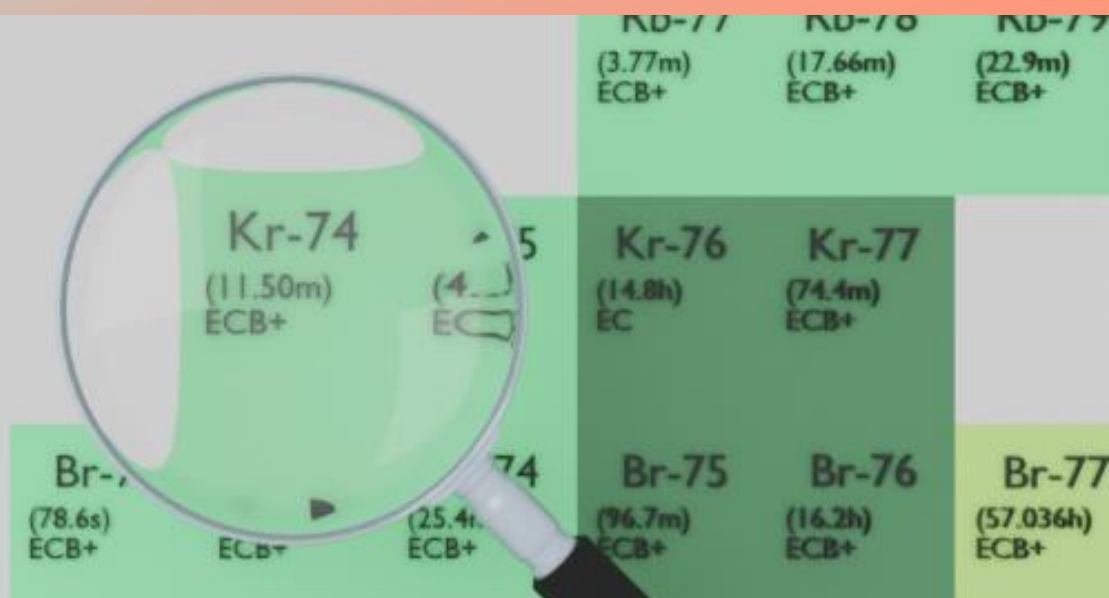




	Kr-77 (3.77m) ECB+	Kr-78 (17.66m) ECB+	Kr-79 (22.9m) ECB+
	Kr-76 (14.8h) EC	Kr-77 (74.4m) ECB+	
Br-74 (78.6s) ECB+	Br-75 (96.7m) ECB+	Br-76 (16.2h) ECB+	Br-77 (57.036h) ECB+

KRYPTON-74

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Kr-74
Atomic number (Z): 36
Mass number (A): 74
Neutron number (N): 38

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 11.5 [m]
Decay constant: 1.0046×10^{-3} [1/s]
Daughters: Br-74 (100.0%)
Radioactive daughters: Br-74

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.60062 [MeV]
Mean photon energy: 1.05792 [MeV]
Air kerma rate constant, Γ_{10} : 1.906×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 4.894×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 9.623×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

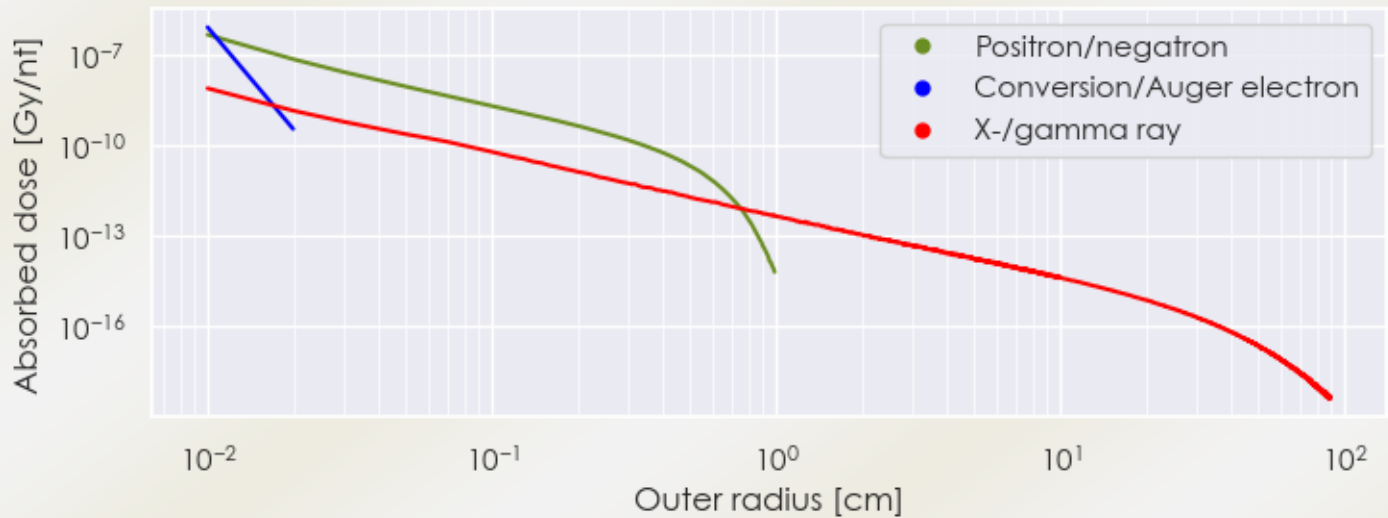
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-\beta+,e-}$: $9.623\text{e-}14$ [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : $1.695\text{e-}13$ [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

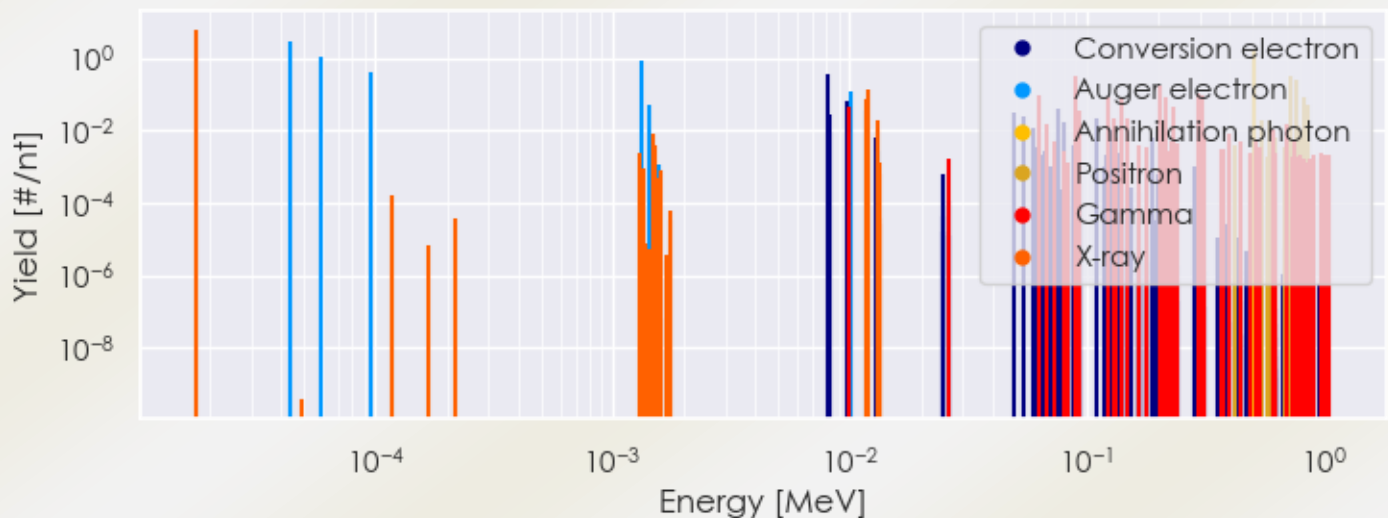
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Kr-74 DPK.csv

SUMMARY SPECTRA (PLOT)

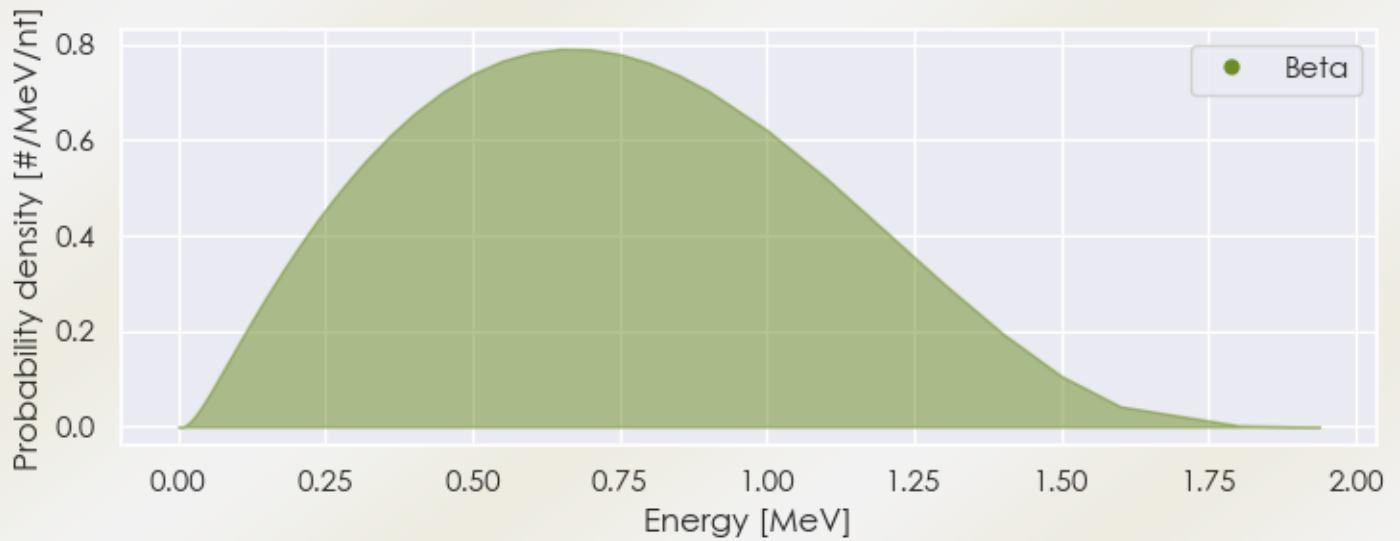
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Kr-74 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/Kr-74 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/Kr-74 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.76044e-05	6.165e+00	X-ray
9.85000e-03	4.340e-02	Gamma
1.18329e-02	7.123e-02	X-ray
1.18814e-02	1.375e-01	X-ray
1.32502e-02	1.917e-02	X-ray
6.28400e-02	9.610e-02	Gamma
6.72900e-02	1.457e-02	Gamma
8.97000e-02	3.100e-01	Gamma
9.38100e-02	3.286e-02	Gamma
1.23360e-01	8.370e-02	Gamma

1.29600e-01	2.170e-02	Gamma
1.40270e-01	8.060e-02	Gamma
1.49720e-01	2.139e-02	Gamma
2.02980e-01	1.798e-01	Gamma
2.16900e-01	8.060e-02	Gamma
2.33880e-01	4.340e-02	Gamma
2.96670e-01	9.920e-02	Gamma
3.06510e-01	9.300e-02	Gamma
5.11000e-01	1.544e+00	Annihilation photon
6.09200e-01	1.054e-02	Gamma
7.01300e-01	1.457e-02	Gamma
5.44305e-01	1.876e-02	Positron
5.85520e-01	1.876e-02	Positron
7.22156e-01	3.160e-01	Positron
7.64845e-01	2.468e-01	Positron
7.80084e-01	1.382e-02	Positron
8.21242e-01	7.899e-02	Positron
8.57891e-01	4.937e-02	Positron
4.39998e-05	2.756e+00	Auger electron
5.83678e-05	1.098e+00	Auger electron
9.62377e-05	3.848e-01	Auger electron
1.32774e-03	8.318e-01	Auger electron
1.42511e-03	5.082e-02	Auger electron
8.08080e-03	3.461e-01	Conversion electron
8.24790e-03	2.683e-02	Conversion electron
9.66522e-03	6.214e-02	Conversion electron
1.02029e-02	1.139e-01	Auger electron
1.16354e-02	3.486e-02	Auger electron
4.94050e-02	3.222e-02	Conversion electron
5.38550e-02	2.520e-02	Conversion electron
5.89450e-02	1.201e-02	Conversion electron
7.62650e-02	3.836e-02	Conversion electron
8.03750e-02	1.743e-02	Conversion electron
1.09925e-01	2.230e-02	Conversion electron
1.26835e-01	1.048e-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