

4-Be-9

Ra-226-Be or Am-241-Be is useful for a moisture gauge. Be-9(g,n)Be-8 or Be-9(a,n)C-12 is neutron source.

- Atomic Mass: 9.0121821 ± 0.0000004 amu
- Excess Mass: 11347.584 ± 0.396 keV
- Binding Energy: 58164.907 ± 0.396 keV
- Beta Decay Energy: $B^- - 1068.116 \pm 0.899$ keV

"The 1995 update to the atomic mass evaluation" by G.Audi and A.H.Wapsta, Nuclear Physics A595 vol. 4 p.409-480, December 25, 1995.

- Atomic Percent Abundance: 100%
- Spin: 3/2-
- Stable Isotope
- Possible parent nuclides:
Beta from Li-9

R.R.Kinsey, et al., *The NUDAT/PCNUDAT Program for Nuclear Data*, paper submitted to the 9th International Symposium of Capture-Gamma-ray Spectroscopy and Related Topics, Budapest, Hungary, October 1996. Data extracted from NUDAT database (Dec. 18, 1997).

Cross section graphs:

Be9(N,G) * EFF-2.4

Most of cross section data are adopted from NGATLAS - Atlas of Neutron Capture Cross Sections (Courtesy of IAEA NDS)

Total Cross Section

- at 0.0253 eV = 6.159 b
- Maxwell avg. at 0.0253 eV = 6.158 b
- at 14 MeV = 1.494 b
- Fission spectrum avg. = 2.834 b
- g-factor = 1.1282

Elastic Scattering Cross Section

- at 0.0253 eV = 6.151 b
- Maxwell avg. at 0.0253 eV = 6.151 b
- at 14 MeV = 959.3 mb
- Fission spectrum avg. = 2.673 b
- g-factor = 1.1284

Total Inelastic Cross Section

- at 14 MeV = 22.90 mb
- Fission spectrum avg. = 38.95 micro barn

(n,2n) Cross Section

- at 14 MeV = 269.1 mb
- Fission spectrum avg. = 53.83 mb

(n,2n) alpha-p Cross Section

- at 14 MeV = 17.49 mb
- Fission spectrum avg. = 4.938 mb

Radiative Capture Cross Section

- at 0.0253 eV = 7.600 mb
- Maxwell avg. at 0.0253 eV = 6.735 mb
- Resonance integral = 3.419 mb
- at 14 MeV = 0.3231 micro barn
- Fission spectrum avg. = 1.156 micro barn
- g-factor = 1.0000

(n,p) Cross Section

- Fission spectrum avg. = 0.02025 micro barn

(n,d) Cross Section

- Fission spectrum avg. = 0.03268 micro barn

(n,t) Cross Section

${}^9_4\text{Be}$ (alpha in, Neutron out)

Beryllium - ${}^9_4\text{Be}$

${}^9_4\text{Be} = 100\%$ naturally occurring

artificial isotopes of Be run:

$\text{Be}^5, {}^6, {}^7, {}^8, \text{---}, {}^{10}, {}^{11}, {}^{12}, {}^{13}, {}^{14}$.

${}^9_4\text{Be}$ (alpha in, neutron out?)

- at 14 MeV = 18.36 mb
- Fission spectrum avg. = 2.751 micro barn

(n,alpha) Cross Section

- at 14 MeV = 9.419 mb
- Fission spectrum avg. = 35.65 mb

Atomic Mass = 9.0121821 ± 0.0000004 amu

XS averaged from JENDL3.2, Courtesy of T. Nakagawa at JAERI



Beta Decay Energy: Q^- = 1086.116 ± 0.009 keV

Element Be



[Back to the Table of the Nuclides main chart](#)

• [Stable Isotope](#)

• Possible parent nuclides:
Beta from Li-9

R. R. Kliney, et al. The NUDAT/NUDAT Program for Nuclear Data, paper submitted to the 9th International Symposium of Capture-Reaction, Spectroscopy and Related Topics, Budapest, Hungary, October 1996. Data extracted from NUDAT database (Dec 18, 1997).

Cross section graphs:

Be9(N,G) * EFF-2.4

Most of cross section data are adopted from NGATLAS - Atlas of Neutron Capture Cross Sections (Courtesy of IAEA NDS)

Total Cross Section

- at 0.0253 eV = 6.155 b
- Maxwell avg. at 0.0253 eV = 6.156 b
- at 14 MeV = 1.484 b
- Fission spectrum avg. = 2.834 b
- g-factor = 1.1282

Elastic Scattering Cross Section

- at 0.0253 eV = 6.151 b
- Maxwell avg. at 0.0253 eV = 6.151 b
- at 14 MeV = 959.3 mb
- Fission spectrum avg. = 2.673 b
- g-factor = 1.1284

Total Inelastic Cross Section

- at 14 MeV = 22.90 mb
- Fission spectrum avg. = 36.95 micro barn

(n,2n) Cross Section

- at 14 MeV = 269.1 mb
- Fission spectrum avg. = 53.83 mb

(n,2n) alpha-p Cross Section

- at 14 MeV = 17.49 mb
- Fission spectrum avg. = 4.938 mb

Radiative Capture Cross Section

- at 0.0253 eV = 7.600 mb
- Maxwell avg. at 0.0253 eV = 7.600 mb
- Resonance integral = 3.419 mb
- at 14 MeV = 0.3251 micro barn
- Fission spectrum avg. = 0.03255 micro barn
- g-factor = 1.0000

(n,p) Cross Section

- Fission spectrum avg. = 0.03255 micro barn

(n,d) Cross Section

- Fission spectrum avg. = 0.03255 micro barn

(n,t) Cross Section

Beryllium - ${}^9_4\text{Be}$
 ${}^9_4\text{Be}$ = 100% naturally occurring
artificial isotopes of Be run:
 $\text{Be}^3, ^6, ^7, ^8, \dots, ^{10}, ^{11}, ^{12}, ^{13}, ^{14}$

- 1 on the third pass one suspected Atlantic salmon parr was captured. On August 19, 1998, 3 km of
- 2 the river was snorkeled from 10 km on the river to 7 km on the river. Seven suspected Atlantic
- 3 salmon were observed (3 fry and 4 parr) at 8.5 km on the river. On August 20, 1998, the same
- 4 reach was snorkeled and four suspected Atlantic salmon (1 fry and 3 parr) were sighted. Three

X2 averaged from JENDL-2, Courtesy of T. Nakagawa at JAERI

• at 14 MeV = 9.419 mb
• Fusion spectrum avg = 35.65 mb

(a) alpha) Cross Section

• at 14 MeV = 18.38 mb
• Fusion spectrum avg = 2.751 mb/cm