

Am-239 (1.9h) A	Am-240 (50.8h) ECA	Am-241 (432.2y) A	Am-243 (7.37E+3y) A	Am-244 (1.0E+3y) B-	Am-245 (2.05h) B-	Am-246 (39m) B-	Am-247 (23.0m) B-	
Pu-238 (87.7y) SF	Pu-239 (2.411E+4y) A	Pu-240 (6564y) A SF	Pu-241 (14.35y) B-A	Pu-242 (3.82E+5y) A SF	Pu-243 (4.95E+3y) B-	Pu-244 (8.00E+7y) A SF	Pu-245 (10.5h) B-	Pu-246 (10.84d) B-

AMERICIUM-243

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Am-243
Atomic number (Z): 95
Mass number (A): 243
Neutron number (N): 148

RADIOACTIVE DECAY

Decay modes: α
Half-life: 7370.0 [y]
Decay constant: $2.9803\text{e-}12$ [1/s]
Daughters: Np-239 (100.0%)
Radioactive daughters: Np-239

DOSIMETRIC CONSTANTS

Mean alpha energy: 5.3583 [MeV]
Mean electron energy: 0.02337 [MeV]
Mean photon energy: 0.05852 [MeV]
Air kerma rate constant, Γ_{10} : $6.452\text{e-}18$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Air kerma coefficient, K_{air} : $6.452\text{e-}18$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $8.622\text{e-}13$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for alphas, Δ_{α} : $8.585\text{e-}13$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

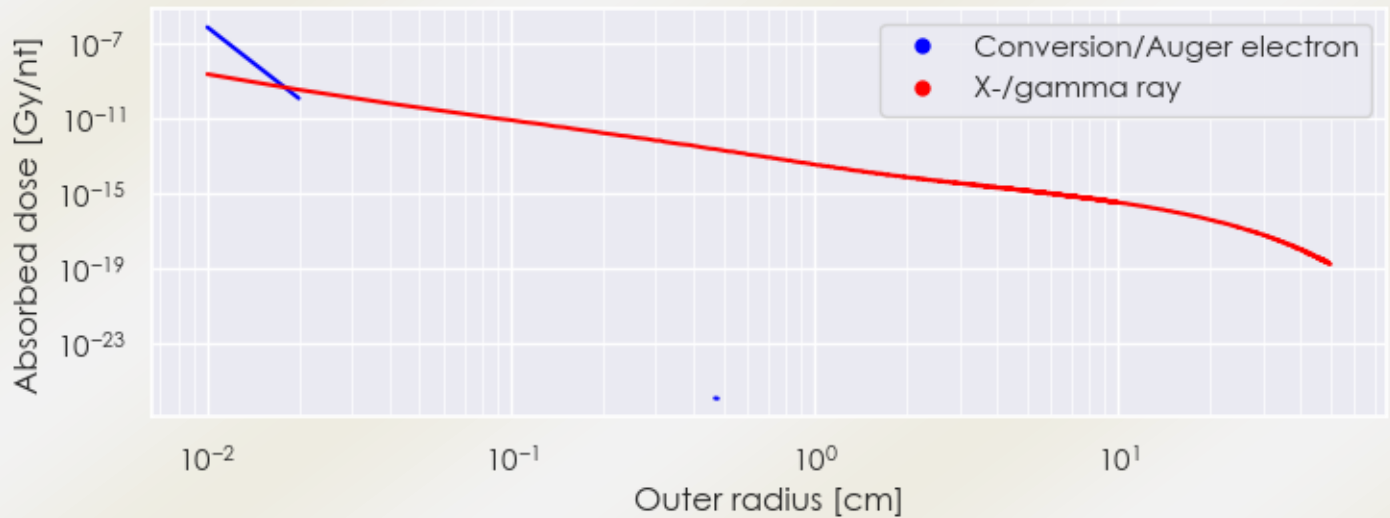
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta+, e-}$: 3.744×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 9.376×10^{-15} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

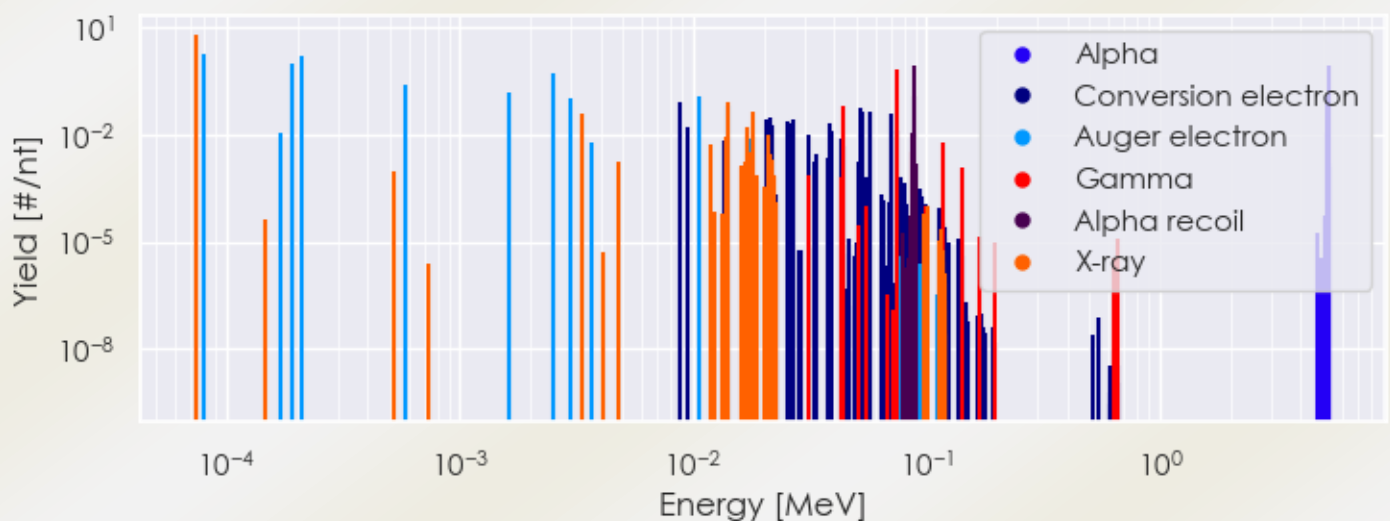
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Am-243 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-243 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-243 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Am-243%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# /nt] if > 0.01	Radiation type
7.44314e-05	6.019e+00	X-ray
3.35033e-03	3.764e-02	X-ray
1.39579e-02	7.516e-02	X-ray
1.68587e-02	1.588e-02	X-ray
1.70745e-02	1.031e-02	X-ray
1.78428e-02	4.374e-02	X-ray
4.35300e-02	5.933e-02	Gamma
7.46600e-02	6.820e-01	Gamma
7.89731e-05	1.763e+00	Auger electron
1.70034e-04	1.048e-02	Auger electron
1.90820e-04	9.154e-01	Auger electron
2.09509e-04	1.582e+00	Auger electron
5.79831e-04	2.555e-01	Auger electron
1.62943e-03	1.521e-01	Auger electron
2.49143e-03	5.145e-01	Auger electron
2.99279e-03	1.007e-01	Auger electron
8.70000e-03	8.121e-02	Conversion electron
9.43800e-03	1.551e-02	Conversion electron
1.05166e-02	1.200e-01	Auger electron
1.39647e-02	6.164e-02	Auger electron
2.06600e-02	2.620e-02	Conversion electron
2.10900e-02	1.454e-02	Conversion electron
2.13980e-02	2.900e-02	Conversion electron
2.18280e-02	1.754e-02	Conversion electron
2.54740e-02	2.326e-02	Conversion electron
2.59040e-02	1.946e-02	Conversion electron
2.67184e-02	2.577e-02	Conversion electron

3.86784e-02	2.082e-02	Conversion electron
3.91084e-02	1.303e-02	Conversion electron
5.22200e-02	5.788e-02	Conversion electron
5.29580e-02	4.430e-02	Conversion electron
5.70340e-02	4.162e-02	Conversion electron
7.02384e-02	3.564e-02	Conversion electron
7.46600e-02	1.243e-02	Conversion electron
5.17877e+00	1.102e-02	Alpha
5.23322e+00	1.102e-01	Alpha
5.27568e+00	8.758e-01	Alpha
8.67303e-02	1.102e-02	Alpha recoil
8.76422e-02	1.102e-01	Alpha recoil
8.83534e-02	8.758e-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