JENDL-3.3 ZR-96
Principal cross sections

Energy (MeV)

Cross section (barns)

- total
- absorption
- elastic
- gamma production
JENDL-3.3 ZR-96
resonance total cross section

Cross section (barns)

Energy (MeV)

10^{-4} \quad 10^{-3}
JENDL-3.3 ZR-96
resonance total cross section

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96
resonance total cross section

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96
resonance total cross section

Energy (MeV)

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96
resonance absorption cross sections

Capture cross section vs. energy (MeV)
JENDL-3.3 ZR-96
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
JENDL-3.3 ZR-96
resonance absorption cross sections

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
JENDL-3.3 ZR-96
Principal cross sections

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96

Heating

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

The graph shows the heating (MeV/reaction) as a function of energy (MeV). The heating increases significantly with increasing energy.
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Threshold reactions

Cross section (barns)

Energy (MeV)
JENDL-3.3 ZR-96
angular distribution for elastic
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angular distribution for (n,n*1)
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angular distribution for \((n,n^*2)\)
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angular distribution for (n,n*3)
JENDL-3.3 ZR-96
angular distribution for (n,n*4)
JENDL-3.3 ZR-96
angular distribution for (n,n*5)
JENDL-3.3 ZR-96
angular distribution for (n,n^*6)
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angular distribution for (n,n*7)
JENDL-3.3 ZR-96
Neutron emission for (n,2n)
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Neutron emission for (n,3n)
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Neutron emission for (n,n*)a

Prob/MeV

Sec. Energy

Energy (MeV)

10^1

10^0

10^-1

10^-2
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Neutron emission for (n,n*)p
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Neutron emission for (n,n*c)
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Photon emission for (n,2n)
JENDL-3.3 ZR-96
Photon emission for (n,3n)
JENDL-3.3 ZR-96
Photon emission for (n,n\*)a
JENDL-3.3 ZR-96
Photon emission for (n,n*)p
JENDL-3.3 ZR-96
Photon emission for (n,n*c)
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Photon emission for (n,gma)
JENDL-3.3 ZR-96
Photon emission for (n,a)
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14 MeV photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)

Graph showing the photon spectrum of 14 MeV with a logarithmic scale on both axes.
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Particle heating contributions

![Graph showing particle heating contributions for protons, deuterons, tritons, and alphas as a function of energy.](image-url)
JENDL-3.3 ZR-96
protons from (n,xp)
JENDL-3.3 ZR-96
deuterons from \((n, xd)\)
JENDL-3.3 ZR-96 tritons from \( (n,xt) \)
JENDL-3.3 ZR-96
alphas from (n,xa)