

95-Am-241

This nuclide is useful for a level gauge, a X-ray fluorescence analysis. Am241-Be9 is useful for a moisture gauge. = $\alpha n'$

- Atomic Mass: 241.0568229 +- 0.0000021 amu
- Excess Mass: 52930.224 +- 1.957 keV
- Binding Energy: 1817935.000 +- 1.984 keV
- Beta Decay Energy: B- -767.357 +- 1.173 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.

- Spin: 5/2-
- Half life: 432.2 Y
- Mode of decay: Alpha to Np-237
 - Decay energy: 5.638 MeV
- Mode of decay: SF
 - Branch ratio: 4E-10 %

Meta state at 2.200 Mev

- Half life: 1.2 US
- Mode of decay: SF
- Possible parent nuclides:
 - Beta from Pu-241
 - Electron capture from Cm-241
 - Alpha from Bk-245

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:

Am241(N,G) * JEF-2.2; RN - - - /SYS

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 = 614.6 b
- Maxwell avg. at 0.0253 eV = 545.4 b
- at 14 MeV = 5.741 b
- Fission spectrum avg. = 7.784 b
- g-factor = 1.0014

Elastic Scattering Cross Section

- at 0.0253 eV = 11.14 b
- Maxwell avg. at 0.0253 eV = 10.73 b
- at 14 MeV = 2.722 b
- Fission spectrum avg. = 4.833 b
- g-factor = 1.0867

Total Inelastic Cross Section

- at 14 MeV = 49.94 mb
- Fission spectrum avg. = 1.340 b

(n,2n) Cross Section

- at 14 MeV = 262.4 mb
- Fission spectrum avg. = 620.4 micro barn

(n,3n) Cross Section

- at 14 MeV = 46.74 mb
- Fission spectrum avg. = 10.02 micro barn

Total Fission Cross Section

- at 0.0253 eV = 3.018 b
- Maxwell avg. at 0.0253 eV = 2.711 b
- Resonance integral = 13.86 b
- at 14 MeV = 2.660 b
- Fission spectrum avg. = 1.378 b
- g-factor = 1.0136

Radiative Capture Cross Section

95 Am - artificial element.
reactor produces

$^{95}\text{Am}^{241}$ = strong alpha source found
in smoke detectors.

95 Am isotopes from Am^{231} through Am^{249}

PAGES (INCLUDING COVER): 3

FROM: VITAL H. MURRAY

FAV: 502-555-2538

MEMBER

TO: Tom Murray, Bureau of the FBI, 624

FAX IN BRIEF

FAX IN BRIEF

TO: Tom Putnam, Putnam Films Ltd/ PSA

member

FAX: 206 622-9278

FROM: Arthur H. Whiteley

PAGES (INCLUDING COVER): 3

Friday, April 16, 1999

This letter sent to DOE and the cc. people listed. The senators/reps. have received a letter from us asking them to write in support to Fitzsimmons.



- at 0.0253 eV = 814.8 d
- Maxwell avg. at 0.0253 eV = 545.4 d
- at 14 MeV = 8.741 d
- Fission spectrum avg. = 7.784 d
- g-factor = 1.0014

Total Cross Section

Most of cross section data are adopted from HGTALS - Atlas of Neutron Capture Cross Sections (Courtesy of IAEA ND2)

Am241(N.G.) * JEF-2.2; RN - --(S)

Gross section graphs:

Topic: Budapest, Hungary, October 1998 Data extracted from HGTALS database (Oct 18, 1997)

R.A. Kinney, et al., The NUDAT/NUDAT Program for Nuclear Data, paper submitted to the 5th International Symposium on Capture-Gamma, Astrophysics and Related

- Possible parent nuclides:
- Data from Pu-241
- Electron capture from Cm-241
- Alpha from Bk-245

• Mode of decay: SF

• Half life: 1.2 US

• Main state at 5.200 MeV

• Mode of decay: SF

• Decay energy: 2.638 MeV

• Mode of decay: Alpha to Hg-207

• Half life: 432.5 Y

• Spin: 5/2-

- Beta Decay Energy: B- 767.357 +/- 1.173 keV
- Binding Energy: 1817992.000 +/- 1.984 keV
- Excess Mass: 82930.224 +/- 1.987 keV
- Atomic Mass: 241.0568229 +/- 0.0000021 amu

*The 1998 update to the atomic mass evaluation, by G.Audi and A.H. Wapstra, Nuclear Physics A592 vol. 4 p.409-460, December 28, 1992.

This nuclide is useful for a level gauge, a X-ray fluorescence analysis. Am241-Sg2 is useful for a moisture gauge.

- 85-Am
- at 0.0253 eV = 600.4 b
 - Maxwell avg. at 0.0253 eV = 532.0 b
 - Resonance integral = 1305 b
 - at 14 MeV = 0.2299 micro barn
 - Fission spectrum avg. = 229.6 mb
 - g-factor = 0.9998

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



• Beta Decay Energy: $B^- = 767.557 \pm 1.173$ keV

Element Am



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- Mode of decay: Alpha No-237
 - Decay energy: 5.638 MeV
- Mode of decay: SF
 - Branch ratio: 4E-10 %

Meta state at 2.200 MeV

• Half life: 1.2 US

• Mode of decay: SF

• Possible parent nuclides:

Beta from Pu-241

Electron capture from Cm-241

Alpha from Bk-245

P.R.Kneay, et al. The NUDAT/PCN/ENDAT Program for Nuclear Data, paper submitted to the 18th International Symposium on Capture-Gamma-ray Spectroscopy and Related Topics, Budapest, Hungary, October 1996. Data extracted from NUDAT database (Dec. 18, 1997).

Cross section graphs:

Am241(N,G) * JEF-2.2 RN --BY5

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

Total Cross Section

- at 0.0253 eV = 614.6 b
- Maxwell avg. at 0.0253 eV = 545.4 b
- at 14 MeV = 3.761 b
- Fission spectrum avg. = 7.784 b
- g-factor = 1.0274

Elastic Scattering Cross Section

- at 0.0253 eV = 10.73 b
- Maxwell avg. at 0.0253 eV = 10.73 b
- at 14 MeV = 2.722 b
- Fission spectrum avg. = 1.340 b
- g-factor = 1.0136

Total Inelastic Cross Section

- at 14 MeV = 40.94 mb
- Fission spectrum avg. = 1.340 b

(n,2n) Cross Section

- at 14 MeV = 40.94 mb
- Fission spectrum avg. = 820.4 micro barn

(n,3n) Cross Section

- at 14 MeV = 40.94 mb
- Fission spectrum avg. = 1.378 b

Total Fission Cross Section

- at 0.0253 eV = 5.015 b
- Maxwell avg. at 0.0253 eV = 2.711 b
- Resonance integral = 13.05 b
- at 14 MeV = 2.080 b
- Fission spectrum avg. = 1.378 b
- g-factor = 1.0136

Radiative Capture Cross Section

95 Am - artificial element.
reactor produced

Am-241 is found
in smoke detectors.

95 Am isotopes from Am²³¹ through Am²⁴⁹

FAX IN BRIEF

TO: Tom Purnum, Purnum Farms Ltd. PSA

member

FAX 206 622-6276

FROM: Arthur H. Whiteley

independent scientists with specific knowledge of the impacts of escaped farmed Atlantic salmon, their distribution throughout Puget Sound river systems, and the risks posed by their presence to our endangered native salmon stocks. Our organizations would much prefer to provide constructive advice for the development of these permits than to proceed with lawsuits. We trust that the Department of Ecology will welcome our constructive input.

Awaiting your response, I am

Sincerely yours,

Arthur H. Whiteley, Professor Emeritus
University of Washington
For the Marine Environmental Consortium

Cc: Gov. Gary Locke, Sen. Ken Jacobson, Sen. Mary Margaret Haugen, Sen. Adam Kline, Sen. Harriet Spanel, Rep. Debbie Regala, Mr. Curt Smith

Back to the Table of the Fisheries main chart

Element AM

X2 averaged from 1000.0 s. Courtesy of T. Purnum at JACRI

- g-factor = 0.9998
- Fission spectrum avg = 259.8 mp
- at 14 MeV = 0.2599 micro barn
- Resonance integral = 1302 b
- Maxwell avg. at 0.0253 eV = 235.0 b
- at 0.0253 eV = 600.4 b