ENDF/B-VII.1 CL-37
Principal cross sections

Cross section (barns)

Energy (MeV)

- total
- absorption
- elastic
- gamma production
ENDF/B-VII.1 CL-37
resonance total cross section
ENDF/B-VII.1 CL-37
resonance total cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 CL-37
resonance total cross section

Energy (MeV) vs. Cross section (barns)
ENDF/B-VII.1 CL-37
resonance absorption cross sections

Energy (MeV)

Cross section (barns)
ENDF/B-VII.1 CL-37
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 CL-37
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
ENDF/B-VII.1 CL-37
resonance absorption cross sections

Energy (MeV) vs. Cross section (barns)

- Capture

Log-log scale with energy ranging from $10^0$ to $10^1$ MeV and cross section ranging from $10^{-4}$ to $10^{-3}$ barns.
ENDF/B-VII.1 CL-37
Non-threshold reactions

![Graph showing cross section vs. energy](image)

- Energy (MeV)
- Cross section (barns)

(n,gma)
ENDF/B-VII.1 CL-37
Principal cross sections

Energy (MeV)

Cross section (barns)

total
absorption
elastic
gamma production

Energy (MeV)
ENDF/B-VII.1 CL-37
Non-threshold reactions

Energy (MeV)

Cross section (barns)

(n,gma)
ENDF/B-VII.1 CL-37
Inelastic levels

ENDEF/B-VII.1 CL-37
Inelastic levels

Energy (MeV)

Cross section (barns)

- (n,n*21)
- (n,n*22)
- (n,n*23)
- (n,n*24)
- (n,n*25)
ENDF/B-VII.1 CL-37
Inelastic levels

Cross section (barns)

Energy (MeV)

(n,n*26)

(n,n*27)
ENDF/B-VII.1 CL-37
Threshold reactions

Energy (MeV) vs. Cross section (barns)

- (n,xp)
- (n,xd)
- (n,xt)
- (n,xa)
- (n,p*c)
ENDF/B-VII.1 CL-37
Threshold reactions

Cross section (barns)

Energy (MeV)

0
10
20
30
40
50

*10^{-6}

(n,t*7)
(n,t*8)
(n,t*9)
(n,t*10)
(n,t*11)
ENDF/B-VII.1 CL-37
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,a*0)
(n,a*1)
(n,a*2)
(n,a*3)
(n,a*4)
ENDF/B-VII.1 CL-37
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,a*5)
(n,a*c)
ENDF/B-VII.1 CL-37
angular distribution for elastic
ENDF/B-VII.1 CL-37 angular distribution for (n,n*1)
ENDF/B-VII.1 CL-37
angular distribution for (n,n^*2)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*3)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*4)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*5)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*6)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*7)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*8)
ENDF/B-VII.1 CL-37
angular distribution for \( (n,n^{*9}) \)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*10)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*11)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*12)
ENDF/B-VII.1 CL-37
angular distribution for \((n,n^*13)\)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*14)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*15)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*16)
ENDF/B-VII.1 CL-37
angular distribution for \((n,n^*17)\)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*18)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*19)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*20)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*21)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*22)
ENDF/B-VII.1 CL-37
angular distribution for (n, n*23)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*24)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*25)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*26)
ENDF/B-VII.1 CL-37
angular distribution for (n,n*27)
ENDF/B-VII.1 CL-37
Neutron emission for (n,2n)
ENDF/B-VII.1 CL-37
Neutron emission for (n,3n)
ENDF/B-VII.1 CL-37
Neutron emission for \((n,n^*)a\)
ENDF/B-VII.1 CL-37
Neutron emission for (n,n*)p
ENDF/B-VII.1 CL-37
Neutron emission for (n,n*)d

[Graph showing neutron emission probabilities as a function of energy and secondary energy]
ENDF/B-VII.1 CL-37
Neutron emission for (n,n*c)
ENDF/B-VII.1 CL-37
Photon emission for (n,gma)
ENDF/B-VII.1 CL-37
Photon emission for (n,3n)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*)a
ENDF/B-VII.1 CL-37
Photon emission for (n,n*)p
ENDF/B-VII.1 CL-37
Photon emission for \((n, n^*)d\)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*1)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*2)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*3)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*4)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*5)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*6)
ENDF/B-VII.1 CL-37
Photon emission for \((n,n^*7)\)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*8)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*9)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*10)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*11)
ENDF/B-VII.1 CL-37
Photon emission for \((n,n^*13)\)
ENDF/B-VII.1 CL-37
Photon emission for \((n,n'14)\)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*15)
ENDF/B-VII.1 CL-37
Photon emission for \((n,n^{*16})\)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*17)
ENDF/B-VII.1 CL-37
Photon emission for (n,n^*18)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*19)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*20)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*21)
ENDF/B-VII.1 CL-37
Photon emission for (n,n\(^{22}\))
ENDF/B-VII.1 CL-37
Photon emission for (n,n*23)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*24)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*25)
ENDF/B-VII.1 CL-37
Photon emission for (n,n^*26)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*27)
ENDF/B-VII.1 CL-37
Photon emission for (n,n*c)
ENDF/B-VII.1 CL-37
Photon emission for (n,p*c)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*1)
ENDF/B-VII.1 CL-37
Photon emission for \((n,d^*2)\)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*3)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*4)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*5)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*6)
ENDF/B-VII.1 CL-37
Photon emission for (n,d^7)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*8)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*9)
ENDF/B-VII.1 CL-37
Photon emission for \( (n,d^*10) \)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*_11*)
ENDF/B-VII.1 CL-37
Photon emission for (n,d*c)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*1)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*2)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*3)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*4)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*5)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*6)
ENDF/B-VII.1 CL-37
Photon emission for \( (n,t^*7) \)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*9)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*10)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*11)
ENDF/B-VII.1 CL-37
Photon emission for \((n,t^*12)\)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*13)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*14)
ENDF/B-VII.1 CL-37
Photon emission for (n,t*15)
ENDF/B-VII.1 CL-37
Photon emission for (n,t^c)
ENDF/B-VII.1 CL-37
Photon emission for (n,α*)

\[
\begin{align*}
\text{Prob/MeV} & \quad 10^{-2} \quad 10^{-1} \quad 10^{0} \\
E_y (\text{MeV}) & \quad 0.4 \quad 0.5 \quad 1 \quad 2 \quad 4 \quad 6 \quad 8 \quad 10 \quad 12 \quad 14 \quad 16 \quad 18 \quad 20 \\
E_n (\text{MeV}) & 
\end{align*}
\]
ENDF/B-VII.1 CL-37
Photon emission for \( (n,a^*2) \)
ENDF/B-VII.1 CL-37
Photon emission for (n,a*3)
ENDF/B-VII.1 CL-37
Photon emission for (n,α*4)
ENDF/B-VII.1 CL-37
Photon emission for (n,a*5)
ENDF/B-VII.1 CL-37
Photon emission for (n,a*c)
ENDF/B-VII.1 CL-37
thermal capture photon spectrum
ENDF/B-VII.1 CL-37
14 MeV photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
ENDF/B-VII.1 CL-37
Particle heating contributions

Energy (MeV)
MeV/collision

Energy (MeV)

protons
deuteronstritonsalphas
ENDF/B-VII.1 CL-37
Recoil Heating

Recoil heating

Energy (MeV)

Heating (MeV/reaction)
Particle production cross sections

Energy (MeV)

Cross section (barns)

- protons
- deuterons
- tritons
- alphas
ENDF/B-VII.1 CL-37
protons from \((n,n^*)p\)
ENDF/B-VII.1 CL-37
protons from (n,p*c)
ENDF/B-VII.1 CL-37
deuterons from \((n,n^*)d\)
ENDF/B-VII.1 CL-37
angular distribution for \( \text{(n,d}^0) \) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*1) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*2) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*3) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*4) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*5) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*6) deuteron
ENDF/B-VII.1 CL-37
angular distribution for \( (n,d^*7) \) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*8) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*10) deuteron
ENDF/B-VII.1 CL-37
angular distribution for (n,d*11) deuteron
ENDF/B-VII.1 CL-37
deuteron from (n,d*c)
ENDF/B-VII.1 CL-37
angular distribution for \((n,t^*0)\) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*1) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*2) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*3) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*4) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*5) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*6) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*7) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*8) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*9) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*10) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*11) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*12) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*13) triton
ENDF/B-VII.1 CL-37
angular distribution for (n, t*14) triton
ENDF/B-VII.1 CL-37
angular distribution for (n,t*15) triton
ENDF/B-VII.1 CL-37
alphas from (n,n*)a
ENDF/B-VII.1 CL-37
angular distribution for (n,a*0) alpha
ENDF/B-VII.1 CL-37
angular distribution for (n,a^*1) alpha
ENDF/B-VII.1 CL-37
angular distribution for (n,α^2) alpha
ENDF/B-VII.1 CL-37
angular distribution for (n,a*3) alpha
ENDF/B-VII.1 CL-37
angular distribution for (n,a*4) alpha
ENDF/B-VII.1 CL-37
angular distribution for (n,a^5) alpha
ENDF/B-VII.1 CL-37
alphas from (n,a*c)