ENDF/B-VII.1 CE-138
Principal cross sections

Energy (MeV)

Cross section (barns)

- total
- absorption
- elastic
- gamma production
ENDF/B-VII.1 CE-138
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
ENDF/B-VII.1 CE-138
UR total cross section

Energy (MeV)

Cross section (barns)

Inf. Dil.
100 b
1 b

Energy (MeV)

Cross section (barns)
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UR elastic cross section

Energy (MeV)

Inf. Dil.

100 b

1 b

Cross section (barns)

$10^{-1}$

$10^{1}$

$10^{-3}$ $10^{-2}$ $10^{-1}$ $10^{0}$

Energy (MeV)
ENDF/B-VII.1 CE-138
UR capture cross section

Energy (MeV)

Cross section (barns)

Inf. Dil.
100 b
1 b
ENDF/B-VII.1 CE-138
Non-threshold reactions

- Energy (MeV)
  - Cross section (barns)
    - (n,gma)
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Heating

Energy (MeV) vs. Heating (MeV/reaction) graph.
ENDF/B-VII.1 CE-138
Inelastic levels

Cross section (barns) vs. Energy (MeV)

- (n,n*1)
- (n,n*2)
- (n,n*3)
- (n,n*4)
- (n,n*5)
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,xp)
- (n,xa)
- (n,p*0)
- (n,p*1)
- (n,p*2)
ENDF/B-VII.1 CE-138
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,p*8)
- (n,p*9)
- (n,p*10)
- (n,p*c)
- (n,a*0)
ENDF/B-VII.1 CE-138
Threshold reactions

Energy (MeV) vs. Cross section (barns) for different reactions:
- (n,a*1)
- (n,a*2)
- (n,a*3)
- (n,a*4)
- (n,a*5)
ENDF/B-VII.1 CE-138
Threshold reactions

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*1)
ENDF/B-VII.1 CE-138
angular distribution for \((n,n^*2)\)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*3)
ENDF/B-VII.1 CE-138
angular distribution for \((n,n^*4)\)
ENDF/B-VII.1 CE-138
angular distribution for \((n,n^*5)\)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*6)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*7)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*8)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*9)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*10)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*11)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*12)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*13)
ENDF/B-VII.1 CE-138
angular distribution for (n,n*14)
ENDF/B-VII.1 CE-138
Neutron emission for (n,2n)
ENDF/B-VII.1 CE-138
Neutron emission for (n,3n)
ENDF/B-VII.1 CE-138
Neutron emission for \((n,n^*)a\)
ENDF/B-VII.1 CE-138
Neutron emission for (n,2n)a
ENDF/B-VII.1 CE-138
Neutron emission for (n,n*)p
ENDF/B-VII.1 CE-138
Neutron emission for (n,n*c)
ENDF/B-VII.1 CE-138
Photon emission for (n,2n)
ENDF/B-VII.1 CE-138
Photon emission for (n,n*)a
ENDF/B-VII.1 CE-138
Photon emission for (n,2n)a
ENDF/B-VII.1 CE-138
Photon emission for (n,n*)p
ENDF/B-VII.1 CE-138
Photon emission for (n,2np)
ENDF/B-VII.1 CE-138
Photon emission for \((n,n^*c)\)
ENDF/B-VII.1 CE-138
Photon emission for (n,gma)
ENDF/B-VII.1 CE-138
Photon emission for (n,p*c)
ENDF/B-VII.1 CE-138
Photon emission for (n,a*c)
ENDF/B-VII.1 CE-138 thermal capture photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
ENDF/B-VII.1 CE-138
14 MeV photon spectrum

![Graph showing the photon spectrum with the abscissa labeled Gamma Energy (MeV) and the ordinate labeled Gamma Prod (barns/MeV). The graph displays the variation of gamma production with energy, with the gamma energy ranging from 0 to 30 MeV and the gamma product ranging from $10^{-13}$ to $10^1$ barns/MeV.]
ENDF/B-VII.1 CE-138
Particle heating contributions

Energy (MeV) vs. MeV/collision

- **protons**
- **alphas**
ENDF/B-VII.1 CE-138
Recoil Heating

- Heating (MeV/reaction)
- Energy (MeV)

Graph shows the relationship between energy (MeV) and heating (MeV/reaction) for recoil heating.
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Particle production cross sections

Energy (MeV)

Protons
Alphas
ENDF/B-VII.1 CE-138
protons from (n,2np)
ENDF/B-VII.1 CE-138
angular distribution for (n,p*0) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p^*1) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p^2) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*3) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*4) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*5) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*6) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*7) proton

Energy (MeV)
ENDF/B-VII.1 CE-138
angular distribution for (n,p*8) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*9) proton
ENDF/B-VII.1 CE-138
angular distribution for (n,p*10) proton
ENDF/B-VII.1 CE-138
protons from \((n,p^*c)\)
ENDF/B-VII.1 CE-138
alphas from (n,n*)a
ENDF/B-VII.1 CE-138
alphas from (n,2n)a
ENDF/B-VII.1 CE-138
angular distribution for (n,a*0) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,a*1) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,a*2) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,α^3) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,a*4) alpha

Prob/Cos

10.0
10.1
10.0
Cosine -1.0 -0.5 0.0 0.5 1.0

Energy (MeV)

20
15
10
5

Prob/Cos
ENDF/B-VII.1 CE-138
angular distribution for (n,a*5) alpha

3D plot showing the angular distribution with energy (MeV) on the x-axis, cosine on the y-axis, and the logarithm of the probability on the z-axis.
ENDF/B-VII.1 CE-138
angular distribution for (n,a*6) alpha
ENDF/B-VII.1 CE-138
angular distribution for \(\text{(n, a^*7) alpha}\)
ENDF/B-VII.1 CE-138
angular distribution for (n,a^8) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,a*9) alpha
ENDF/B-VII.1 CE-138
angular distribution for (n,a*10) alpha
ENDF/B-VII.1 CE-138
alphas from (n,a*c)