Principal cross sections

Energy (MeV) vs Cross section (barns)

- total
- absorption
- elastic
- gamma production

ENDF/B-VII.1 ND-146
ENDF/B-VII.1 ND-146
resonance total cross section
ENDF/B-VII.1 ND-146
resonance total cross section

Energy (MeV)

Cross section (barns)

total

10^{-3}  10^{-2}

10^{-1}  10^{0}

10^{1}  10^{2}

10^{3}

10^{-2}
ENDF/B-VII.1 ND-146
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 ND-146
UR elastic cross section

Energy (MeV)

Cross section (barns)

Data points for different energies and cross sections are plotted on a log-log scale.
ENDF/B-VII.1 ND-146

UR capture cross section

Cross section (barns)

Energy (MeV)

- Inf. Dil.
- 100 b
- 1 b
ENDF/B-VII.1 ND-146
Heating

Energy (MeV)

Heating (MeV/reaction)
ENDF/B-VII.1 ND-146
Non-threshold reactions

Energy (MeV)

Cross section (barns)

(n,gma)
ENDF/B-VII.1 ND-146
Non-threshold reactions

![Graph showing cross section vs. energy for (n,gma) reaction]
ENDF/B-VII.1 ND-146
Inelastic levels

Energy (MeV)

Cross section (barns)

- (n,n*1)
- (n,n*2)
- (n,n*3)
- (n,n*4)
- (n,n*5)
ENDF/B-VII.1 ND-146
Threshold reactions

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 ND-146
Threshold reactions

Cross section (barns) vs. Energy (MeV)
ENDF/B-VII.1 ND-146
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,a^6)
- (n,a^7)
- (n,a^8)
- (n,a^9)
- (n,a^10)
Threshold reactions

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 ND-146
angular distribution for elastic
ENDF/B-VII.1 ND-146
angular distribution for (n,n*1)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*2)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*3)
ENDF/B-VII.1 ND-146
angular distribution for \((n,n^*4)\)
ENDF/B-VII.1 ND-146
angular distribution for \((n,n^*5)\)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*6)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*7)

Energy (MeV)

Prob/Cos

Cosine

1.0 0.5 0.0 -0.5 -1.0 0

1.0 0.5 0.0 -0.5 -1.0 0
ENDF/B-VII.1 ND-146
angular distribution for (n,n*8)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*9)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*10)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*11)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*13)
ENDF/B-VII.1 ND-146
angular distribution for \((n,n^*14)\)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*15)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*16)
ENDF/B-VII.1 ND-146
angular distribution for \((n,n^{*}17)\)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*18)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*19)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*20)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*21)
ENDF/B-VII.1 ND-146
angular distribution for (n,n*22)
ENDF/B-VII.1 ND-146
Neutron emission for (n,2n)
ENDF/B-VII.1 ND-146
Neutron emission for (n,3n)
ENDF/B-VII.1 ND-146
Neutron emission for (n,n*)a
ENDF/B-VII.1 ND-146
Neutron emission for (n,2n)a
ENDF/B-VII.1 ND-146
Neutron emission for \((n,n^*)p\)
ENDF/B-VII.1 ND-146
Neutron emission for (n,2np)
Photon emission for (n,2n)
ENDF/B-VII.1 ND-146
Photon emission for (n,3n)
ENDF/B-VII.1 ND-146
Photon emission for (n,2n)a
ENDF/B-VII.1 ND-146
Photon emission for (n,2np)
ENDF/B-VII.1 ND-146
Photon emission for (n,n*c)
ENDF/B-VII.1 ND-146
Photon emission for (n,gma)
ENDF/B-VII.1 ND-146
Photon emission for (n,p*\(c\))
Photon emission for \((n,a^*c)\)
ENDF/B-VII.1 ND-146
thermal capture photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
ENDF/B-VII.1 ND-146
14 MeV photon spectrum
ENDF/B-VII.1 ND-146
Particle heating contributions

Energy (MeV)

MeV/collision

0 2 4 6 8 10 12 14 16 18 20

*10^{-3}

protons

alphas

Energy (MeV)
Recoil Heating

ENDF/B-VII.1 ND-146

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

- Heating (MeV/reaction)
- Energy (MeV)
- recoil heating
ENDF/B-VII.1 ND-146
protons from (n,n*)p
ENDF/B-VII.1 ND-146
angular distribution for (n,p^0) proton
ENDF/B-VII.1 ND-146
angular distribution for (n, p*1) proton
ENDF/B-VII.1 ND-146
angular distribution for (n,p*2) proton
ENDF/B-VII.1 ND-146
angular distribution for (n,p*3) proton
ENDF/B-VII.1 ND-146
angular distribution for (n,p*4) proton
ENDF/B-VII.1 ND-146
angular distribution for (n,p*5) proton
ENDF/B-VII.1 ND-146
protons from (n,p*c)
ENDF/B-VII.1 ND-146
alphas from (n,n*)a
ENDF/B-VII.1 ND-146
alphas from (n,2n)a
ENDF/B-VII.1 ND-146
angular distribution for (n,\alpha^0) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*1) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*2) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a^3) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*4) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*5) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*6) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n, a*7) alpha
ENDF/B-VII.1 ND-146
angular distribution for (n,a*)9 alpha
ENDF/B-VII.1 ND-146
angular distribution for \(n, a^{*10}\) alpha
ENDF/B-VII.1 ND-146 angular distribution for (n,a*11) alpha
ENDF/B-VII.1 ND-146
alphas from (n,α*c)