



AMERICIUM-246M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Am-246m
Atomic number (Z): 95
Mass number (A): 246
Neutron number (N): 151

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 25.0 [m]
Decay constant: 4.6210×10^{-4} [1/s]
Daughters: Cm-246 (100.0%)
Radioactive daughters: Cm-246

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.50326 [MeV]
Mean photon energy: 0.97992 [MeV]
Air kerma rate constant, Γ_{10} : 3.996×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 3.996×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 8.063×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

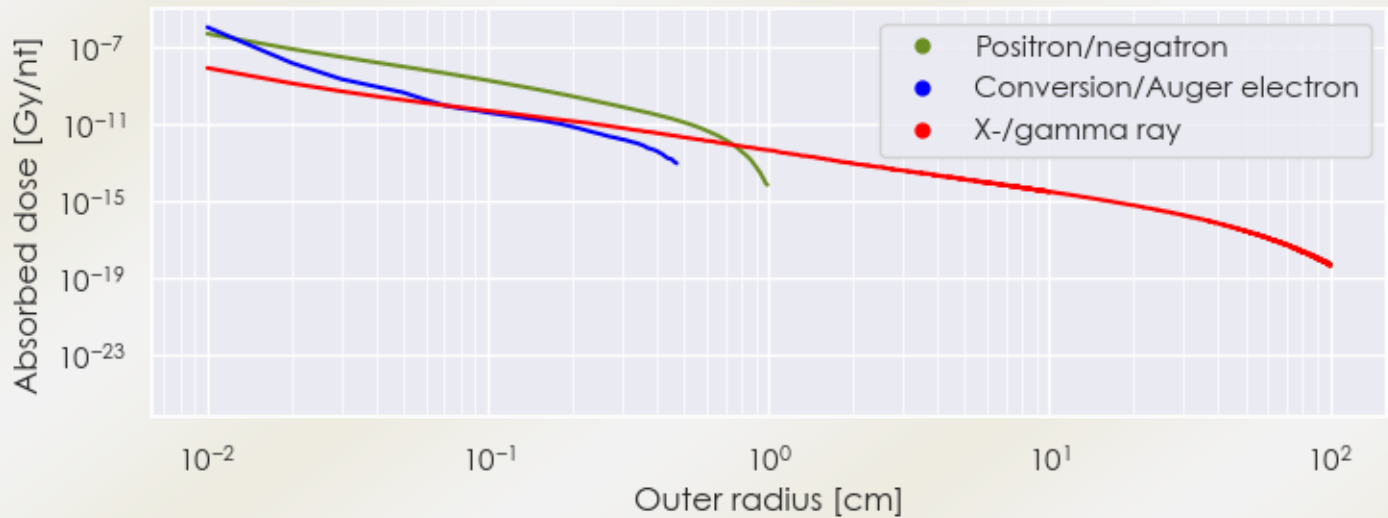
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 8.063×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.570×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

Dose point kernel source: **Graves, et al. Medical Physics. 2019 Nov.; 46(11):5284-5293.**

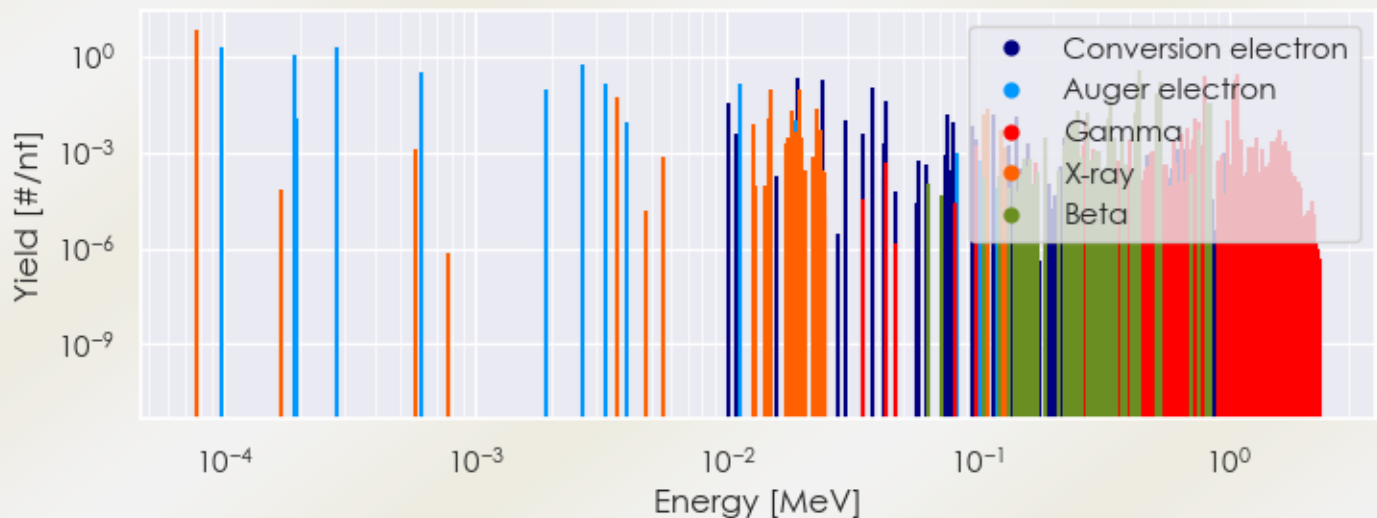
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Am-246m DPK.csv

SUMMARY SPECTRA (PLOT)

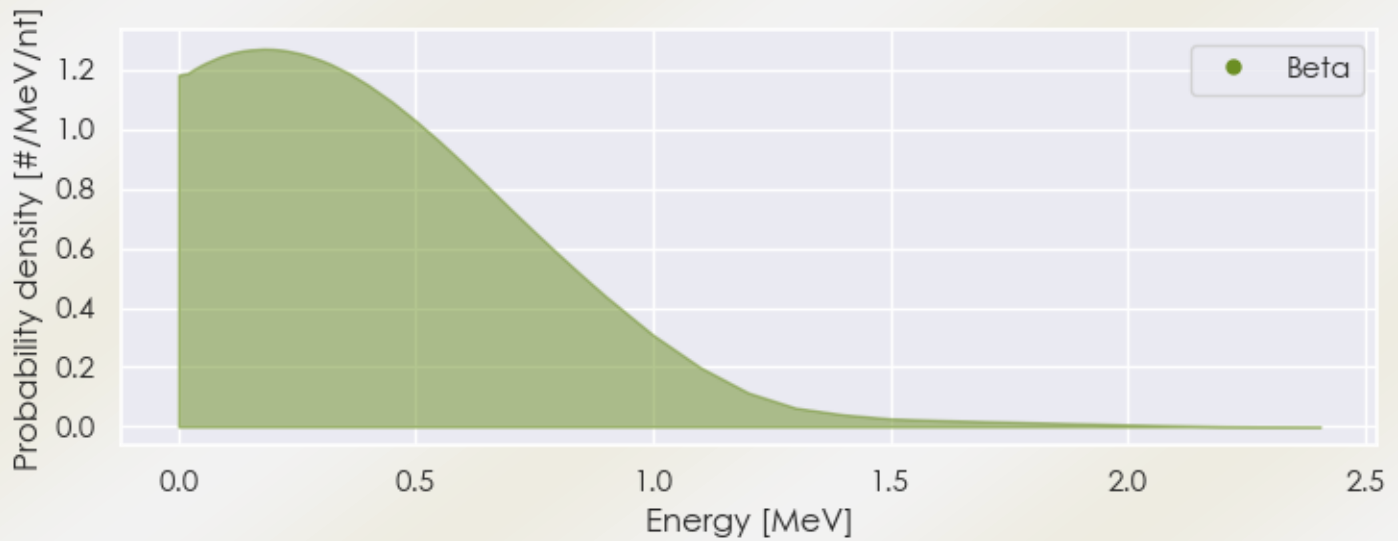
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Am-246m Summary Spectrum.csv

BETA SPECTRA (PLOT)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated beta spectra file here: www.mirdsoft.org/products/MIRDspecs/Am-246m Beta Spectrum.csv

TABULATED DATA

SUMMARY SPECTRA (TABLE)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**

Note: Radiations with yield < 0.01 are excluded from the table, but are available in the linked *.csv data.

Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Am-246m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
7.76329e-05	6.896e+00	X-ray
3.65867e-03	4.849e-02	X-ray
1.47568e-02	1.094e-02	X-ray
1.49784e-02	9.602e-02	X-ray
1.81285e-02	2.071e-02	X-ray
1.95388e-02	9.498e-02	X-ray
2.28564e-02	2.231e-02	X-ray
1.05084e-01	1.447e-02	X-ray
1.09866e-01	2.265e-02	X-ray

2.70070e-01	1.022e-02	Gamma
7.34410e-01	1.168e-02	Gamma
7.98800e-01	2.480e-01	Gamma
8.33600e-01	1.786e-02	Gamma
1.03600e+00	1.270e-01	Gamma
1.06204e+00	1.714e-01	Gamma
1.07886e+00	2.778e-01	Gamma
1.08515e+00	1.528e-02	Gamma
2.51223e-01	1.929e-02	Beta
2.75191e-01	1.779e-02	Beta
3.32689e-01	1.199e-02	Beta
3.39193e-01	5.497e-02	Beta
4.21317e-01	1.799e-02	Beta
4.30054e-01	1.399e-01	Beta
4.39892e-01	3.728e-01	Beta
5.17277e-01	6.897e-02	Beta
5.30705e-01	1.609e-01	Beta
8.18389e-01	3.498e-02	Beta
8.46572e-01	3.498e-02	Beta
9.70845e-05	1.954e+00	Auger electron
1.91049e-04	1.040e+00	Auger electron
1.93064e-04	1.073e-02	Auger electron
2.79734e-04	1.810e+00	Auger electron
6.06112e-04	3.028e-01	Auger electron
1.91726e-03	8.615e-02	Auger electron
2.67565e-03	5.835e-01	Auger electron
3.27003e-03	1.292e-01	Auger electron
1.02060e-02	3.577e-02	Conversion electron
1.12766e-02	1.410e-01	Auger electron
1.50513e-02	7.459e-02	Auger electron
1.91240e-02	2.063e-01	Conversion electron
2.39060e-02	1.756e-01	Conversion electron
3.80710e-02	1.085e-01	Conversion electron
4.29000e-02	4.049e-02	Conversion electron
7.54240e-02	1.399e-02	Conversion electron
1.15170e-01	1.498e-02	Conversion electron
1.41210e-01	1.372e-02	Conversion electron

USEFUL LINKS

Isotope decay characteristics are periodically updated as better measurements can be made - changes that may not be reflected on this page. Please see useful links:

National Nuclear Data Center (NNDC): <https://www.nndc.bnl.gov/nudat3/mird/>

International Atomic Energy Agency (IAEA) Livechart: <https://www-nds.iaea.org/relnsd/vcharthtml/VChartHTML.html>

REFERENCE LINKS

ICRP Report 107: <https://www.icrp.org/publication.asp?id=ICRP%20Publication%20107>

Graves et al. Dose Point Kernels: <https://doi.org/10.1002/mp.13789>

MIRD Decay Schemes 2nd Edition: https://sites.snmmi.org/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6