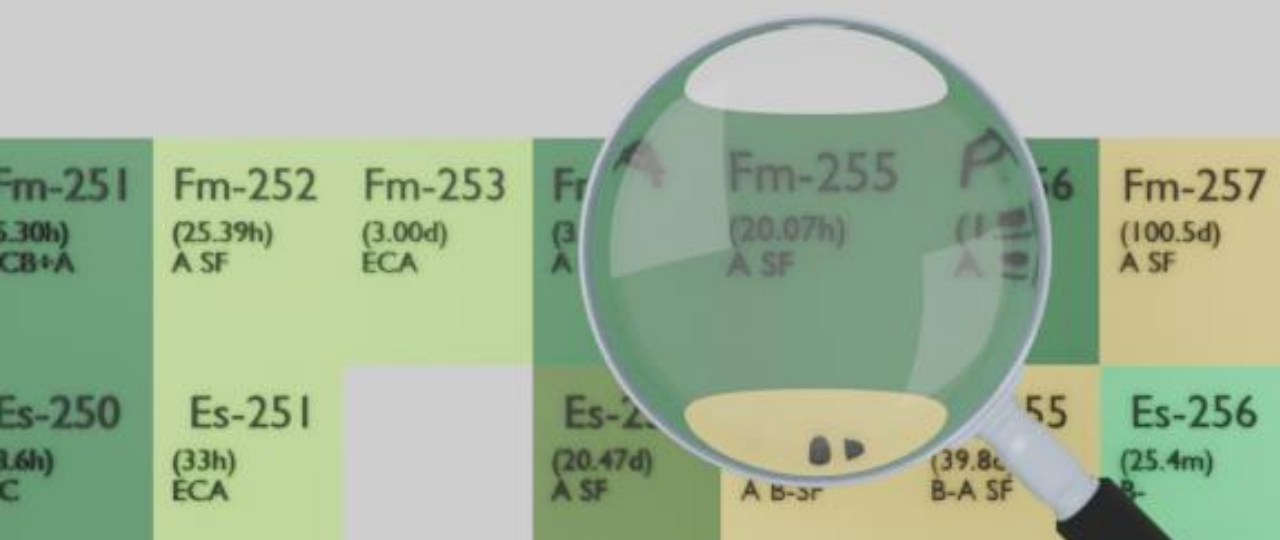




FERMIUM-255

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Fm-255
Atomic number (Z): 100
Mass number (A): 255
Neutron number (N): 155

RADIOACTIVE DECAY

Decay modes: α , Spontaneous fission
Half-life: 20.07 [h]
Decay constant: $9.5935\text{e-}06$ [1/s]
Daughters: Cf-251 (100.0%), SF (2.3e-05%)
Radioactive daughters: Cf-251

DOSIMETRIC CONSTANTS

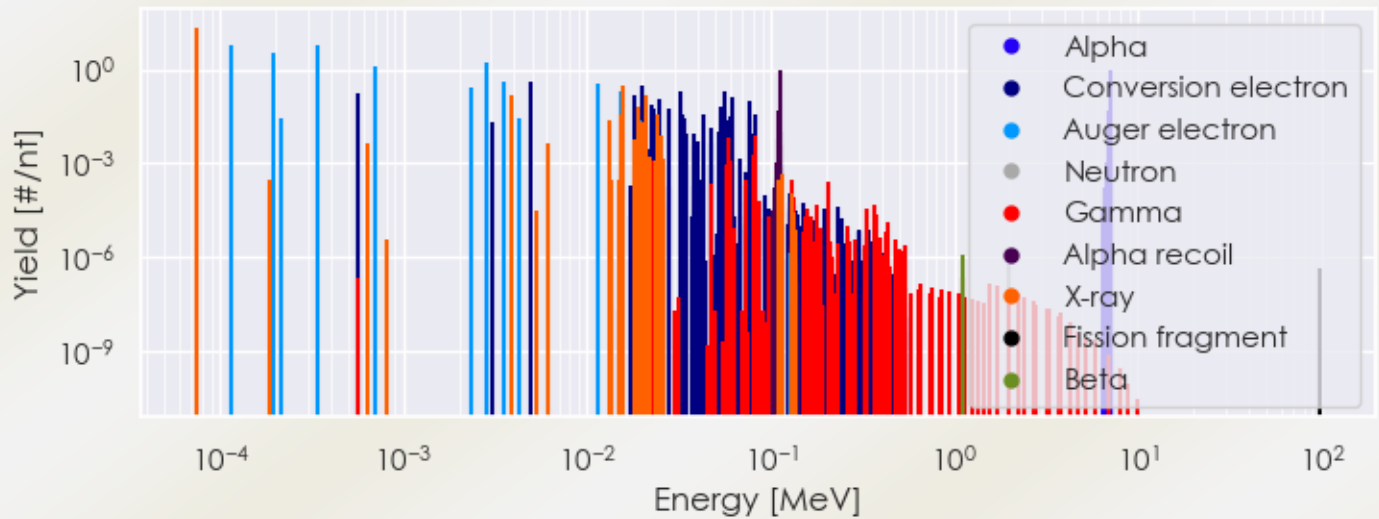
Mean alpha energy: 7.1292 [MeV]
Mean electron energy: 0.09541 [MeV]
Mean photon energy: 0.01696 [MeV]
Air kerma rate constant, Γ_{10} : $1.319\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Air kerma coefficient, K_{air} : $1.319\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $1.158\text{e-}12$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for alphas, Δ_{α} : $1.142\text{e-}12$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta+, e^-}$: 1.529×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 2.717×10^{-15} [Gy·kg/Bq·s]

SUMMARY SPECTRA (PLOT)

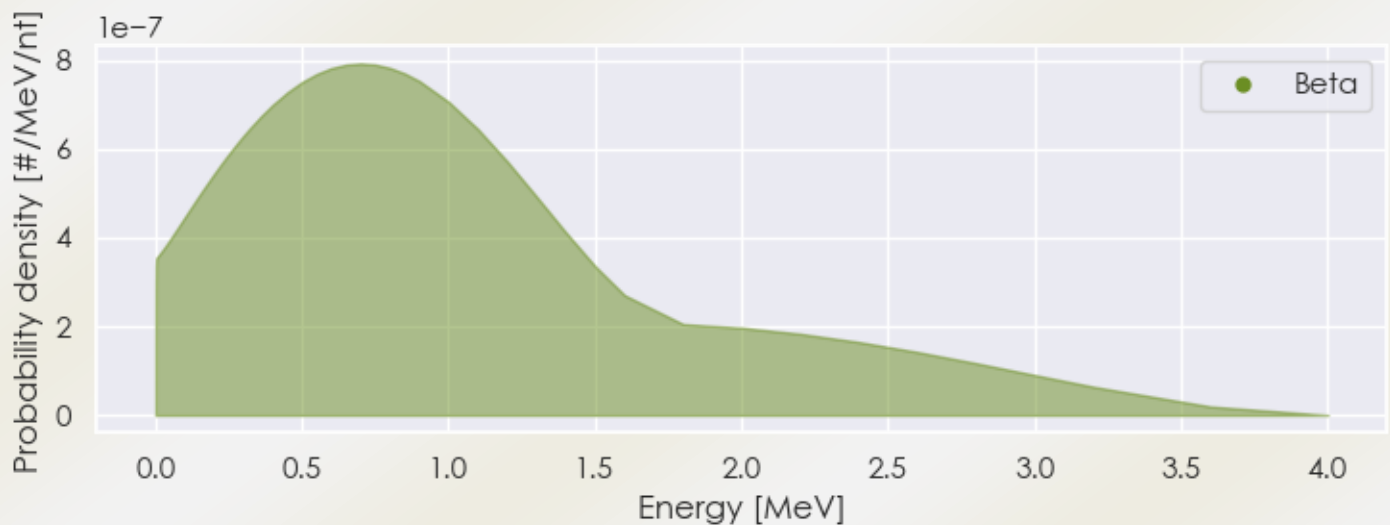
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/Fm-255 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-255%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/Fm-255 Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-255%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/Fm-255 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-255%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
7.46195e-05	2.240e+01	X-ray
3.87231e-03	1.569e-01	X-ray
1.31965e-02	2.300e-02	X-ray
1.54368e-02	3.428e-02	X-ray
1.56809e-02	3.008e-01	X-ray
1.90028e-02	6.571e-02	X-ray
1.96961e-02	2.041e-02	X-ray
1.97994e-02	1.351e-02	X-ray
2.07498e-02	1.523e-01	X-ray
2.09431e-02	1.479e-02	X-ray
2.42552e-02	3.641e-02	X-ray
1.14196e-04	6.272e+00	Auger electron
1.95043e-04	3.538e+00	Auger electron
2.13019e-04	2.855e-02	Auger electron
3.39938e-04	5.810e+00	Auger electron
5.70000e-04	1.700e-01	Conversion electron
6.96554e-04	1.284e+00	Auger electron
2.31576e-03	2.609e-01	Auger electron
2.81019e-03	1.757e+00	Auger electron
3.07200e-03	1.964e-02	Conversion electron
3.48239e-03	4.254e-01	Auger electron
4.25238e-03	2.783e-02	Auger electron
4.89500e-03	3.810e-01	Conversion electron
1.13998e-02	3.624e-01	Auger electron
1.53761e-02	1.944e-01	Auger electron
1.78972e-02	1.596e-01	Conversion electron
1.93890e-02	2.440e-02	Auger electron
1.97202e-02	3.125e-01	Conversion electron

2.25880e-02	6.888e-02	Conversion electron
2.30010e-02	5.963e-02	Conversion electron
2.48240e-02	1.156e-01	Conversion electron
2.79010e-02	5.472e-02	Conversion electron
3.18550e-02	2.507e-02	Conversion electron
3.24300e-02	2.044e-01	Conversion electron
3.32350e-02	3.428e-02	Conversion electron
3.39570e-02	2.754e-02	Conversion electron
4.27262e-02	3.606e-02	Conversion electron
4.78300e-02	1.332e-02	Conversion electron
5.33732e-02	6.187e-02	Conversion electron
5.49002e-02	1.071e-02	Conversion electron
5.54300e-02	1.028e-02	Conversion electron
5.56780e-02	4.840e-02	Conversion electron
5.62350e-02	2.011e-01	Conversion electron
5.84770e-02	2.315e-02	Conversion electron
6.09910e-02	3.250e-02	Conversion electron
6.15480e-02	1.347e-01	Conversion electron
7.58162e-02	2.387e-02	Conversion electron
7.63732e-02	9.908e-02	Conversion electron
8.14770e-02	3.670e-02	Conversion electron
6.96236e+00	4.989e-02	Alpha
7.02143e+00	9.245e-01	Alpha
1.11026e-01	4.989e-02	Alpha recoil
1.11968e-01	9.245e-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