IODINE-134M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: I-134m
Atomic number (Z): 53
Mass number (A): 134
Neutron number (N): 81

RADIOACTIVE DECAY

Decay modes: β-, Internal transition
Half-life: 3.6 [m]
Decay constant: 3.2090e-03 [1/s]
Daughters: I-134 (97.7%), Xe-134 (2.3%)
Radioactive daughters: I-134

DOSIMETRIC CONSTANTS

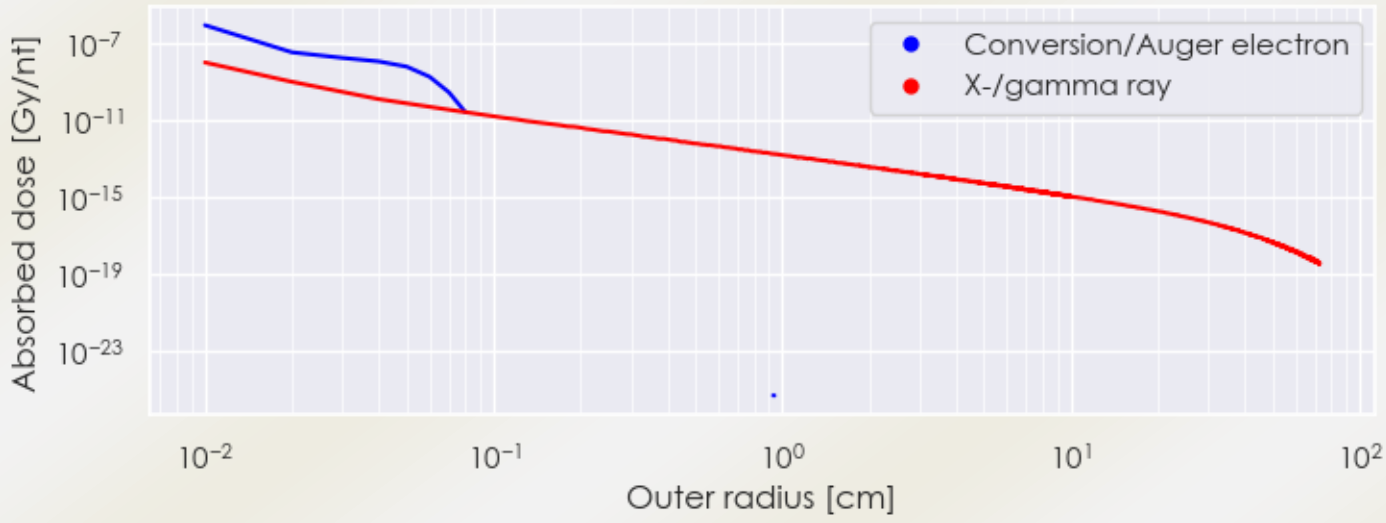
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.09131 [MeV]
Mean photon energy: 0.28871 [MeV]
Air kerma rate constant, Γ_{10}: 1.465e-17 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 1.465e-17 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 1.463e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 1.463e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 4.626e-14 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

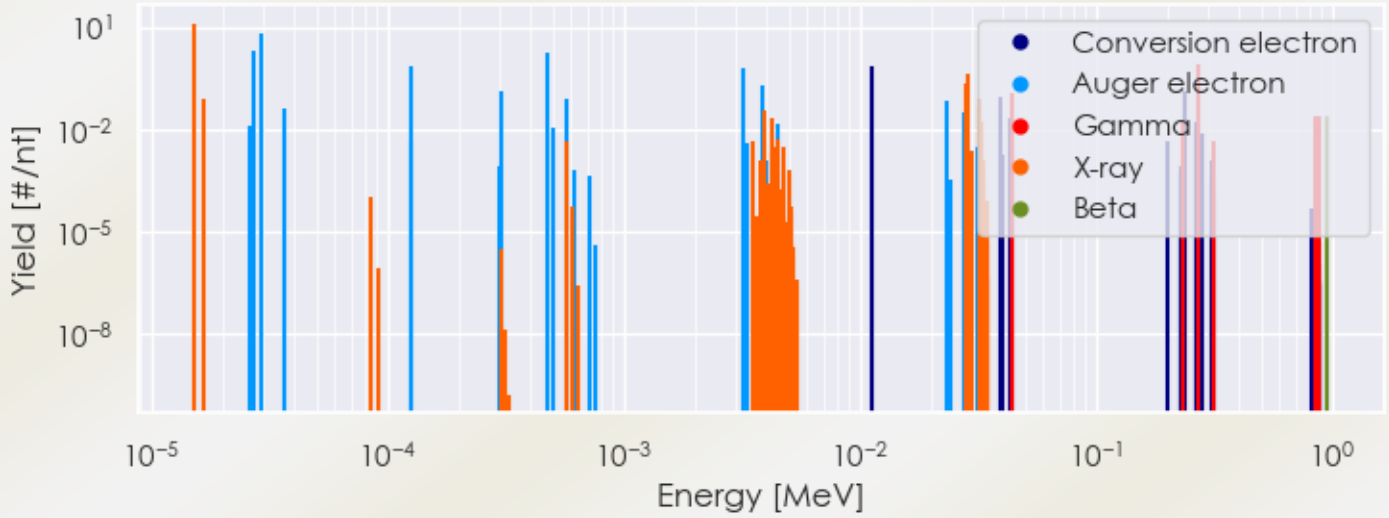
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/I-134m DPK.csv

SUMMARY SPECTRA (PLOT)

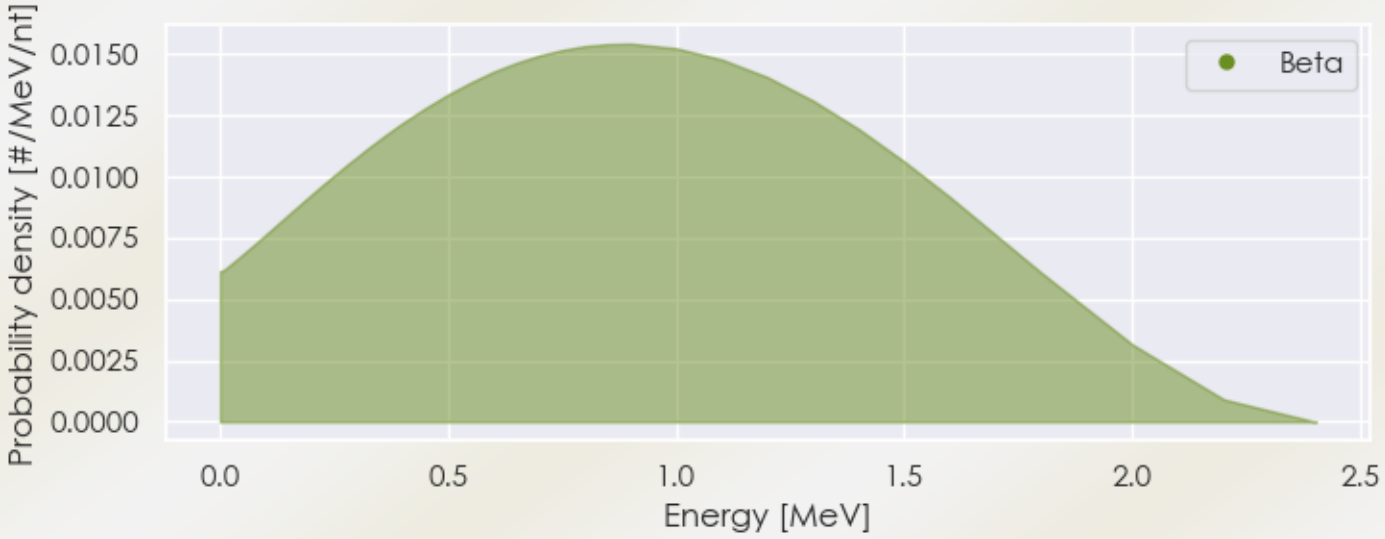
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/I-134m Summary Spectrum.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/I-134m Beta 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/I-134m Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.52660e-05	1.297e+01	X-ray
1.66151e-05	8.146e-02	X-ray
3.92520e-03	3.782e-02	X-ray
4.21605e-03	2.269e-02	X-ray
2.83065e-02	2.244e-01	X-ray
2.86096e-02	4.166e-01	X-ray
3.22368e-02	3.875e-02	X-ray
3.22942e-02	7.514e-02	X-ray
3.30298e-02	1.581e-02	X-ray
4.44000e-02	1.084e-01	Gamma

2.34300e-01	1.587e-02	Gamma
2.72100e-01	7.914e-01	Gamma
8.47000e-01	2.300e-02	Gamma
8.85000e-01	2.300e-02	Gamma
9.60836e-01	2.300e-02	Beta
2.60857e-05	1.264e-02	Auger electron
2.70101e-05	1.943e+00	Auger electron
2.89496e-05	6.253e+00	Auger electron
3.62292e-05	3.877e-02	Auger electron
1.25162e-04	7.160e-01	Auger electron
3.03375e-04	1.356e-01	Auger electron
4.76912e-04	1.668e+00	Auger electron
5.04858e-04	1.070e-02	Auger electron
5.78292e-04	7.936e-02	Auger electron
3.20510e-03	6.544e-01	Auger electron
3.83969e-03	1.934e-01	Auger electron
4.49772e-03	1.408e-02	Auger electron
1.12360e-02	7.465e-01	Conversion electron
2.35598e-02	6.738e-02	Auger electron
2.75866e-02	3.017e-02	Auger electron
3.92381e-02	9.021e-02	Conversion electron
4.35302e-02	2.007e-02	Conversion electron
2.38936e-01	1.288e-01	Conversion electron
2.66938e-01	1.352e-02	Conversion electron
2.67243e-01	1.665e-02	Conversion electron
2.67546e-01	1.142e-02	Conversion 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