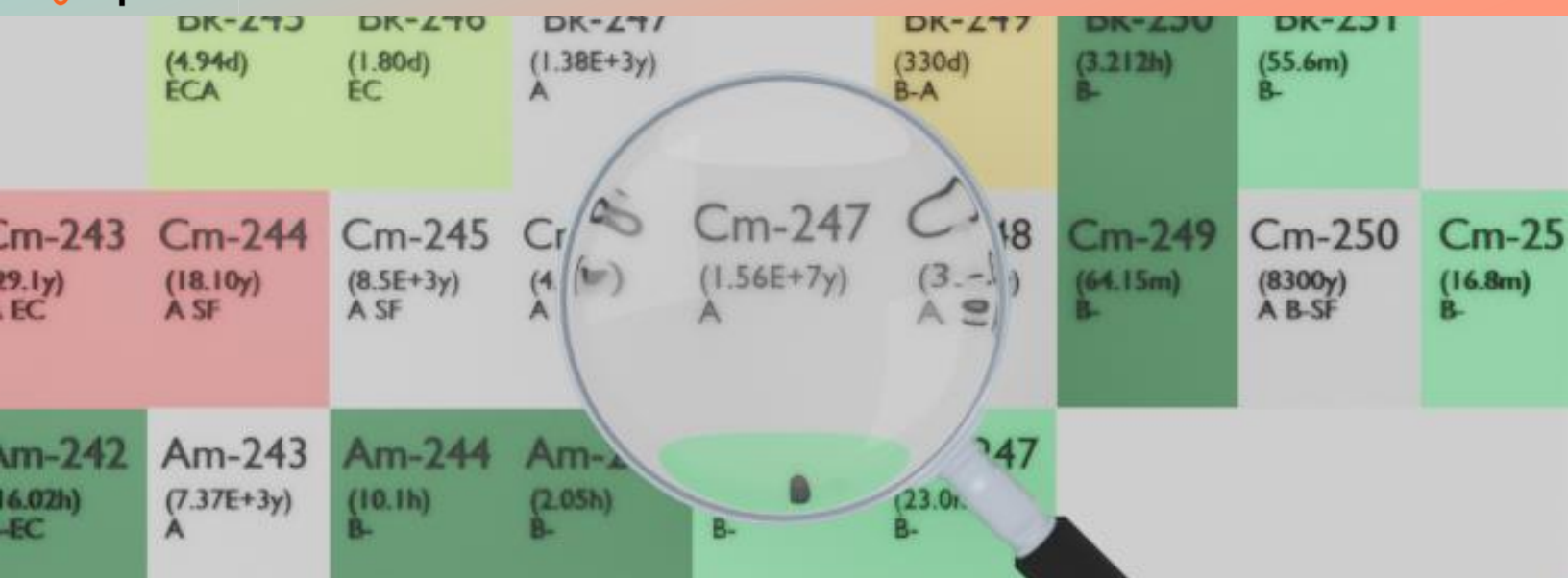




CURIUM-247

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Cm-247
Atomic number (Z): 96
Mass number (A): 247
Neutron number (N): 151

RADIOACTIVE DECAY

Decay modes: α
Half-life: 15600000.0 [y]
Decay constant: $1.4080\text{e-}15$ [1/s]
Daughters: Pu-243 (100.0%)
Radioactive daughters: Pu-243

DOSIMETRIC CONSTANTS

Mean alpha energy: 5.0285 [MeV]
Mean electron energy: 0.01135 [MeV]
Mean photon energy: 0.31378 [MeV]
Air kerma rate constant, Γ_{10} : $1.220\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $1.220\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $8.075\text{e-}13$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $8.057\text{e-}13$ [Gy $\cdot$ kg/Bq $\cdot$ s]

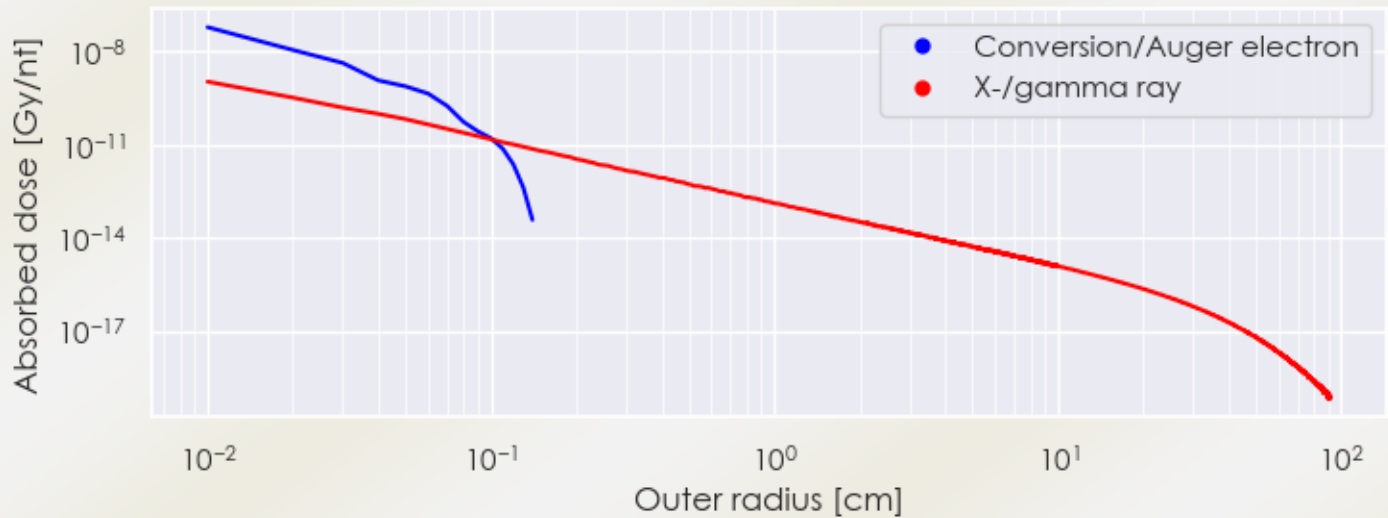
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 1.818×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 5.027×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

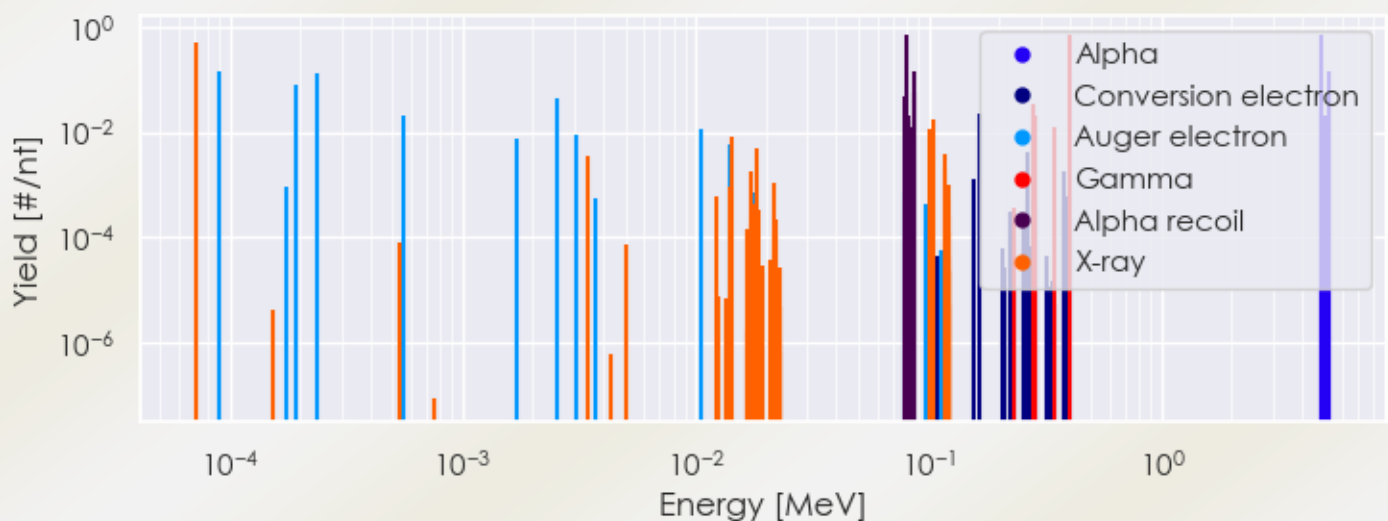
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Cm-247 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/Cm-247 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/Cm-247 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Cm-247%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
7.19884e-05	5.175e-01	X-ray
9.99790e-02	1.104e-02	X-ray
1.04279e-01	1.748e-02	X-ray
2.78000e-01	3.400e-02	Gamma
2.87500e-01	2.000e-02	Gamma
3.46000e-01	1.300e-02	Gamma
4.02400e-01	7.200e-01	Gamma
8.91013e-05	1.417e-01	Auger electron
1.91381e-04	7.983e-02	Auger electron
2.35332e-04	1.359e-01	Auger electron
5.58800e-04	2.054e-02	Auger electron
2.54970e-03	4.479e-02	Auger electron
1.05193e-02	1.149e-02	Auger electron
1.65150e-01	2.329e-02	Conversion electron
2.80050e-01	1.297e-02	Conversion electron
4.81863e+00	4.700e-02	Alpha
4.86939e+00	7.100e-01	Alpha
4.94062e+00	1.600e-02	Alpha
4.98243e+00	2.000e-02	Alpha
5.14289e+00	1.200e-02	Alpha
5.20979e+00	5.700e-02	Alpha
5.26527e+00	1.380e-01	Alpha
7.93706e-02	4.700e-02	Alpha recoil
8.02067e-02	7.100e-01	Alpha recoil
8.13800e-02	1.600e-02	Alpha recoil
8.20687e-02	2.000e-02	Alpha recoil
8.47116e-02	1.200e-02	Alpha recoil

8.58136e-02	5.700e-02	Alpha recoil
8.67275e-02	1.380e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6