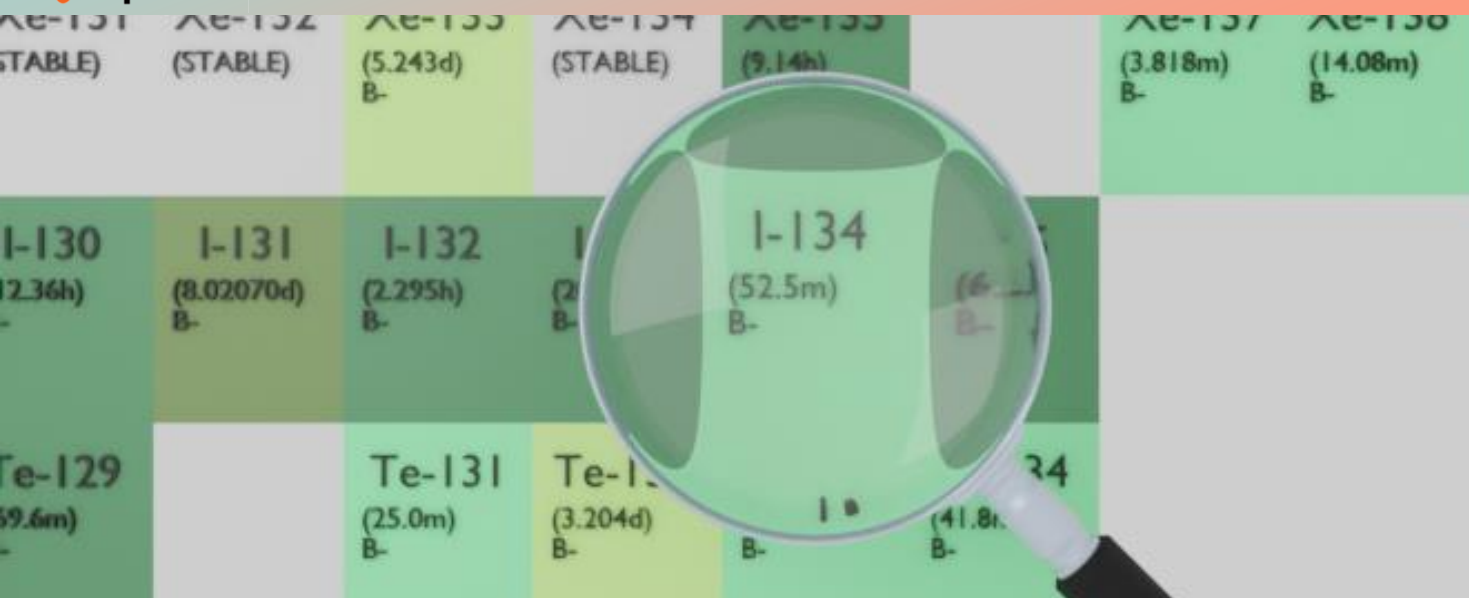




IODINE-134

SUMMARY DATA

GENERAL

CLASSIFICATION

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

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 52.5 [m]
Decay constant: 2.2005×10^{-4} [1/s]
Daughters: Xe-134 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.57758 [MeV]
Mean photon energy: 2.59534 [MeV]
Air kerma rate constant, Γ_{10} : 9.297×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 9.297×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 9.254×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

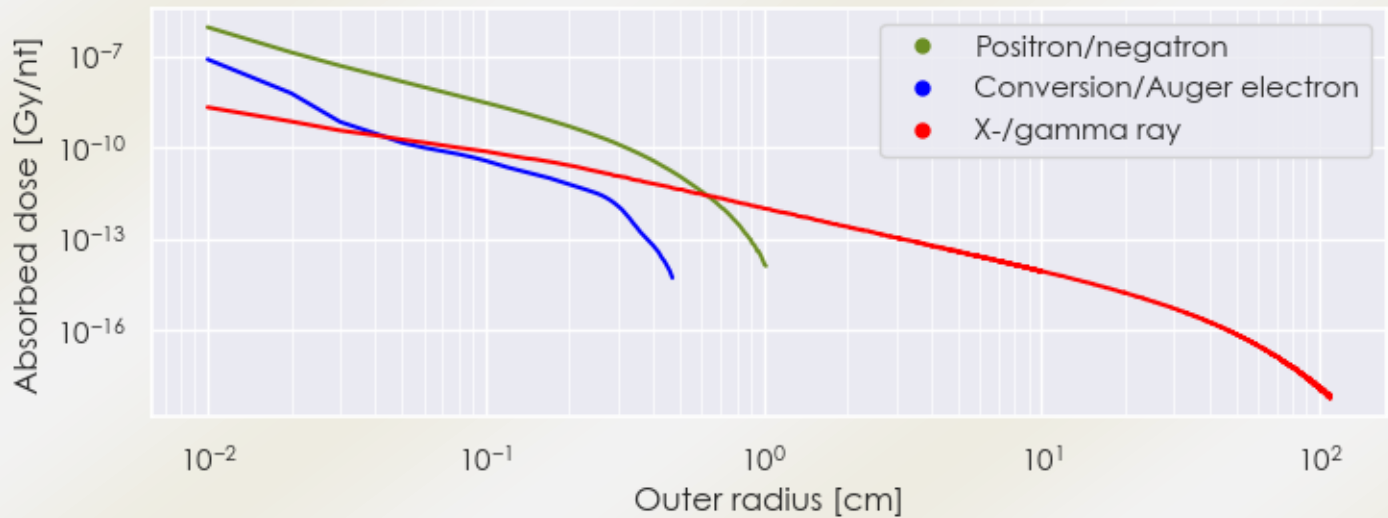
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 9.254×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.158×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

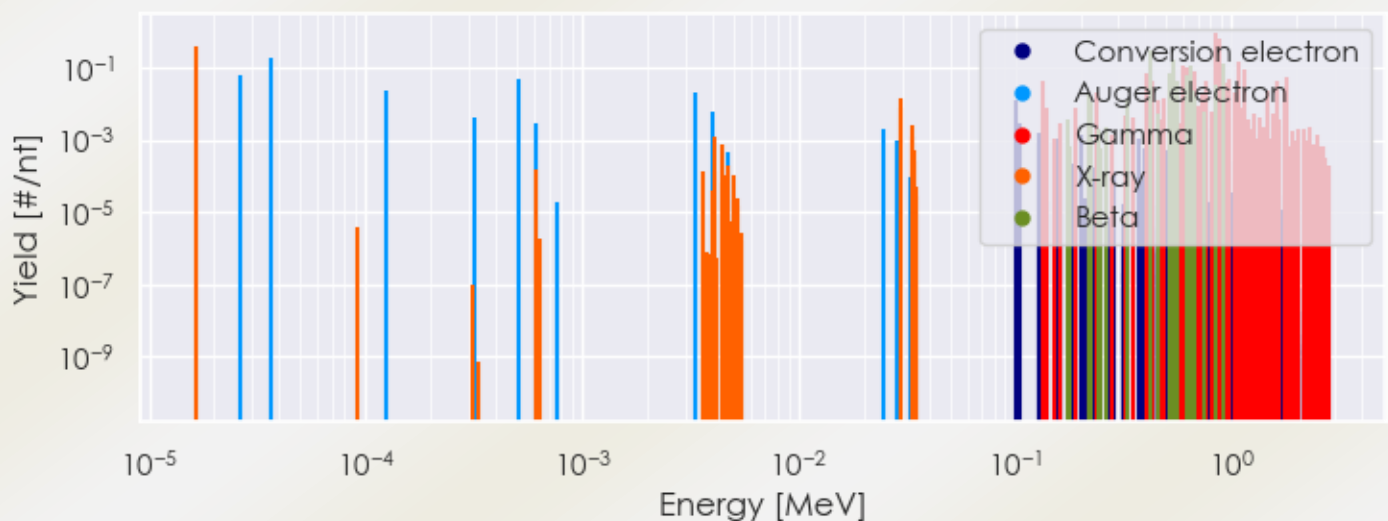
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



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

SUMMARY SPECTRA (PLOT)

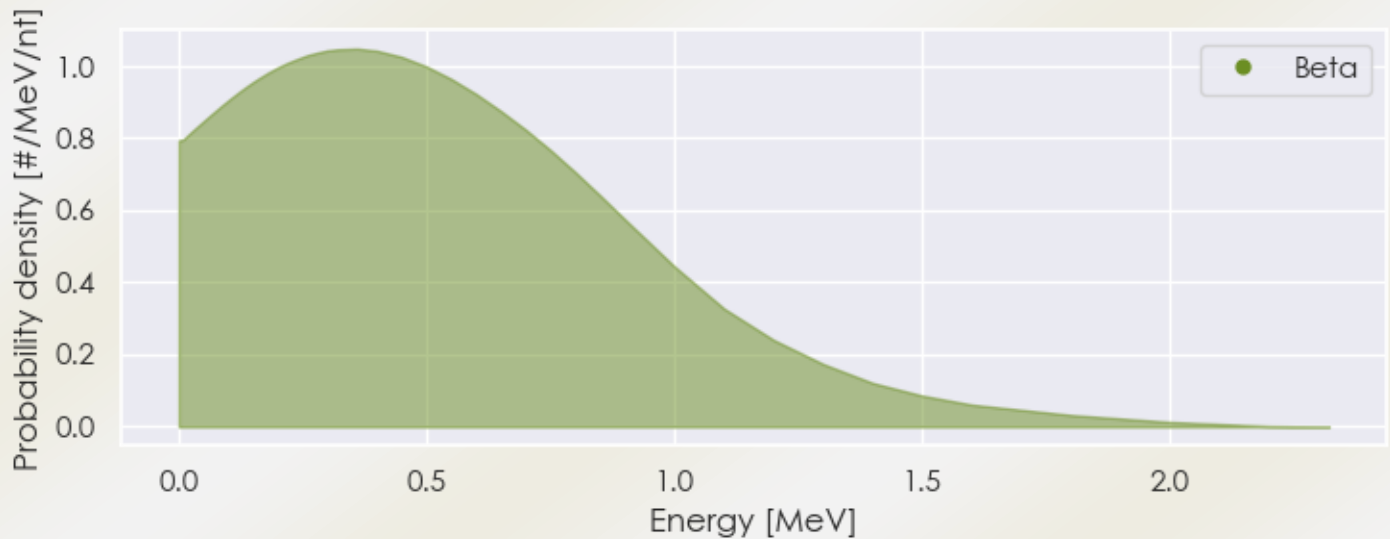
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



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

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.66176e-05	3.925e-01	X-ray
2.97812e-02	1.346e-02	X-ray
1.35399e-01	4.293e-02	Gamma
2.35471e-01	2.127e-02	Gamma
4.05451e-01	7.346e-02	Gamma
4.33350e-01	4.140e-02	Gamma
4.58920e-01	1.307e-02	Gamma
4.88880e-01	1.450e-02	Gamma
5.14400e-01	2.232e-02	Gamma
5.40825e-01	7.632e-02	Gamma

5.95362e-01	1.107e-01	Gamma
6.21790e-01	1.059e-01	Gamma
6.27960e-01	2.213e-02	Gamma
6.77340e-01	7.918e-02	Gamma
7.30740e-01	1.822e-02	Gamma
7.66680e-01	4.140e-02	Gamma
8.47025e-01	9.540e-01	Gamma
8.57290e-01	6.678e-02	Gamma
8.84090e-01	6.487e-01	Gamma
9.47860e-01	3.997e-02	Gamma
9.74670e-01	4.770e-02	Gamma
1.04025e+00	2.022e-02	Gamma
1.07255e+00	1.488e-01	Gamma
1.13616e+00	9.063e-02	Gamma
1.45524e+00	2.290e-02	Gamma
1.61380e+00	4.293e-02	Gamma
1.74149e+00	2.557e-02	Gamma
1.80684e+00	5.533e-02	Gamma
2.17740e-01	1.770e-02	Beta
2.23383e-01	1.078e-02	Beta
3.32068e-01	1.335e-02	Beta
4.21410e-01	3.006e-01	Beta
5.12265e-01	6.824e-02	Beta
5.40556e-01	1.602e-01	Beta
5.58333e-01	4.055e-02	Beta
6.19235e-01	6.527e-02	Beta
6.43745e-01	1.088e-01	Beta
6.66217e-01	2.215e-02	Beta
6.79651e-01	1.582e-02	Beta
8.37946e-01	3.264e-02	Beta
9.23648e-01	1.236e-01	Beta
2.61556e-05	6.112e-02	Auger electron
3.62375e-05	1.867e-01	Auger electron
1.23766e-04	2.294e-02	Auger electron
5.05048e-04	5.127e-02	Auger electron
3.32408e-03	2.022e-02	Auger electron
1.00843e-01	1.313e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6