



Am-236 (2.4h) CA	Am-237 (2.9h) ECB+	Am-238 (27d) A SF	Am-239 (32.8d) ECA	Am-240 (162.8d) A	Am-241 (29.1y) A EC	Am-242 (18.10y) A SF	Am-243 (8.5E+3y) A SF	Am-244 (4.76E+3y) A SF
Am-237 (73.0m) CA	Am-238 (98m) ECB+A	Am-239 (11.9h) ECA	Am-240 (50.5h) EC	Am-241 (432.2y) A	Am-242 (16.02h) B-β	Am-243 (7.37E+3y) A	Am-244 (10.1h) B-	Am-245 (2.05h) B-
Pu-236 (2.858y) SF	Pu-237 (45.2d) ECA	Pu-238 (87.7y) A SF	Pu-239 (2.411E+4y) A	Pu-240 (6.88y) A SF	Pu-241 (14.35h) B-A	Pu-242 (3.75E+5y) A SF	Pu-243 (4.956h) B-	Pu-244 (8.00E+7y) A SF

AMERICIUM-241

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Am-241
Atomic number (Z): 95
Mass number (A): 241
Neutron number (N): 146

RADIOACTIVE DECAY

Decay modes: α
Half-life: 432.2 [y]
Decay constant: 5.0821e-11 [1/s]
Daughters: Np-237 (100.0%)
Radioactive daughters: Np-237

DOSIMETRIC CONSTANTS

Mean alpha energy: 5.5712 [MeV]
Mean electron energy: 0.0373 [MeV]
Mean photon energy: 0.02933 [MeV]
Air kerma rate constant, Γ_{10} : 9.803e-18 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 9.803e-18 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 8.986e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 8.926e-13 [Gy·kg/Bq·s]

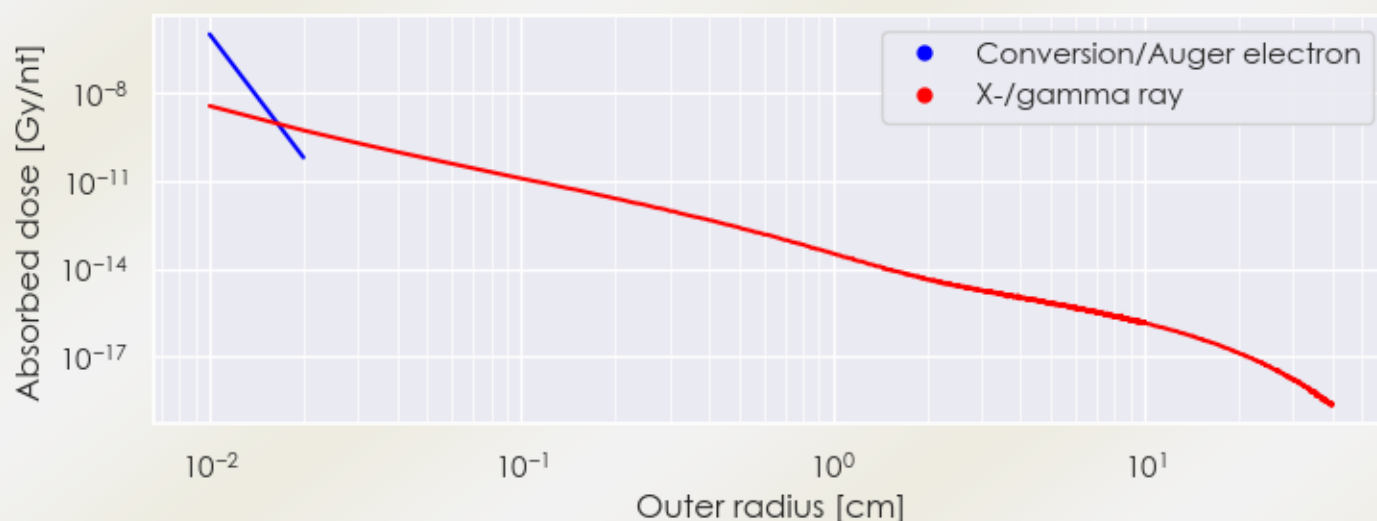
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-\beta+,e-}$: 5.976e-15 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.699e-15 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

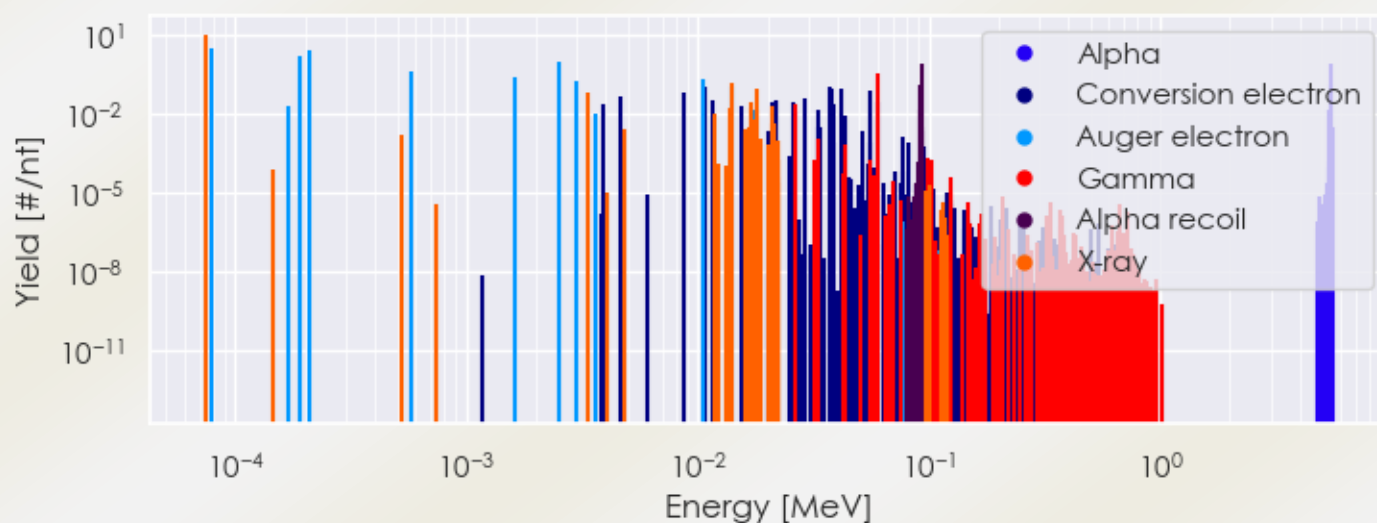
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Am-241_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-241_Summary_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-241 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Am-241%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#]/nt] if > 0.01	Radiation type
7.44386e-05	1.115e+01	X-ray
3.34952e-03	7.016e-02	X-ray
1.19138e-02	1.026e-02	X-ray
1.37668e-02	1.651e-02	X-ray
1.39579e-02	1.450e-01	X-ray
1.68587e-02	3.064e-02	X-ray
1.70745e-02	1.625e-02	X-ray
1.78428e-02	8.828e-02	X-ray
1.80184e-02	1.375e-02	X-ray
2.08890e-02	2.018e-02	X-ray
2.63448e-02	2.400e-02	Gamma
5.95412e-02	3.590e-01	Gamma
7.89857e-05	3.264e+00	Auger electron
1.70006e-04	1.941e-02	Auger electron
1.90572e-04	1.699e+00	Auger electron
2.09123e-04	2.933e+00	Auger electron
5.73102e-04	4.626e-01	Auger electron
1.61346e-03	2.514e-01	Auger electron
2.49042e-03	9.591e-01	Auger electron
2.99076e-03	1.877e-01	Auger electron
3.62968e-03	1.118e-02	Auger electron
3.90480e-03	2.569e-02	Conversion electron
4.64280e-03	5.033e-02	Conversion electron
8.71880e-03	6.597e-02	Conversion electron
1.04706e-02	2.276e-01	Auger electron
1.07560e-02	1.176e-01	Conversion electron
1.14940e-02	3.556e-02	Conversion electron

1.39131e-02	1.169e-01	Auger electron
1.55700e-02	2.209e-02	Conversion electron
1.73991e-02	1.414e-02	Auger electron
2.09830e-02	2.786e-02	Conversion electron
2.17210e-02	3.480e-02	Conversion electron
2.19232e-02	3.735e-02	Conversion electron
2.57970e-02	2.818e-02	Conversion electron
2.63448e-02	1.266e-02	Conversion electron
2.87744e-02	4.428e-02	Conversion electron
3.31960e-02	1.596e-02	Conversion electron
3.71012e-02	1.100e-01	Conversion electron
3.78392e-02	1.002e-01	Conversion electron
3.90014e-02	2.420e-02	Conversion electron
4.19152e-02	1.015e-01	Conversion electron
5.51196e-02	7.779e-02	Conversion electron
5.95412e-02	2.697e-02	Conversion electron
5.38830e+00	1.604e-02	Alpha
5.44293e+00	1.303e-01	Alpha
5.48562e+00	8.473e-01	Alpha
9.10009e-02	1.604e-02	Alpha recoil
9.19235e-02	1.303e-01	Alpha recoil
9.26446e-02	8.473e-01	Alpha recoil

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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6