Principal cross sections

- Total
- Absorption
- Elastic
- Gamma production

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
resonance total cross section

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.6
resonance total cross section

[Graph showing the total cross section as a function of energy (MeV), with cross section on a logarithmic scale and energy on a logarithmic scale.]
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+resonance total cross section

![Graph showing total cross section as a function of energy. The graph has a logarithmic scale on both axes, with the energy axis ranging from $10^{-4}$ to $10^{-2}$ MeV and the cross section axis ranging from $10^{-4}$ to $10^4$ barns. The graph includes a line labeled 'total.' ]
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
resonance total cross section

Energy (MeV)

Cross section (barns)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
resonance total cross section

Energy (MeV)

Cross section (barns)

10^0 10^1

10^0 10^1

total
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

resonance absorption cross sections

Capture cross section as a function of energy (MeV). The graph shows a sharp peak at high energies, typical of resonance absorption.
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
resonance absorption cross sections

capture

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
resonance absorption cross sections

Cross section (barns)

Energy (MeV)

capture
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+resonance absorption cross sections
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
resonance absorption cross sections

capture

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+Damage

Energy (MeV) vs. Damage (MeV-barns) graph.
Non-threshold reactions

Energy (MeV)

Cross section (barns)

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

Cross section (barns) vs. Energy (MeV)

- **total**
- **absorption**
- **elastic**
- **gamma production**
Non-threshold reactions

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Inelastic levels

Energy (MeV)

Cross section (barns)

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4

0 5 10 15 20 25 30
Energy (MeV)

(n,n^1)
(n,n^2)
(n,n^3)
(n,n^4)
(n,n^5)
Inelastic levels

Cross section (barns)

Energy (MeV)

Other reactions:
- (n,n*6)
- (n,n*7)
- (n,n*8)
- (n,n*9)
- (n,n*10)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

Inelastic levels

![Graph showing cross section vs. energy for different inelastic levels](image-url)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

Inelastic levels

Cross section (barns) vs. Energy (MeV) for different inelastic reactions:
- (n,n*21)
- (n,n*22)
- (n,n*23)
- (n,n*24)
- (n,n*25)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

Inelastic levels

![Graph showing inelastic levels](image)

- (n,n^*26)
- (n,n^*27)
- (n,n^*28)
- (n,n^*29)
- (n,n^*30)

Energy (MeV)

Cross section (barns)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Threshold reactions

Cross section (barns)

Energy (MeV)

1. (n,x)
2. (n,2nd)
3. (n,2n)
4. (n,3n)
5. (n,n*)a
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,2n)a
- (n,3n)a
- (n,n*)p
- (n,n*)2a
- (n,n*)d
Threshold reactions

- $\text{(n,n*)t}$
- $\text{(n,n*)he3}$
- $\text{(n,4n)}$
- $\text{(n,2np)}$
- $\text{(n,3np)}$
Threshold reactions

Cross section (barns)

Energy (MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,t)
- (n,he3)
- (n,2a)
- (n,2p)
- (n,pa)
Threshold reactions

Cross section (barns)

Energy (MeV)

(n,pd)
(n,pt)
(n,da)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,xp)
- (n,xd)
- (n,xt)
- (n,xhe3)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for elastic
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for (n,n*1)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*2)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*3)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*4)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for (n,n*5)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*6)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for \( (n,n^*7) \)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*8)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*9)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*10)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 angular distribution for (n,n*11)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for (n,n*12)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for \((n,n^\ast14)\)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
angular distribution for (n,n*15)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
- angular distribution for \((n,n^*16)\)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for (n,n*17)
angular distribution for (n,n*18)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*19)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+angular distribution for (n,n*20)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*21)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 -
angular distribution for (n,n*22)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*23)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*24)
angular distribution for (n,n*25)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+angular distribution for (n,n*26)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*27)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
angular distribution for (n,n*28)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
angular distribution for (n,n*30)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,x)
Neutron emission for (n,2nd)
Neutron emission for (n,2n)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
Neutron emission for (n,3n)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

Neutron emission for (n,n*)a
Neutron emission for (n,2n)a
Neutron emission for (n,3n)a
Neutron emission for (n,n*)p
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-Neutron emission for (n,n*)2a
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+Neutron emission for (n,n*)d
Neutron emission for (n,n*)t
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,n*)he3
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+Neutron emission for (n,4n)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,2np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,3np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,2np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Neutron emission for (n,npa)
Neutron emission for (n,n*c)
Photon emission for (n,x)
Photon emission for (n,2nd)
Photon emission for (n,3n)
Photon emission for (n,n*)a
Photon emission for (n,2n)a

![Graph showing photon emission probability vs. neutron energy and gamma energy.](image-url)
Photon emission for (n,3n)a
Photon emission for \((n,n^*)p\)
Photon emission for (n,n*)2a

PROB/MeV

Eγ (MeV)

E_n (MeV)

10^0

10^1

10^2

10^-0

10^-1

10^-2
Photon emission for \((n,n^*)d\)
Photon emission for \((n,n^\ast)t\)
Photon emission for \((n,n^*)\text{he}3\)
Photon emission for (n,4n)
Photon emission for (n,3np)
Photon emission for (n,2np)
Photon emission for (n,npa)
Photon emission for \((n,n^*c)\)
Photon emission for (n,gma)
Photon emission for (n,p)
Photon emission for (n,d)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
Photon emission for (n,t)
Photon emission for (n,he3)
Photon emission for (n,a)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
Photon emission for (n,2a)
Photon emission for (n,2p)
Photon emission for (n,pa)
Photon emission for \((n, pd)\)
Photon emission for (n,pt)
Photon emission for (n,da)
Gamma Energy (MeV)

Gamma Prod (barns/MeV)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-14 MeV photon spectrum
Particle heating contributions

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

Energy (MeV) vs. MeV/collision
Recoil Heating

Heating (MeV/reaction) vs. Energy (MeV)
Particle production cross sections

Cross section (barns) vs. Energy (MeV)

- Protons
- Deuterons
- Tritons
- He-3
- Alphas
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
protons from (n,x)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
protons from \((n,n^*)p\)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
protons from (n,2np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+ protons from (n,3np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
protons from (n,2np)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
protons from (n,npa)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 protons from (n,p)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 protons from (n,pa)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
protons from (n,pd)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
protons from (n,pt)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
deuterons from (n,x)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+deuterons from (n,2nd)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
-deuterons from (n,n*)d
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60-
deuterons from (n,d)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+deuterons from (n,pd)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+deuterons from (n,da)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 tritons from (n,x)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60

tritons from \((n,n^*)t\)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+tritons from (n,t)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60 tritons from (n,pt)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
he3s from (n,x)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+he3s from (n,n*)he3
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
he3s from (n,he3)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+alphas from (n,x)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+alphas from (n,n*)a
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
alphas from (n,3n)a
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
alphas from (n,n*)2a
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+alphas from (n,npa)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+alphas from (n,a)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60
alphas from (n,2a)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+
alphas from (n,pa)
62-SM-152 FOR FENDL-3.2 FROM TENDL-2019 BY NJOY2016.60+alphas from (n,da)