

Eu-145 (8.07y) ECB+	Eu-146 (10.2s) ECB+	Eu-147 (5.93d) ECB+	Eu-148 (4.61d) ECB+	Eu-149 (24.1d) ECB+	Eu-150 (54.5d) ECB+A	Eu-151 (93.1d) EC	Eu-152 (36.9y) ECB+	
Sm-142 (72.49m) CB+	Sm-143 (8.75m) ECB+	Sm-144 (STABLE)	Sr-90 (3- EC	Sm-146 (1.03E+8y) A	Sm-147 (1- y) A	Sm-148 (7E+15y) A	Sm-149 (STABLE)	Sm-150 (STABLE)
Pm-141 (20.90m) CB+	Pm-142 (40.5s) ECB+	Pm-143 (265d) EC	Pm-144 (363d) EC	Pm-145 (1.67E+11y) ECB+	Pm-146 (5.53) ECB-	Pm-147 (2.6234y) B-	Pm-148 (5.368d) B-	Pm-149 (53.08h) B-

SAMARIUM-146

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sm-146
Atomic number (Z): 62
Mass number (A): 146
Neutron number (N): 84

RADIOACTIVE DECAY

Decay modes: α
Half-life: 103000000.0 [y]
Decay constant: 2.1325×10^{-16} [1/s]
Daughters: Nd-142 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

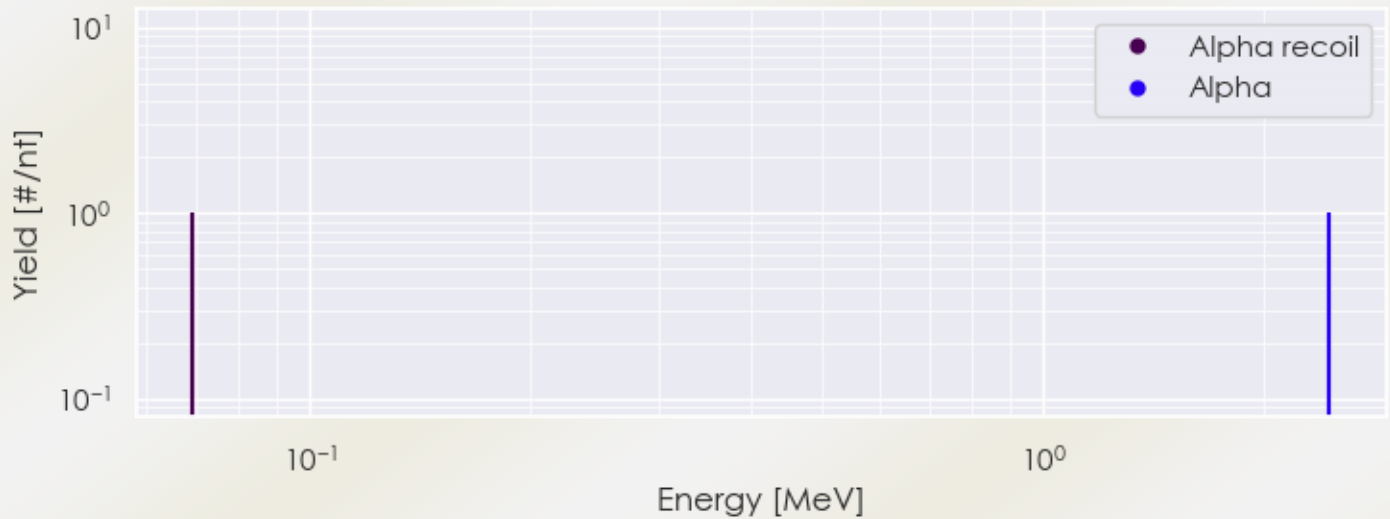
Mean alpha energy: 2.529 [MeV]
Mean electron energy: 0.0 [MeV]
Mean photon energy: 0.0 [MeV]
Air kerma rate constant, Γ_{10} : 0.000×10^0 [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 0.000×10^0 [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 4.052×10^{-13} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 4.052×10^{-13} [Gy $\cdot$ kg/Bq $\cdot$ s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 0.000e+00 [Gy·kg/Bq·s]

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/Sm-146 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Sm-146%20Summary%20Spectrum.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/Sm-146 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Sm-146%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
2.45967e+00	1.000e+00	Alpha
6.93315e-02	1.000e+00	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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6