



EINSTEINIUM-250M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Es-250m
Atomic number (Z): 99
Mass number (A): 250
Neutron number (N): 151

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 2.22 [h]
Decay constant: $8.6730\text{e-}05$ [1/s]
Daughters: Cf-250 (100.0%)
Radioactive daughters: Cf-250

DOSIMETRIC CONSTANTS

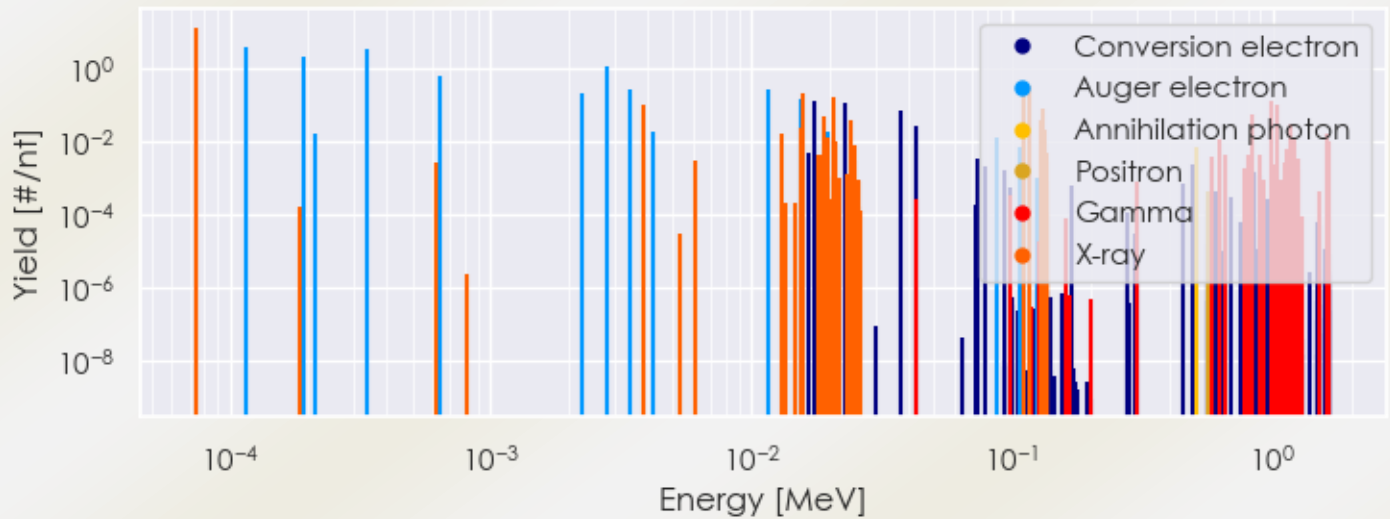
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.03425 [MeV]
Mean photon energy: 0.5549 [MeV]
Air kerma rate constant, Γ_{10} : $2.902\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Air kerma coefficient, K_{air} : $2.915\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $5.487\text{e-}15$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta^+, e^-}$: 5.487e-15 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 8.890e-14 [Gy·kg/Bq·s]

SUMMARY SPECTRA (PLOT)

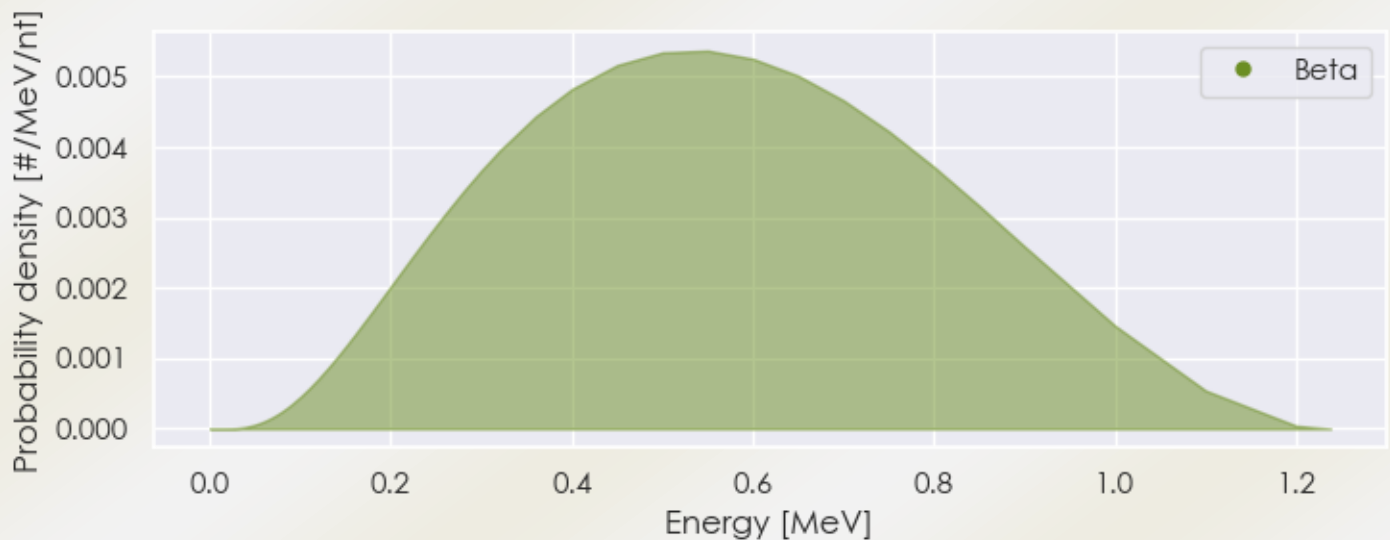
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/Es-250m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Es-250m%20Summary%20Spectrum.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/Es-250m Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Es-250m%20Beta%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/Es-250m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Es-250m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# /nt] if > 0.01	Radiation type
7.45659e-05	1.389e+01	X-ray
3.85923e-03	1.049e-01	X-ray
1.31965e-02	1.715e-02	X-ray
1.54368e-02	2.556e-02	X-ray
1.56809e-02	2.243e-01	X-ray
1.90028e-02	4.900e-02	X-ray
1.96961e-02	1.380e-02	X-ray
1.97994e-02	1.007e-02	X-ray
2.07498e-02	1.603e-01	X-ray
2.09431e-02	1.000e-02	X-ray
2.42552e-02	3.832e-02	X-ray
1.10388e-01	2.215e-01	X-ray
1.15701e-01	3.426e-01	X-ray
1.29279e-01	4.012e-02	X-ray
1.30526e-01	7.927e-02	X-ray
1.34020e-01	1.023e-02	X-ray
1.34357e-01	2.123e-02	X-ray
6.26100e-01	1.176e-02	Gamma
8.28900e-01	5.488e-02	Gamma
9.89100e-01	1.333e-01	Gamma
1.03190e+00	1.058e-01	Gamma
1.16730e+00	2.940e-02	Gamma
1.17550e+00	1.568e-02	Gamma
1.20170e+00	1.225e-02	Gamma
1.61530e+00	1.764e-02	Gamma
1.65810e+00	1.029e-02	Gamma
1.14410e-04	3.757e+00	Auger electron

1.92098e-04	2.248e+00	Auger electron
2.11635e-04	1.730e-02	Auger electron
3.33187e-04	3.682e+00	Auger electron
6.35592e-04	6.432e-01	Auger electron
2.25939e-03	2.063e-01	Auger electron
2.79119e-03	1.177e+00	Auger electron
3.45095e-03	2.830e-01	Auger electron
4.20259e-03	1.835e-02	Auger electron
1.15939e-02	2.876e-01	Auger electron
1.55867e-02	1.545e-01	Auger electron
1.74790e-02	1.387e-01	Conversion electron
1.96242e-02	1.945e-02	Auger electron
2.27920e-02	1.137e-01	Conversion electron
3.76172e-02	7.353e-02	Conversion electron
4.27210e-02	2.712e-02	Conversion electron
8.68283e-02	1.327e-02	Auger 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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6