Principal cross sections

**Cross section (barns)**

- total
- absorption
- elastic
- gamma production

**Energy (MeV)**

- $10^{-11}$
- $10^{-9}$
- $10^{-7}$
- $10^{-5}$
- $10^{-3}$
- $10^{-1}$
- $10^0$
- $10^1$

**20-CA-NAT APT LA150 NJOY 97.18 MCNPX**
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance total cross section

Cross section (barns)

Energy (MeV)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance total cross section

![Graph showing the total cross section as a function of energy (MeV). The x-axis represents energy in MeV, ranging from $10^{-4}$ to $10^{-2}$, and the y-axis represents the cross section in barns, ranging from $10^0$ to $10^0$. The graph shows a nearly constant cross section across the energy range.]
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance total cross section

Energy (MeV)

Cross section (barns)

total
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance total cross section

Cross section (barns)

Energy (MeV)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance absorption cross sections

Capture cross section variation with energy.
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance absorption cross sections

![Graph showing resonance absorption cross sections with a peak at a certain energy.]
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
resonance absorption cross sections

\[
\begin{align*}
\text{Cross section (barns)} & \quad \text{Energy (MeV)} \\
10^{-4} & \quad 10^0 & \quad 10^1
\end{align*}
\]
Non-threshold reactions

Cross section (barns)

Energy (MeV)
Principal cross sections

- total
- absorption
- elastic
- gamma production

Energy (MeV) vs. Cross section (barns)
Non-threshold reactions

Energy (MeV)

Cross section (barns)

- $^{(n,gma)}$ (dashed)
- $^{(n,a)}$ (dashdotted)
- $^{(n,xa)}$ (dotted)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
Inelastic levels

Cross section (barns)

Energy (MeV)
Threshold reactions

20-CA-NAT APT LA150 NJOY 97.18 MCNPX

Cross section (barns)

Energy (MeV)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
Threshold reactions

![Graph showing the cross section (in barns) vs. energy (in MeV) for the reaction (n,xhe3). The graph illustrates a threshold behavior with a sharp increase in cross section at a certain energy.](image-url)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for elastic
angular distribution for elastic
angular distribution for (n,n*2)
angular distribution for (n,n*3)
angular distribution for (n,n*4)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for (n,n*5)
angular distribution for (n,n*6)
angular distribution for (n,n*7)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for (n,n*8)
angular distribution for (n,n*9)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for (n, n*10)
angular distribution for (n,n*11)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for (n,n*12)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
angular distribution for (n,n*13)
Neutron emission for (n,x)
Neutron emission for \((n,n^*)p\)
Neutron emission for \((n,n^*c)\)
Photon emission for inelastic
Photon emission for (n,n*)a
Photon emission for (n,n*)p
Photon emission for \( (n,gma) \)
Photon emission for (n,p)
Photon emission for (n,a)
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
thermal capture photon spectrum
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
14 MeV photon spectrum
protons from mt= 5
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
deuterons from mt=5
tritons from mt= 5
20-CA-NAT APT LA150 NJOY 97.18 MCNPX
alphas from mt= 5