDF/B-VII.1 SM-149
angular distribution for \((n,p^{*32})\) proton

Cosine

Energy (MeV)

Prob/Cos

10^0

10^-1

10^-2

10^-3

10^-4

10^-5

10^-6

10^-7

10^-8

10^-9

10^-10

10^-11

10^-12

10^-13

10^-14

10^-15

10^-16

10^-17

10^-18

10^-19

10^-20
ENDF/B-VII.1 SM-149 angular distribution for (n,p*33) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*34) proton
ENDF/B-VII.1 SM-149
angular distribution for (n,p*35) proton
ENDF/B-VII.1 SM-149
protons from (n,p*c)
ENDF/B-VII.1 SM-149
alphas from (n,n*)a
ENDF/B-VII.1 SM-149
alphas from (n,2n)a