ENDF/B-VII PD-106
Principal cross sections

![Cross section graph](image)

- **Total**: Black line
- **Absorption**: Blue line
- **Elastic**: Green line
- **Gamma Production**: Red line

**Energy (MeV)**

**Cross section (barns)**

- $10^{-11}$
- $10^{-9}$
- $10^{-7}$
- $10^{-5}$
- $10^{-3}$
- $10^{-1}$
- $10^{1}$

- $10^{0}$
- $10^{1}$
- $10^{2}$
- $10^{3}$
ENDF/B-VII PD-106
resonance total cross section

Energy (MeV)

Cross section (barns)

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

total
ENDF/B-VII PD-106
resonance total cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII PD-106  
resonance total cross section
ENDF/B-VII PD-106
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
ENDF/B-VII PD-106
resonance absorption cross sections

Energy (MeV)

Cross section (barns)
ENDF/B-VII PD-106
Non-threshold reactions

![Graph showing cross-sections for different reactions](image-url)
ENDF/B-VII PD-106
Inelastic levels

![Graph showing inelastic levels with energy on the x-axis and cross section (barns) on the y-axis. The graph includes multiple curves for different inelastic processes, each labeled as (n,n*1), (n,n*2), (n,n*3), (n,n*4), and (n,n*5).]
ENDF/B-VII PD-106
Inelastic levels

Energy (MeV)

Cross section (barns)

- (n,n*6)
- (n,n*7)
- (n,n*8)
- (n,n*9)
- (n,n*10)

Energy (MeV)
ENDF/B-VII PD-106
Inelastic levels

Energy (MeV)

Cross section (barns)

- (n,n*16)
- (n,n*17)
- (n,n*18)
- (n,n*19)
- (n,n*20)
ENDF/B-VII PD-106
Inelastic levels

Cross section (barns) vs. Energy (MeV)

- (n,n*21)
- (n,n*22)
- (n,n*23)
- (n,n*24)
ENDF/B-VII PD-106
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,n*)d
(n,4n)
(n,2np)
(n,n*c)
(n,p)
Threshold reactions

Energy (MeV)

Cross section (barns)
ENDF/B-VII PD-106
Threshold reactions

Cross section (barns)

Energy (MeV)
angular distribution for elastic
ENDF/B-VII PD-106
angular distribution for (n,n*3)
ENDF/B-VII PD-106
angular distribution for (n,n*4)
ENDF/B-VII PD-106

angular distribution for \((n,n^*5)\)
ENDF/B-VII PD-106
angular distribution for (n,n*7)
ENDF/B-VII PD-106
angular distribution for \((n,n^*8)\)
ENDF/B-VII PD-106
angular distribution for (n,n*10)
ENDF/B-VII PD-106
angular distribution for \((n,n^{*12})\)
ENDF/B-VII PD-106
angular distribution for (n,n*13)

Prob/Cos

Energy (MeV)

Cosine
ENDF/B-VII PD-106
angular distribution for (n,n*14)
ENDF/B-VII PD-106
angular distribution for (n,n*15)
ENDF/B-VII PD-106
angular distribution for (n,n*16)
ENDF/B-VII PD-106
angular distribution for (n,n*17)
ENDF/B-VII PD-106
angular distribution for \((n,n^*18)\)
ENDF/B-VII PD-106
angular distribution for (n,n*19)
ENDF/B-VII PD-106
angular distribution for (n,n*20)
ENDF/B-VII PD-106 angular distribution for (n,n*21)
ENDF/B-VII PD-106
angular distribution for (n,n*22)
ENDF/B-VII PD-106
angular distribution for (n,n*23)
ENDF/B-VII PD-106
Neutron emission for (n,3n)
ENDF/B-VII PD-106
Neutron emission for \((n,n^*)a\)
ENDF/B-VII PD-106
Neutron emission for \((n,2n)a\)
ENDF/B-VII PD-106
Neutron emission for (n,n*)p
ENDF/B-VII PD-106
Neutron emission for \((n,n^*)d\)
ENDF/B-VII PD-106
Neutron emission for (n,4n)
Neutron emission for (n,2np)
ENDF/B-VII PD-106
Neutron emission for (n,n*c)
ENDF/B-VII PD-106
Photon emission for (n,2n)
ENDF/B-VII PD-106
Photon emission for (n,n*)a
ENDF/B-VII PD-106
Photon emission for (n,2n)a
ENDF/B-VII PD-106
Photon emission for (n,n*)p
ENDF/B-VII PD-106
Photon emission for (n,2np)
ENDF/B-VII PD-106
Photon emission for (n,n*1)
ENDF/B-VII PD-106
Photon emission for \((n,n^*2)\)
ENDF/B-VII PD-106
Photon emission for (n,n*3)
ENDF/B-VII PD-106
Photon emission for (n,n*4)
ENDF/B-VII PD-106 Photon emission for (n,n*6)
ENDF/B-VII PD-106
Photon emission for (n,n\*g)
ENDF/B-VII PD-106
Photon emission for (n,n*10)
ENDF/B-VII PD-106
Photon emission for (n,n*11)

\[ P_{\text{Prob/Mev}} \times E_\gamma (\text{MeV}) \]

\[ E_\gamma (\text{MeV}) \times \text{Prob/Mev} \]

\[ E_\gamma (\text{MeV}) \times \text{Prob/Mev} \]

\[ E_\gamma (\text{MeV}) \times \text{Prob/Mev} \]
Photon emission for (n,n*12)
ENDF/B-VII PD-106
Photon emission for (n,n*13)
ENDF/B-VII PD-106
Photon emission for (n,n*14)
ENDF/B-VII PD-106
Photon emission for (n,n*16)
ENDF/B-VII PD-106
Photon emission for (n,n*17)
ENDF/B-VII PD-106
Photon emission for (n,n\*18)
ENDF/B-VII PD-106
Photon emission for (n,n*19)
ENDF/B-VII PD-106
Photon emission for (n, n^*21)
Photon emission for $(n,n'22)$
ENDF/B-VII PD-106
Photon emission for (n,n*23)
ENDF/B-VII PD-106
Photon emission for \((n,n^*24)\)
ENDF/B-VII PD-106
Photon emission for (n,n*c)
Photon emission for (n,d*1)
ENDF/B-VII PD-106
Photon emission for (n,d*2)
ENDF/B-VII PD-106
Photon emission for (n,d*3)
Photon emission for \((n,d^*5)\)
ENDF/B-VII PD-106
Photon emission for (n,d*6)
Photon emission for $(n,d^*7)$

ENDF/B-VII PD-106
ENDF/B-VII PD-106
Photon emission for (n,d*8)
ENDF/B-VII PD-106
Photon emission for (n,d*10)
ENDF/B-VII PD-106
Photon emission for (n,d*11)
ENDF/B-VII PD-106
Photon emission for (n,d*13)
ENDF/B-VII PD-106
Photon emission for (n,d*14)
ENDF/B-VII PD-106
Photon emission for (n,d*15)
Photon emission for (n,d*16)
ENDF/B-VII PD-106
Photon emission for (n,d*17)
Photon emission for (n,d*18)
Photon emission for (n,d*19)
ENDF/B-VII PD-106
Photon emission for (n,d*c)
Photon emission for (n,a*1)
Photon emission for \((n,a^*2)\)
ENDF/B-VII PD-106
Photon emission for \((n,a^\ast 3)\)
ENDF/B-VII PD-106
Photon emission for \((n,a^5)\)
Photon emission for \( (n, a^*6) \)
ENDF/B-VII PD-106
Photon emission for (n,a*7)
Photon emission for (n,a*8)

\[ E_\gamma (\text{MeV}) \times 10^3 \]

\[ P_{\text{prob}}/\text{MeV} \]

\[ E_n (\text{MeV}) \]

ENDF/B-VII PD-106
Photon emission for (n,a*8)
ENDF/B-VII PD-106
Photon emission for (n,a*11)
ENDF/B-VII PD-106
Photon emission for (n,a*12)
Photon emission for (n,a*)13

ENDF/B-VII PD-106

Photon emission for (n,a*13)
ENDF/B-VII PD-106
Photon emission for (n,a*14)
ENDF/B-VII PD-106
Photon emission for (n,a*15)
ENDF/B-VII PD-106
Photon emission for (n,a*16)
ENDF/B-VII PD-106
Photon emission for (n,a*18)
ENDF/B-VII PD-106
Photon emission for (n,a*19)
ENDF/B-VII PD-106
Photon emission for (n,a*c)
ENDF/B-VII PD-106
thermal capture photon spectrum
ENDF/B-VII PD-106
14 MeV photon spectrum
ENDF/B-VII PD-106
Particle heating contributions

Energy (MeV)

MeV/collision

Energy (MeV)

protons
deuterons
alphas
ENDF/B-VII PD-106
Particle production cross sections

Energy (MeV)

Cross section (barns)

protons
deuterons
alphas

Energy (MeV)
ENDF/B-VII PD-106 protons from (n,n^*)p
ENDF/B-VII PD-106
protons from (n,2np)
angular distribution for (n,p*0) proton

Energy (MeV)

Cosine

Prob/Cos

ENDF/B-VII PD-106
ENDF/B-VII PD-106
angular distribution for (n,p*1) proton

Probl/Cos

10^-1

10^0

10^1

10^2

10^3

Cosine

-1.0

-0.5

0.0

0.5

1.0

Energy (MeV)

30
ENDF/B-VII PD-106
deuterons from (n,n*)d
angular distribution for \((n,d^*0)\) deuteron
angular distribution for (n,d*) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*3) deuteron
ENDF/B-VII PD-106
angular distribution for \((n,d^*4)\) deuteron
angular distribution for (n,d*5) deuteron

ENDF/B-VII PD-106
ENDF/B-VII PD-106
angular distribution for \((n,d^{*6})\) deuteron
angular distribution for (n,d*7) deuteron
angular distribution for (n,d*8) deuteron
angular distribution for (n,d*9) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*10) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*11) deuteron

Prob/Cos

10^-1
10^0
10^1

Energy (MeV)

Cosine

0.5 0.0 -0.5 -1.0

10 15 20 25 30
angular distribution for (n, d*12) deuteron

ENDF/B-VII PD-106
ENDF/B-VII PD-106
angular distribution for (n,d*13) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*14) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*15) deuteron
ENDF/B-VII PD-106
angular distribution for \((n,d^{17})\) deuteron
ENDF/B-VII PD-106
angular distribution for \((n,d^{*18})\) deuteron
ENDF/B-VII PD-106
angular distribution for (n,d*19) deuteron
ENDF/B-VII PD-106
alphas from (n,n*)a
ENDF/B-VII PD-106
alphas from \((n,2n)a\)
ENDF/B-VII PD-106
angular distribution for (n,a^0) alpha
angular distribution for (n,a*1) alpha

ENDF/B-VII PD-106
ENDF/B-VII PD-106
angular distribution for (n,a^2) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*3) alpha
ENDF/B-VII PD-106
angular distribution for \((n,a^4)\) alpha

![Graph showing angular distribution for \((n,a^4)\) alpha with energy on the x-axis, cosine on the y-axis, and probability on the z-axis. The graph is a 3D plot with logarithmic scales.]
ENDF/B-VII PD-106
angular distribution for (n,a*6) alpha
ENDF/B-VII PD-106

angular distribution for (n,a*8) alpha

Energy (MeV)

Cosine

Prob/Cos
ENDF/B-VII PD-106
angular distribution for (n,a^9) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*10) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*11) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*12) alpha
ENDF/B-VII PD-106
angular distribution for \( (n,a^{14}) \) alpha

\begin{align*}
\text{Energy (MeV)} & 0 & 5 & 10 & 15 & 20 & 25 & 30 \\
\text{Cosine} & -1.0 & -0.5 & 0.0 & 0.5 & 1.0 \\
\text{Prob/Cos} & 1.0 & 1.1 & 10^{-0} & 10^{-1} & 10^{-2} & 10^{-3} & 10^{-4}
\end{align*}
ENDF/B-VII PD-106
angular distribution for (n,a*15) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*16) alpha

Energy (MeV)
angular distribution for (n,a*17) alpha
ENDF/B-VII PD-106
angular distribution for (n,a*18) alpha
ENDF/B-VII PD-106
alphas from (n,a*c)