Principal cross sections

Cross section (barns)

Energy (MeV)

- total
- absorption
- elastic
- gamma production
Total cross section as a function of energy.
Total cross section as a function of energy for FENDL-3.2 using the NJOY2016.60+ processor.

- Energy (MeV) ranges from $10^{-5}$ to $10^{-4}$.
- Cross section (barns) ranges from $10^{-5}$ to $10^4$.

The plot shows two prominent resonances at different energy levels, indicating significant cross section values at those energies.
Total resonance total cross section
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
resonance total cross section

Energy (MeV) vs. Cross section (barns)

- Total

10^1 to 10^2 energy range and 10^1 to 10^2 cross section range.
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
resonance absorption cross sections

Cross section (barns) vs. Energy (MeV) graph with a line labeled 'capture'.
resonance absorption cross sections

Energy (MeV) vs. Cross section (barns) plot.
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
resonance absorption cross sections

capture
resonance absorption cross sections

capture
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
resonance absorption cross sections

![Graph of cross section vs. energy. The y-axis is labeled 'Cross section (barns)' and ranges from $10^{-3}$ to 1. The x-axis is labeled 'Energy (MeV)' and ranges from $10^1$ to $10^2$. The graph shows a decreasing trend in cross section with increasing energy.]

capture
Non-threshold reactions

Energy (MeV)

Cross section (barns)

- (n,gma)
- (n,a)
- (n,xa)
Principal cross sections

Cross section (barns)

Energy (MeV)

- total
- absorption
- elastic
- gamma production
Heating

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

Heating increases with increasing energy.
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Inelastic levels

Graph showing cross section (barns) versus energy (MeV) for various reactions: (n,n*1), (n,n*2), (n,n*3), (n,n*4), (n,n*5).
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Inelastic levels

![Graph showing cross section (barns) vs. Energy (MeV) for different inelastic levels: $(n,n^{*11})$, $(n,n^{*12})$, $(n,n^{*13})$, $(n,n^{*14})$, $(n,n^{*15})$. The cross section is plotted on a log scale, with different colors representing each level. The y-axis is labeled as Cross section (barns) and the x-axis as Energy (MeV).]
Inelastic levels

Cross section (barns) vs. Energy (MeV) for different inelastic levels:

- (n,n*16)
- (n,n*17)
- (n,n*18)
- (n,n*19)
- (n,n*20)

The graph shows the cross section in barns as a function of energy in MeV for various inelastic levels.
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,x)
- (n,2n)
- (n,3n)
- (n,n*)a
- (n,2n)a
Threshold reactions

- $(n,n^*p)$
- $(n,n^*d)$
- $(n,n^*t)$
- $(n,2np)$
- $(n,n^*c)$
Threshold reactions

- $(n,p)$
- $(n,d)$
- $(n,t)$
- $(n,xp)$
- $(n,xd)$

Energy (MeV) vs. Cross section (barns)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Threshold reactions

- (n,xt)
- (n,xhe3)
- (n,p^c)

Cross section (barns) vs. Energy (MeV) graph.
angular distribution for elastic
angular distribution for elastic
angular distribution for (n,n*1)
angular distribution for (n,n*2)
angular distribution for (n,n*3)
angular distribution for (n,n*4)
angular distribution for (n,n*5)
angular distribution for (n,n*6)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
angular distribution for (n,n*8)
angular distribution for (n,n*9)
angular distribution for (n,n*10)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
angular distribution for (n,n*11)
angular distribution for \((n, n^{*12})\)
angular distribution for (n,n*13)
angular distribution for (n,n\*14)
angular distribution for (n,n*15)
angular distribution for (n,n*16)
angular distribution for \((n,n^{*17})\)
angular distribution for (n,n*18)
angular distribution for (n,n*19)
angular distribution for (n,n*20)
Neutron emission for (n,x)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Neutron emission for (n,2n)
Neutron emission for (n,3n)
Neutron emission for \((n,n^*)a\)
Neutron emission for (n,2n)a
Neutron emission for (n,n*)p
Neutron emission for (n,n*)d
Neutron emission for \((n,n^*)t\)
Neutron emission for (n,2np)
Neutron emission for (n,n*{c})
Photon emission for (n,2n)
Photon emission for (n,3n)
Photon emission for (n,2n)a
Photon emission for (n,n*)d
Photon emission for \((n,n^*)t\)
Photon emission for (n,2np)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Photon emission for \((n,n^*c)\)
Photon emission for (n,gma)
Photon emission for (n,p*ε)
Photon emission for (n,a*c)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
thermal capture photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
14 MeV photon spectrum
Particle heating contributions

- Protons
- Deuterons
- Tritons
- He-3
- Alphas

Energy (MeV) vs. MeV/collision
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
Recoil Heating

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

- Energy (MeV): 0 to 200
- Heating (MeV/reaction): 0 to 3.0

Graph showing the recoil heating as a function of energy.
Particle production cross sections

Energy (MeV)

Cross section (barns)

- protons
- deuterons
- tritons
- he-3
- alphas

Energy (MeV):

0.0 50.0 100.0 150.0 200.0

Cross section (barns):

0.0 0.5 1.0 1.5 2.0 2.5

78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
protons from \((n,n^*)p\)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
protons from (n,2np)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+ protons from (n,p*c)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
tritons from (n,x)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
tritons from \((n,n^*)t\)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+ he3s from (n,x)
Prob/MeV

10^-1

10^-3

0

Sec. Energy

0 100 200

Energy (MeV)

0 50 100 150 200

10 PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
alphas from (n,x)
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+ alphas from (n,n*)a
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+ alphas from (n,2n)a
angular distribution for (n,a*0) alpha
angular distribution for (n,a*1) alpha
angular distribution for (n,a*2) alpha
Angular distribution for (n, α*3) alpha
78-PT-195 FOR FENDL-3.2 PROCESSED BY NJOY2016.60+
alphas from (n,a*c)