Principal cross sections

Cross section (barns)

Energy (MeV)

- total
- absorption
- elastic
- gamma production
ENDF/B-VII.1 NP-237
resonance total cross section

![Graph showing the resonance total cross section for 237Np. The graph plots energy in MeV on the x-axis and cross section in barns on the y-axis. There is a prominent peak in the cross section at a certain energy level, indicating a resonance effect.](image-url)
ENDF/B-VII.1 NP-237
resonance total cross section
ENDF/B-VII.1 NP-237
resonance total cross section

Energy (MeV)

Cross section (barns)

10^{-5}  10^{-4}
ENDF/B-VII.1 NP-237
resonance total cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 NP-237
resonance total cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 NP-237
resonance total cross section
ENDF/B-VII.1 NP-237
resonance absorption cross sections

![Graph showing cross sections vs. energy. The graph plots cross section (barns) on a logarithmic scale against energy (MeV) on a logarithmic scale. Two curves are shown: one solid line for capture and one dashed line for fission.](image)
ENDF/B-VII.1 NP-237
resonance absorption cross sections
ENDF/B-VII.1 NP-237
resonance absorption cross sections

![Graph showing energy (MeV) on the x-axis and cross section (barns) on the y-axis. The graph displays multiple resonances with peaks at various energy levels, indicating regions of high absorption cross sections. There is a clear distinction between the capture and fission processes.]
ENDF/B-VII.1 NP-237
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

- Capture
- Fission

from $10^{-4}$ to $10^{-3}$ MeV
ENDF/B-VII.1 NP-237
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 NP-237
UR total cross section

Cross section (barns)

Energy (MeV)
ENDF/B-VII.1 NP-237
UR capture cross section

Energy (MeV)

Cross section (barns)

Inf. Dil.

100 b

1 b
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Non-threshold reactions

Energy (MeV)

Cross section (barns)

10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^0 10^1

fission
(n,gma)
ENDF/B-VII.1 NP-237
Damage

Damage (MeV-barns) vs. Energy (MeV)
ENDF/B-VII.1 NP-237
Inelastic levels

![Graph showing cross-sections for different (n,n*) reactions vs energy](image-url)

- (n,n*16)
- (n,n*17)
- (n,n*18)
- (n,n*19)
- (n,n*20)
ENDF/B-VII.1 NP-237
Inelastic levels

![Graph showing inelastic levels for different reactions](image-url)

- (n,n*21)
- (n,n*22)
- (n,n*23)
- (n,n*24)
- (n,n*25)
ENDF/B-VII.1 NP-237
Inelastic levels

Cross section (barns) vs. Energy (MeV)

- (n,n*26)
- (n,n*27)
- (n,n*28)
- (n,n*29)
- (n,n*30)
ENDF/B-VII.1 NP-237
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*31)
ENDF/B-VII.1 NP-237
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,2n)
- (n,3n)
- (n,4n)
- (n,n^c)
ENDF/B-VII.1 NP-237
angular distribution for elastic
ENDF/B-VII.1 NP-237
Total fission nubar

The graph shows the relationship between energy (in MeV) and fission nubar. The nubar increases linearly with energy, indicating that the probability of fission increases as the energy increases.
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Delayed nubar

Energy (MeV)

Delayed nubar

*10^{-3}

13
12
11
10
9
8
7
6
5

0 5 10 15 20

Energy (MeV)
ENDF/B-VII.1 NP-237
Delayed neutron spectra

Energy (MeV)

Probability

10^{-2}

10^{-1}

10^{0}

10^{1}

10^{2}

10^{3}

10^{4}

10^{5}

Group 1 frac 0.0400 decay/shake 1.325E-10
Group 2 frac 0.2162 decay/shake 3.160E-10
Group 3 frac 0.1558 decay/shake 1.168E-09
Group 4 frac 0.3633 decay/shake 3.006E-09
Group 5 frac 0.1659 decay/shake 8.667E-09
Group 6 frac 0.0589 decay/shake 2.766E-08
Photon emission for fission
ENDF/B-VII.1 NP-237
Photon emission for (n,gma)
ENDF/B-VII.1 NP-237
Photon emission for nonelastic
ENDF/B-VII.1 NP-237
thermal capture photon spectrum
ENDF/B-VII.1 NP-237
14 MeV photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)