ENDF/B-VII.1 PB-208
Principal cross sections

Energy (MeV)

Cross section (barns)

- total
- absorption
- elastic
- gamma production

Energy (MeV)
ENDF/B-VII.1 PB-208
resonance total cross section

Energy (MeV)

Cross section (barns)

10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2}

total
ENDF/B-VII.1 PB-208
resonance total cross section

Energy (MeV)

Cross section (barns)

10^{-1} to 10^{2}

10^{-1} to 10^{0}

total
ENDF/B-VII.1 PB-208 resonance total cross section
ENDF/B-VII.1 PB-208
resonance absorption cross sections

capture
ENDF/B-VII.1 PB-208
resonance absorption cross sections
ENDF/B-VII.1 PB-208
resonance absorption cross sections

![Graph showing resonance absorption cross sections](image-url)
ENDF/B-VII.1 PB-208
Heating

![Graph showing the heating of PB-208 as a function of energy. The y-axis represents heating in MeV/reaction on a logarithmic scale, and the x-axis represents energy in MeV. The graph shows a significant increase in heating as the energy increases.]
Principal cross sections
ENDF/B-VII.1 PB-208
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

Energy (MeV)

0 5 10 15 20 25 30
ENDF/B-VII.1 PB-208
Inelastic levels

![Graph showing inelastic levels for different reactions.

- Energy (MeV) is plotted on the x-axis, ranging from 0 to 30 MeV.
- Cross section (barns) is plotted on the y-axis, ranging from 0 to 80 *10^-3 barns.
- The graph includes multiple curves, each representing different reactions:
  - (n,n*6)
  - (n,n*7)
  - (n,n*8)
  - (n,n*9)
  - (n,n*10)

Each curve shows the cross section as a function of energy, with distinct peaks and tails indicating the inelastic scattering behavior for each reaction.]
ENDF/B-VII.1 PB-208
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*11)

(n,n*12)

(n,n*13)

(n,n*14)

(n,n*15)
ENDF/B-VII.1 PB-208
Inelastic levels

Energy (MeV)

Cross section (barns)

Energy (MeV)

(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)
ENDF/B-VII.1 PB-208
Inelastic levels

Cross section (barns) vs. Energy (MeV)
ENDF/B-VII.1 PB-208
Inelastic levels

Energy (MeV)

Cross section (barns)

- (n,n*36)
- (n,n*37)
- (n,n*38)
- (n,n*39)
- (n,n*40)
Threshold reactions

- $(n,x)$
- $(n,2n)$
- $(n,3n)$
- $(n,n^*)_a$
- $(n,2n)_a$
ENDF/B-VII.1 PB-208
Threshold reactions

Energy (MeV)

Cross section (barns)

(n,n*c)
(n,p)
(n,d)
(n,t)
(n,xp)
ENDF/B-VII.1 PB-208
Threshold reactions

Energy (MeV) vs Cross section (barns)

- (n,p^c)
- (n,d*0)
- (n,d*1)
- (n,d*2)
- (n,d*3)
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- (n,d*9)
- (n,d*10)
- (n,d*11)
- (n,d*12)
- (n,d*13)
ENDF/B-VII.1 PB-208
Threshold reactions

Cross section (barns) vs. Energy (MeV)

- *(n,t*16)*
- *(n,t*17)*
- *(n,t*18)*
- *(n,t*19)*
- *(n,t*20)*
Threshold reactions

ENDF/B-VII.1 PB-208

Energy (MeV) vs. Cross section (barns)

- (n,t^21)
- (n,t^22)
- (n,t^23)
- (n,t^c)
- (n,a^c)

Energy (MeV): 0 to 30
Cross section (barns): 0 to 800 * 10^-6
ENDF/B-VII.1 PB-208
angular distribution for elastic
ENDF/B-VII.1 PB-208
angular distribution for elastic
ENDF/B-VII.1 PB-208
angular distribution for \((n,n^*1)\)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*2)
ENDF/B-VII.1 PB-208
angular distribution for \((n, n^{*3})\)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*4)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*5)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*6)
ENDF/B-VII.1 PB-208
angular distribution for \((n, n^*7)\)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*8)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*9)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*10)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*12)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*13)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*15)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*16)
ENDF/B-VII.1 PB-208
angular distribution for (n,n^*17)
ENDF/B-VII.1 PB-208

angular distribution for (n,n*18)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*19)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*20)
ENDF/B-VII.1 PB-208
angular distribution for (n,n^*21)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*22)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*23)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*24)
ENDF/B-VII.1 PB-208
angular distribution for \((n,n^*25)\)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*26)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*27)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*28)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*29)
ENDF/B-VII.1 PB-208
angular distribution for \((n,n^*30)\)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*31)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*32)
ENDF/B-VII.1 PB-208
angular distribution for (n,n^*33)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*34)
ENDF/B-VII.1 PB-208
angular distribution for \( (n,n^*35) \)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*36)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*37)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*38)
ENDF/B-VII.1 PB-208
angular distribution for (n,n*40)
ENDF/B-VII.1 PB-208
Neutron emission for (n,x)
ENDF/B-VII.1 PB-208
Neutron emission for (n,2n)
ENDF/B-VII.1 PB-208
Neutron emission for (n,3n)
ENDF/B-VII.1 PB-208
Neutron emission for \((n,n^*)a\)
ENDF/B-VII.1 PB-208
Neutron emission for (n,2n)a
ENDF/B-VII.1 PB-208
Neutron emission for (n,n*)p
ENDF/B-VII.1 PB-208
Neutron emission for (n,4n)
ENDF/B-VII.1 PB-208
Neutron emission for (n,2np)
ENDF/B-VII.1 PB-208
Neutron emission for (n,n*c)
ENDF/B-VII.1 PB-208
Photon emission for (n,gma)
ENDF/B-VII.1 PB-208
Photon emission for (n,x)
Photon emission for (n,2n)
ENDF/B-VII.1 PB-208
Photon emission for (n,3n)
ENDF/B-VII.1 PB-208
Photon emission for (n,2n)a
ENDF/B-VII.1 PB-208
Photon emission for \( (n,n^*)p \)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*)d
Photon emission for \((n,n^*)t\)
ENDF/B-VII.1 PB-208
Photon emission for (n,4n)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*1)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^*2)\)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^*3)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*4)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*5)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*6)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*7)
ENDF/B-VII.1 PB-208
Photon emission for (n,n^8)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*9)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*10)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*11)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*12)
ENDF/B-VII.1 PB-208
Photon emission for (n,n^*13)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*14)
ENDF/B-VII.1 PB-208
Photon emission for (n,n^*15)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^{*17})\)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*18)
Photon emission for \( (n,n^{*19}) \)
ENDF/B-VII.1 PB-208
Photon emission for \( (n,n^{*20}) \)
Photon emission for (n,n*21)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n' \geq 22)\)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n'23)\)
Photon emission for \((n, n^{*24})\)
Photon emission for \((n,n^{*25})\)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^{*26})\)
Photon emission for \((n,n^{*}27)\)
ENDF/B-VII.1 PB-208
Photon emission for \( (n, n^{*28}) \)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^{*29})\)
ENDF/B-VII.1 PB-208
Photon emission for \( (n,n^*30) \)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*31)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*32)
ENDF/B-VII.1 PB-208
Photon emission for \( (n,n^*33) \)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*34)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*35)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*36)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*37)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*38)
ENDF/B-VII.1 PB-208
Photon emission for \((n,n^*39)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*40)
ENDF/B-VII.1 PB-208
Photon emission for (n,n*\text{c})
ENDF/B-VII.1 PB-208
Photon emission for (n,p*1)
ENDF/B-VII.1 PB-208
Photon emission for (n,p^2)
ENDF/B-VII.1 PB-208
Photon emission for (n,p*3)
ENDF/B-VII.1 PB-208
Photon emission for (n, p*4)
ENDF/B-VII.1 PB-208
Photon emission for (n,p*5)
Photon emission for (n,p*6)
ENDF/B-VII.1 PB-208
Photon emission for (n,p*7)
ENDF/B-VII.1 PB-208
Photon emission for (n,p*c)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*1)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*2)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*3)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*4)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*5)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*)
ENDF/B-VII.1 PB-208
Photon emission for (n, d*7)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*8)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*9)
ENDF/B-VII.1 PB-208
Photon emission for \((n,d^*10)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*12)
Photon emission for \((n,d^\ast13)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*14)
Photon emission for \((n,d^*15)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*16)
ENDF/B-VII.1 PB-208
Photon emission for (n,d*\text{c})
ENDF/B-VII.1 PB-208
Photon emission for (n,t*1)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*2)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*3)
ENDF/B-VII.1 PB-208
Photon emission for \( (n,t^*4) \)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*5)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*6)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*8)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*9)
ENDF/B-VII.1 PB-208
Photon emission for \((n,\gamma)^{10}\)
ENDF/B-VII.1 PB-208
Photon emission for (n, t*11)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*12)
Photon emission for (n,t*13)
Photon emission for \((n,t^{*14})\)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*15)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*16)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*17)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*18)
ENDF/B-VII.1 PB-208
Photon emission for (n,t^{19})
Photon emission for \((n,t*20)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,t*21)
Photon emission for \((n,t^*22)\)
ENDF/B-VII.1 PB-208
Photon emission for (n,t^*c)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*1)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*2)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*3)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*4)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*5)
ENDF/B-VII.1 PB-208
Photon emission for (n,a*6)
Photon emission for (n,a*7)

$E_{\gamma}(\text{MeV})$ vs. $E_n(\text{MeV})$
ENDF/B-VII.1 PB-208
Photon emission for (n,a*c)
ENDF/B-VII.1 PB-208
thermal capture photon spectrum

Gamma Energy (MeV) vs. Gamma Prod (barns/MeV) graph.
ENDF/B-VII.1 PB-208
14 MeV photon spectrum

Gamma Energy (MeV) vs. Gamma Prod (barns/MeV)
Particle heating contributions

- Protons
- Deuterons
- Tritons
- Alphas

Energy (MeV) vs. MeV/collision
ENDF/B-VII.1 PB-208
Recoil Heating

Energy (MeV)

Heating (MeV/reaction)

0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
120
140
160

recoil heating
ENDF/B-VII.1 PB-208
Particle production cross sections

Cross section (barns) vs. Energy (MeV)

- protons
- deuterons
- tritons
- alphas
ENDF/B-VII.1 PB-208
protons from (n,x)
ENDF/B-VII.1 PB-208
protons from \((n,n^*)p\)
ENDF/B-VII.1 PB-208
angular distribution for (n,p*0) proton
ENDF/B-VII.1 PB-208
angular distribution for (n,p*1) proton
ENDF/B-VII.1 PB-208
angular distribution for (n,p*2) proton
ENDF/B-VII.1 PB-208
angular distribution for (n,p*3) proton
ENDF/B-VII.1 PB-208
angular distribution for (n,p*5) proton

Energy (MeV)

Prob/Cos

Cosine

0 0.5 1.0

-1.0 -0.5 0.0
ENDF/B-VII.1 PB-208
angular distribution for (n,p*6) proton
ENDF/B-VII.1 PB-208
angular distribution for (n,p^*7) proton
ENDF/B-VII.1 PB-208
protons from (n,p*c)
ENDF/B-VII.1 PB-208
deuterons from (n,x)
ENDF/B-VII.1 PB-208 deuterons from \((n,n^*)d\)
ENDF/B-VII.1 PB-208
angular distribution for (n,d*0) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*1) deuteron
ENDF/B-VII.1 PB-208
angular distribution for \((n,d^*2)\) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*3) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*4) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*5) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*6) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*7) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*8) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*9) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*10) deuteron
ENDF/B-VII.1 PB-208 angular distribution for (n,d*11) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*12) deuteron
ENDF/B-VII.1 PB-208
angular distribution for \((n,d^*13)\) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*14) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*15) deuteron
ENDF/B-VII.1 PB-208
angular distribution for (n,d*16) deuteron
ENDF/B-VII.1 PB-208
deuterons from (n,d*c)
ENDF/B-VII.1 PB-208
tritons from (n,x)
ENDF/B-VII.1 PB-208
tritons from \( (n,n^*)t \)

![Graph showing tritons from \( (n,n^*)t \)]
ENDF/B-VII.1 PB-208
angular distribution for (n,t*0) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*1) triton
ENDF/B-VII.1 PB-208
angular distribution for $\text{(n,t}^*\text{2)}$ triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*3) triton

Prob/Cos

10^-1

10^0

10^1

Cosine

-1.0 -0.5 0.0 0.5 1.0

Energy (MeV)

0 20 40 60 80 100 120 140 160
ENDF/B-VII.1 PB-208
angular distribution for (n,t*4) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*5) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*6) triton

Energy (MeV)

Cosine

Prob/Cos

10^{-1}

10^{0}

10^{1}

10^{2}

10^{3}

10^{4}

10^{5}

10^{6}
ENDF/B-VII.1 PB-208
angular distribution for (n,t*7) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*8) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t^9) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t^10) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*11) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*12) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*13) triton
ENDF/B-VII.1 PB-208
angular distribution for \((n,t^*14)\) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*15) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*16) triton
ENDF/B-VII.1 PB-208
angular distribution for (n, t*17) triton
 ENDF/B-VII.1 PB-208
angulur distribution for (n,t*18) triton
ENDF/B-VII.1 PB-208
angular distribution for \( (n,t^{*19}) \) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*20) triton
ENDF/B-VII.1 PB-208
angular distribution for (n, t*21) triton
ENDF/B-VII.1 PB-208
angular distribution for (n,t*23) triton
ENDF/B-VII.1 PB-208
tritons from (n,t*c)
ENDF/B-VII.1 PB-208
alphas from (n,x)
ENDF/B-VII.1 PB-208
alphas from (n,n*)a
ENDF/B-VII.1 PB-208
alphas from (n,2n)a
ENDF/B-VII.1 PB-208
angular distribution for (n,a*0) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a*1) alpha
ENDF/B-VII.1 PB-208
angular distribution for \( (n,a^*2) \) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a*3) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a*4) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a^5) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a*6) alpha
ENDF/B-VII.1 PB-208
angular distribution for (n,a*7) alpha
ENDF/B-VII.1 PB-208
alphas from (n,a*c)