JEFF-3.1 CA-40
resonance total cross section

Energy (MeV)

Cross section (barns)

- total
JEFF-3.1 CA-40
resonance total cross section

Energy (MeV) vs. Cross section (barns)
JEFF-3.1 CA-40

resonance total cross section

Energy (MeV)

Cross section (barns)
JEFF-3.1 CA-40
resonance total cross section
JEFF-3.1 CA-40
resonance absorption cross sections

capture
JEFF-3.1 CA-40
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
JEFF-3.1 CA-40
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
JEFF-3.1 CA-40
resonance absorption cross sections

Capture cross section vs. energy (MeV).
JEFF-3.1 CA-40
Heating

![Graph showing Heating (MeV/reaction) vs Energy (MeV). The graph has a logarithmic scale on the y-axis ranging from $10^{-12}$ to $10^1$ and a linear scale on the x-axis ranging from $10^{-11}$ to $10^1$. The heating curve is plotted with a logarithmic scale on the y-axis.](image-url)
JEFF-3.1 CA-40 Damage

Damage

Energy (MeV)

Damage (MeV-barns)
JEFF-3.1 CA-40
Non-threshold reactions

Cross section (barns) vs. Energy (MeV) for different reactions:
- (n,gma)
- (n,a)
- (n,xa)
JEFF-3.1 CA-40
Heating

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

- Heating curve shows an increasing trend as energy increases.
JEFF-3.1 CA-40
Non-threshold reactions

Energy (MeV)

Cross section (barns)

- $(n,gma)$
- $(n,a)$
- $(n,xa)$
JEFF-3.1 CA-40
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)
JEFF-3.1 CA-40
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,2np)
- (n,npa)
- (n,n*c)
- (n,p)
- (n,d)
JEFF-3.1 CA-40
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,xp)
- (n,xd)
- (n,xt)
- (n,xhe3)
- (n,p*0)
JEFF-3.1 CA-40
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,p*6)

(n,p*7)

(n,p*8)

(n,p*9)

(n,p*10)
JEFF-3.1 CA-40
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,p^c)
(n,d^0)
(n,d^1)
(n,d^2)
(n,d^3)
JEFF-3.1 CA-40
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,he3*0)
- (n,he3*1)
- (n,he3*2)
- (n,he3*3)
- (n,he3*4)
JEFF-3.1 CA-40
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,a*4)
- (n,a*5)
- (n,a*6)
- (n,a*7)
- (n,a*8)
JEFF-3.1 CA-40
angular distribution for elastic
JEFF-3.1 CA-40
angular distribution for elastic
JEFF-3.1 CA-40
angular distribution for (n,n*1)
JEFF-3.1 CA-40
angular distribution for (n,n*2)
JEFF-3.1 CA-40
angular distribution for (n,n*3)
JEFF-3.1 CA-40
angular distribution for \( (n,n^*4) \)
JEFF-3.1 CA-40
angular distribution for (n,n*5)
JEFF-3.1 CA-40
angular distribution for (n,n*6)
JEFF-3.1 CA-40
angular distribution for \((n,n^*7)\)
JEFF-3.1 CA-40
angular distribution for (n,n*8)
JEFF-3.1 CA-40
angular distribution for (n,n*9)
JEFF-3.1 CA-40
angular distribution for (n,n*10)
JEFF-3.1 CA-40
angular distribution for (n,n*11)
JEFF-3.1 CA-40
angular distribution for \((n,n^*12)\)
JEFF-3.1 CA-40
angular distribution for (n,n*13)
JEFF-3.1 CA-40
angular distribution for (n,n*14)
JEFF-3.1 CA-40
angular distribution for \((n,n^{*15})\)
JEFF-3.1 CA-40
angular distribution for (n,n*16)
JEFF-3.1 CA-40
angular distribution for (n,n*17)
JEFF-3.1 CA-40
angular distribution for \((n,n^*18)\)
JEFF-3.1 CA-40
angular distribution for (n,n*19)
JEFF-3.1 CA-40
angular distribution for (n,n*20)
JEFF-3.1 CA-40
Neutron emission for (n,x)
JEFF-3.1 CA-40
Neutron emission for (n,2n)
JEFF-3.1 CA-40
Neutron emission for \((n,n^*)a\)
JEFF-3.1 CA-40
Neutron emission for \((n,n^*)p\)
JEFF-3.1 CA-40
Neutron emission for \((n,n^*)_{2a}\)
JEFF-3.1 CA-40
Neutron emission for (n,2np)
JEFF-3.1 CA-40
Neutron emission for \((n,n^*c)\)
JEFF-3.1 CA-40
Photon emission for (n,2n)
JEFF-3.1 CA-40
Photon emission for \((n,n^*)a\)
JEFF-3.1 CA-40
Photon emission for (n,n*)p
JEFF-3.1 CA-40
Photon emission for \((n,n^*2a)\)
JEFF-3.1 CA-40
Photon emission for (n,2np)
JEFF-3.1 CA-40
Photon emission for (n,npa)
JEFF-3.1 CA-40
Photon emission for (n,n*1)
JEFF-3.1 CA-40
Photon emission for (n,n*2)
JEFF-3.1 CA-40
Photon emission for (n,n*3)
JEFF-3.1 CA-40
Photon emission for (n,n^*4)
JEFF-3.1 CA-40
Photon emission for (n,n*5)
JEFF-3.1 CA-40
Photon emission for (n,n*6)
JEFF-3.1 CA-40
Photon emission for \((n,n^*7)\)
JEFF-3.1 CA-40
Photon emission for \((n,n^*8)\)
JEFF-3.1 CA-40
Photon emission for (n,n*9)
JEFF-3.1 CA-40
Photon emission for (n,n*10)
JEFF-3.1 CA-40
Photon emission for (n,n^*11)
JEFF-3.1 CA-40
Photon emission for (n, n'*12)
JEFF-3.1 CA-40
Photon emission for (n,n*13)
JEFF-3.1 CA-40
Photon emission for (n,n*14)
JEFF-3.1 CA-40
Photon emission for (n,n*15)
JEFF-3.1 CA-40
Photon emission for (n,n*16)
JEFF-3.1 CA-40
Photon emission for (n,n^*17)
JEFF-3.1 CA-40
Photon emission for \((n,n^*18)\)
JEFF-3.1 CA-40
Photon emission for (n,n*19)
JEFF-3.1 CA-40
Photon emission for (n,n*20)
JEFF-3.1 CA-40
Photon emission for (n,n^*c)
JEFF-3.1 CA-40
Photon emission for (n,gma)
JEFF-3.1 CA-40
Photon emission for (n,2p)
JEFF-3.1 CA-40
Photon emission for (n,pa)
JEFF-3.1 CA-40
Photon emission for (n,da)
JEFF-3.1 CA-40
Photon emission for (n,p*1)
JEFF-3.1 CA-40
Photon emission for (n,p*2)
JEFF-3.1 CA-40
Photon emission for (n,p*3)
JEFF-3.1 CA-40
Photon emission for (n,p*4)
JEFF-3.1 CA-40
Photon emission for (n,p*5)
JEFF-3.1 CA-40
Photon emission for (n,p*6)
JEFF-3.1 CA-40
Photon emission for (n,p*7)
JEFF-3.1 CA-40
Photon emission for (n,p*8)
JEFF-3.1 CA-40
Photon emission for (n,p*9)
JEFF-3.1 CA-40
Photon emission for \((n,p^{*10})\)
JEFF-3.1 CA-40
Photon emission for (n,p^c)
JEFF-3.1 CA-40
Photon emission for (n,d*1)
JEFF-3.1 CA-40
Photon emission for (n,d*2)
JEFF-3.1 CA-40
Photon emission for (n,d*3)
JEFF-3.1 CA-40
Photon emission for (n,d*4)
JEFF-3.1 CA-40
Photon emission for \((n,d^*5)\)
JEFF-3.1 CA-40
Photon emission for (n,d*c)
JEFF-3.1 CA-40
Photon emission for \((n, \gamma^*1)\)
JEFF-3.1 CA-40
Photon emission for (n,t*2)
JEFF-3.1 CA-40
Photon emission for (n,t*3)
JEFF-3.1 CA-40
Photon emission for (n,t*4)
JEFF-3.1 CA-40
Photon emission for (n,t*5)
JEFF-3.1 CA-40
Photon emission for (n,t*\gamma)
JEFF-3.1 CA-40
Photon emission for (n,he3*1)
JEFF-3.1 CA-40
Photon emission for (n,he3*2)
JEFF-3.1 CA-40
Photon emission for (n,he3*3)
JEFF-3.1 CA-40
Photon emission for (n,he3*4)
JEFF-3.1 CA-40
Photon emission for (n,he3*5)
JEFF-3.1 CA-40
Photon emission for \( (n,he3^*c) \)
JEFF-3.1 CA-40
Photon emission for (n,a^1)
JEFF-3.1 CA-40
Photon emission for \((n,a^*2)\)
JEFF-3.1 CA-40
Photon emission for \( (n,a^*3) \)
JEFF-3.1 CA-40
Photon emission for (n,a*4)
JEFF-3.1 CA-40
Photon emission for (n,a*5)
JEFF-3.1 CA-40
Photon emission for (n,a*6)
JEFF-3.1 CA-40
Photon emission for \((n,a^*7)\)
JEFF-3.1 CA-40
Photon emission for \((n,a^*8)\)
JEFF-3.1 CA-40
Photon emission for (n,a*)9
JEFF-3.1 CA-40
Photon emission for (n,a*10)
JEFF-3.1 CA-40
Photon emission for (n,a*c)
JEFF-3.1 CA-40
thermal capture photon spectrum
JEFF-3.1 CA-40
14 MeV photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
JEFF-3.1 CA-40
Particle heating contributions

Energy (MeV)

MeV/collision

0 5 10 15 20 25 30 35

0 50 100 150 200

protons
deuterons
tritons
he-3
alphas
JEFF-3.1 CA-40
Recoil Heating

![Graph showing recoil heating vs energy](image-url)

- Energy (MeV)
- Heating (MeV/reaction)
JEFF-3.1 CA-40
Particle production cross sections

Energy (MeV)

Cross section (barns)

protons
deuterons
tritons
he-3
alphas
JEFF-3.1 CA-40
protons from (n,x)
JEFF-3.1 CA-40
protons from (n,n*)p
JEFF-3.1 CA-40
protons from (n,2np)
JEFF-3.1 CA-40
protons from (n,npa)
JEFF-3.1 CA-40
protons from (n,2p)
JEFF-3.1 CA-40
protons from (n,pa)
JEFF-3.1 CA-40
protons from (n,pd)
JEFF-3.1 CA-40
angular distribution for (n,p*0) proton
JEFF-3.1 CA-40
angular distribution for (n,p*1) proton

Energy (MeV)
JEFF-3.1 CA-40
angular distribution for (n,p*2) proton
JEFF-3.1 CA-40 angular distribution for (n,p*3) proton
JEFF-3.1 CA-40
angular distribution for (n,p*4) proton
JEFF-3.1 CA-40
angular distribution for (n,p*5) proton
JEFF-3.1 CA-40
angular distribution for (n,p*6) proton
JEFF-3.1 CA-40
angular distribution for (n,p*7) proton
JEFF-3.1 CA-40
angular distribution for (n,p*8) proton
JEFF-3.1 CA-40
angular distribution for \((n,p^*9)\) proton

\[
\begin{array}{cccccc}
\text{Cosine} & 1.0 & 0.5 & 0.0 & -0.5 & -1.0 \\
\hline
\text{Energy (MeV)} & 4 & 6 & 8 & 10 & 12 & 14 & 16 & 18 & 20 \\
\end{array}
\]

$10^0$
JEFF-3.1 CA-40
angular distribution for (n,p*10) proton
JEFF-3.1 CA-40
protons from (n,p*c)
JEFF-3.1 CA-40
deuteron from (n,x)
JEFF-3.1 CA-40
deuterons from (n,pd)
JEFF-3.1 CA-40
deuterons from (n,da)
JEFF-3.1 CA-40
angular distribution for (n,d*0) deuteron
JEFF-3.1 CA-40
angular distribution for (n,d*1) deuteron
JEFF-3.1 CA-40
angular distribution for (n,d*2) deuteron
JEFF-3.1 CA-40
angular distribution for (n,d*3) deuteron
JEFF-3.1 CA-40
angular distribution for (n,d*4) deuteron
JEFF-3.1 CA-40
angular distribution for (n,d*5) deuteron
JEFF-3.1 CA-40
deuterons from (n,d*c)
JEFF-3.1 CA-40
tritons from \((n,x)\)
JEFF-3.1 CA-40
angular distribution for (n,t*0) triton
JEFF-3.1 CA-40
angular distribution for (n,t*1) triton
JEFF-3.1 CA-40
angular distribution for (n,t*2) triton
JEFF-3.1 CA-40
angular distribution for (n,t*3) triton
JEFF-3.1 CA-40
angular distribution for (n,t*4) triton
JEFF-3.1 CA-40
angular distribution for (n,t*5) triton
JEFF-3.1 CA-40
tritons from (n,t*c)
JEFF-3.1 CA-40
he3s from (n,x)
JEFF-3.1 CA-40
angular distribution for (n,he3*0) 3he
JEFF-3.1 CA-40
angular distribution for (n,he3*1) 3he
JEFF-3.1 CA-40
angular distribution for (n,he3*2) 3he
JEFF-3.1 CA-40
angular distribution for (n,he3*3) 3he
JEFF-3.1 CA-40
angular distribution for (n,he3*4) 3he
JEFF-3.1 CA-40
angular distribution for (n,he3*5) 3he
JEFF-3.1 CA-40
he3s from (n,he3*c)
JEFF-3.1 CA-40
alphas from (n,x)
JEFF-3.1 CA-40
alphas from (n,n*)a

Energy (MeV)

Sec. Energy

Prob/Mev
JEFF-3.1 CA-40
alphas from \((n,n^*)2a\)
JEFF-3.1 CA-40
alphas from (n,npa)
JEFF-3.1 CA-40
alphas from (n,2a)
JEFF-3.1 CA-40
alphas from (n,pa)
JEFF-3.1 CA-40
alphas from (n,da)
JEFF-3.1 CA-40
angular distribution for (n,a*0) alpha
JEFF-3.1 CA-40
angular distribution for (n,a*1) alpha
JEFF-3.1 CA-40
angular distribution for (n,a^3) alpha
JEFF-3.1 CA-40
angular distribution for (n,a*4) alpha
JEFF-3.1 CA-40
angular distribution for (n,a^5) alpha
JEFF-3.1 CA-40
angular distribution for (n,a*6) alpha
JEFF-3.1 CA-40
angular distribution for (n,a*7) alpha
JEFF-3.1 CA-40
angular distribution for \((n,a^8)\) alpha
JEFF-3.1 CA-40
angular distribution for (n,a*9) alpha
JEFF-3.1 CA-40
angular distribution for \((n,a^*10)\) alpha
JEFF-3.1 CA-40
alphas from (n,a*c)