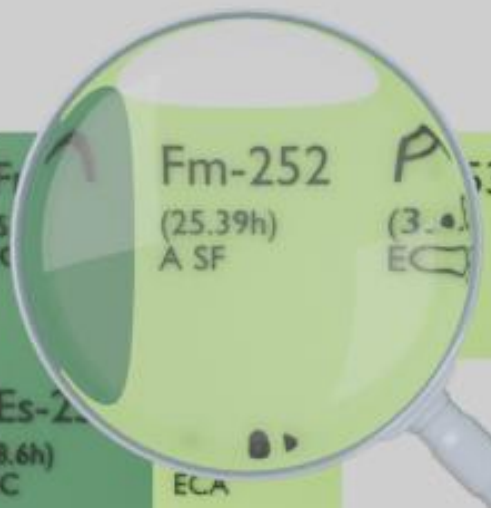




Fm-251 (5.9h) EC	Fm-252 (25.39h) A SF	Fm-253 (3.0h) EC	Fm-254 (3.240h) A SF	Fm-255 (20.07h) A SF	Fm-256 (157.6m) A SF
Es-249 (102.2m) ECB+A	Es-250 (8.6h) EC	Es-251 (5.12h) EC	Es-253 (20.47d) A SF	Es-254 (275.7d) A B-SF	Es-255 (39.8d) B-A SF

FERMIUM-252

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Fm-252
Atomic number (Z): 100
Mass number (A): 252
Neutron number (N): 152

RADIOACTIVE DECAY

Decay modes: α , Spontaneous fission
Half-life: 25.39 [h]
Decay constant: $7.5833\text{e-}06$ [1/s]
Daughters: Cf-248 (100.0%), SF (0.0023%)
Radioactive daughters: Cf-248

DOSIMETRIC CONSTANTS

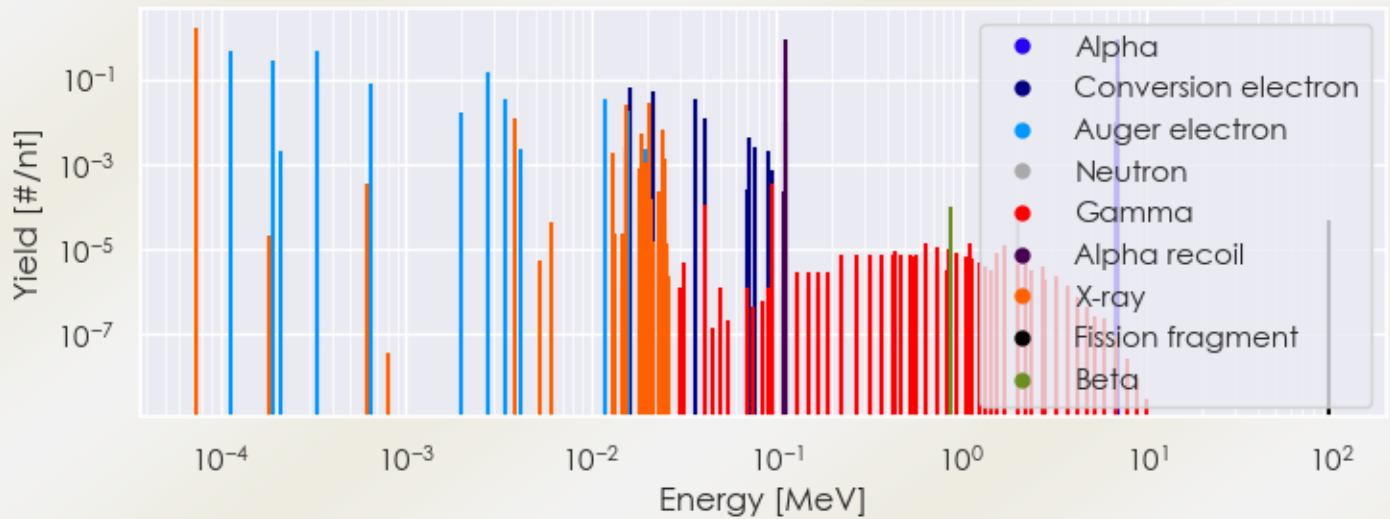
Mean alpha energy: 7.1448 [MeV]
Mean electron energy: 0.00637 [MeV]
Mean photon energy: 0.00182 [MeV]
Air kerma rate constant, Γ_{10} : $1.233\text{e-}18$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $1.281\text{e-}18$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $1.146\text{e-}12$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $1.145\text{e-}12$ [Gy $\cdot$ kg/Bq $\cdot$ s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta+, e^-}$: 1.021×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 2.916×10^{-16} [Gy·kg/Bq·s]

SUMMARY SPECTRA (PLOT)

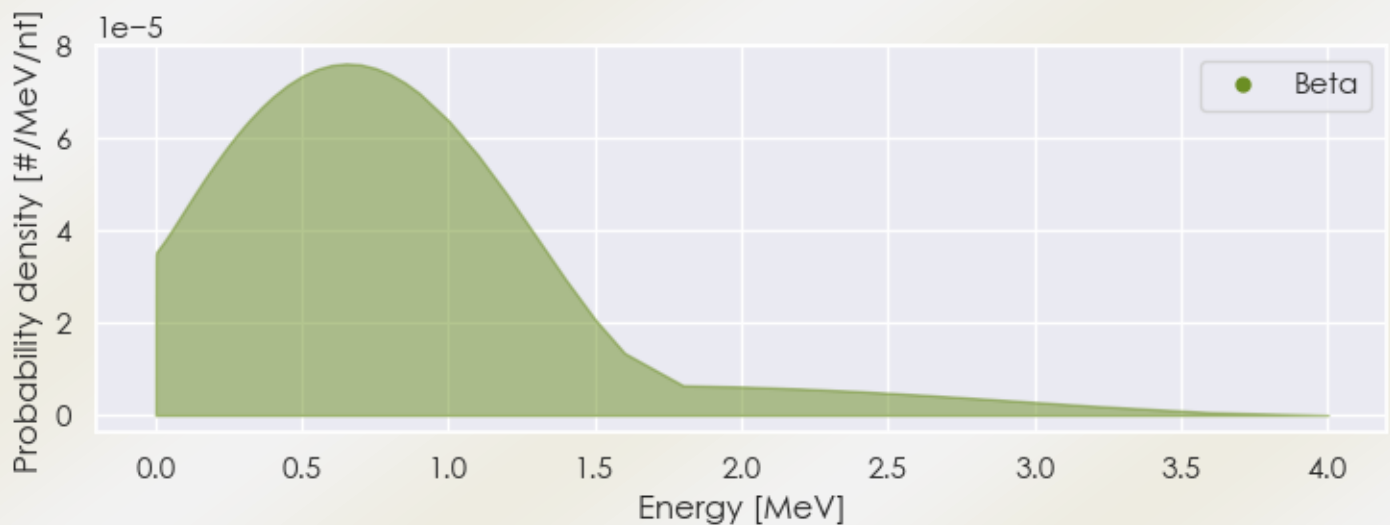
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/Fm-252 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-252%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-252 Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-252%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-252 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Fm-252%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nI)] if > 0.01	Radiation type
7.45992e-05	1.646e+00	X-ray
3.87083e-03	1.248e-02	X-ray
1.56809e-02	2.383e-02	X-ray
2.07498e-02	2.694e-02	X-ray
1.14521e-04	4.448e-01	Auger electron
1.90977e-04	2.690e-01	Auger electron
3.34881e-04	4.355e-01	Auger electron
6.47270e-04	7.631e-02	Auger electron
1.98870e-03	1.580e-02	Auger electron
2.80341e-03	1.389e-01	Auger electron
3.46500e-03	3.346e-02	Auger electron
1.18088e-02	3.308e-02	Auger electron
1.58163e-02	1.781e-02	Auger electron
1.62880e-02	6.359e-02	Conversion electron
2.16010e-02	5.255e-02	Conversion electron
3.64262e-02	3.381e-02	Conversion electron
4.15300e-02	1.247e-02	Conversion electron
6.99822e+00	1.500e-01	Alpha
7.03909e+00	8.400e-01	Alpha
1.12948e-01	1.500e-01	Alpha recoil
1.13608e-01	8.400e-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