



STABLE)	(18.642d) B-EC	(4.923E10y) B-	(17.78m) B-	(15.15m) B-	(158s) B-
Kr-84 (STABLE)	Kr-85 (10.756y) B-	Kr-86 (STABLE)	Kr-88 (2.84h) B-	Kr-89 (3.15m) B-	Kr-90 (3.43m) B-
Br-83 (2.40h) B-	Br-84 (31.80m) B-	Br-85 (2.90m) B-			

KRYPTON-88

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Kr-88
Atomic number (Z): 36
Mass number (A): 88
Neutron number (N): 52

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 2.84 [h]
Decay constant: 6.7796×10^{-5} [1/s]
Daughters: Rb-88 (100.0%)
Radioactive daughters: Rb-88

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.36887 [MeV]
Mean photon energy: 1.95383 [MeV]
Air kerma rate constant, Γ_{10} : 6.183×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 6.183×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 5.910×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

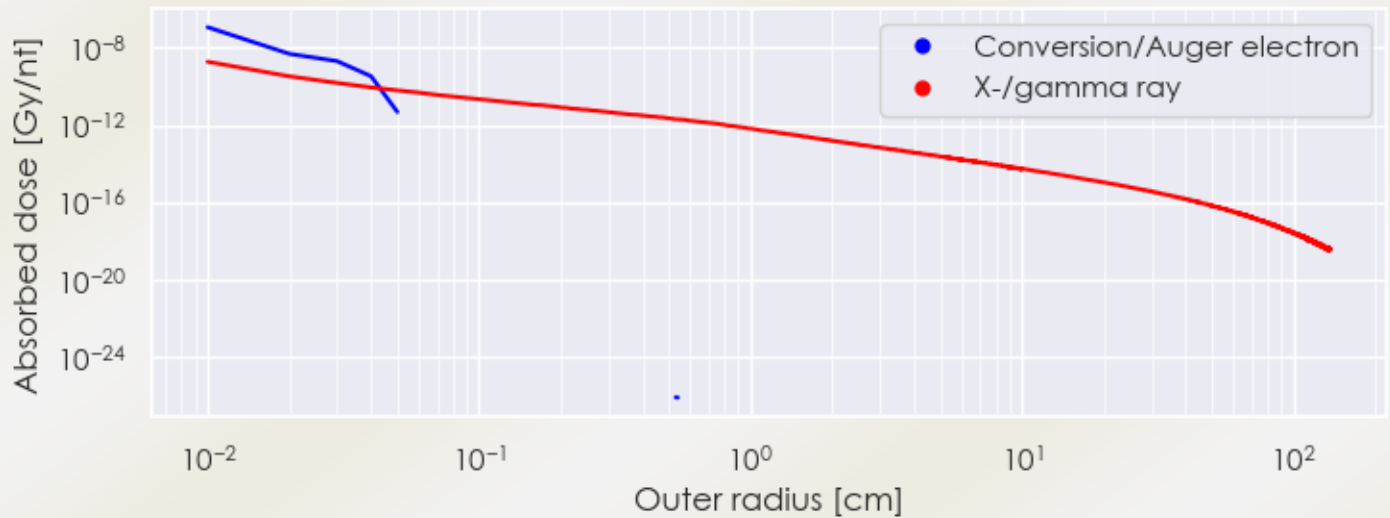
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 5.910×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 3.130×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

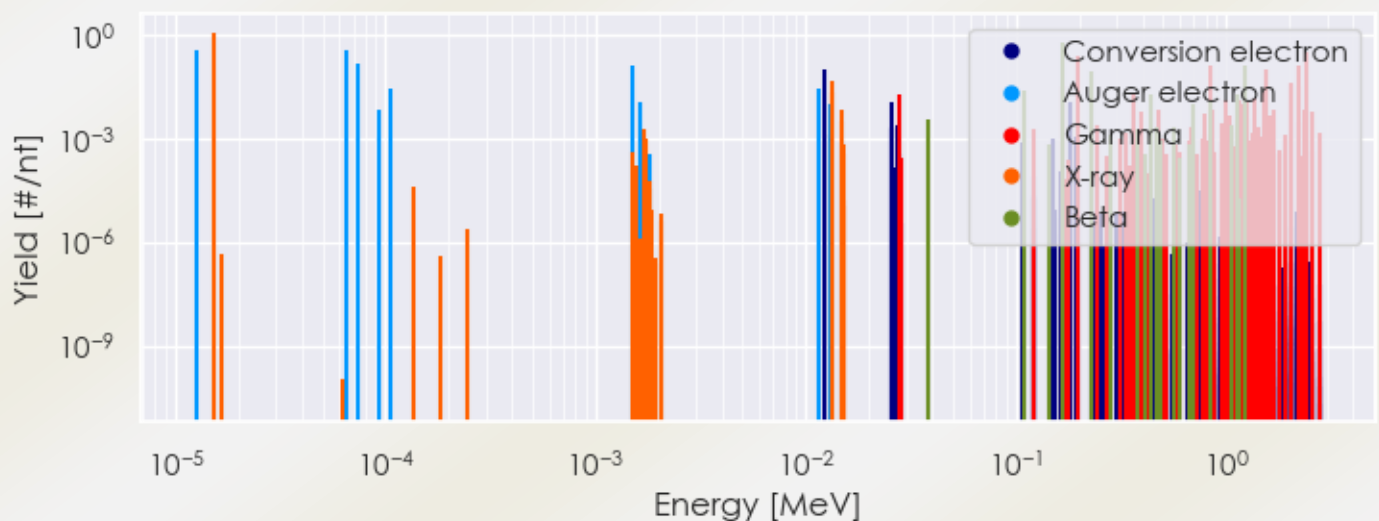
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Kr-88 DPK.csv

SUMMARY SPECTRA (PLOT)

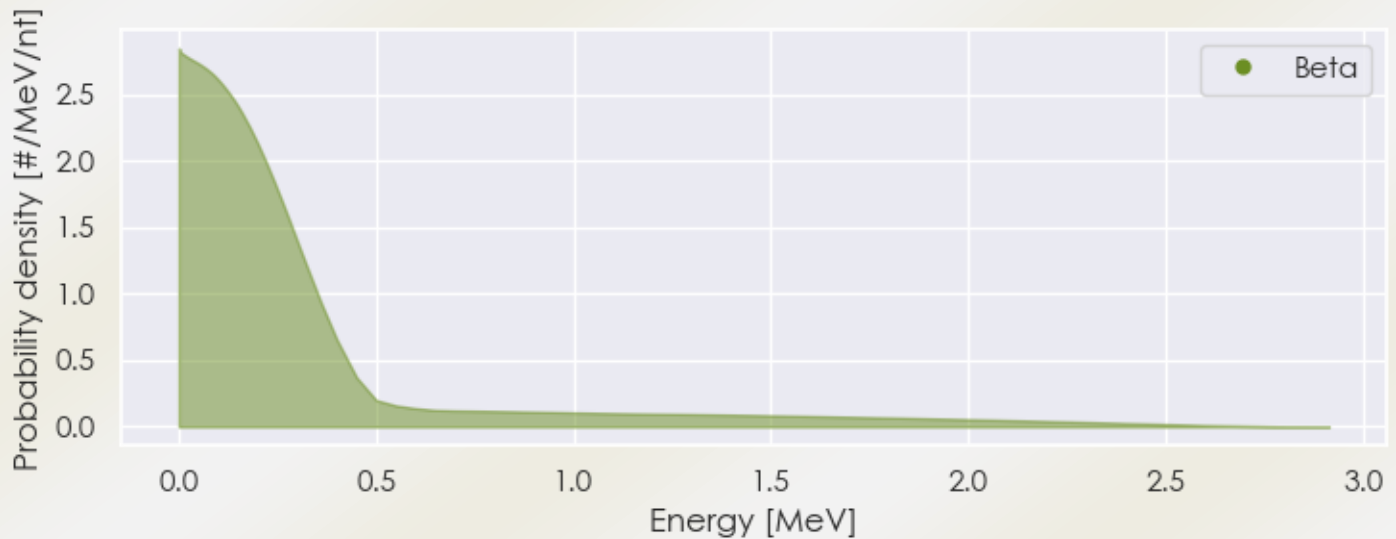
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Kr-88 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-88 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-88 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.52794e-05	1.266e+00	X-ray
1.32919e-02	2.366e-02	X-ray
1.33539e-02	4.553e-02	X-ray
2.75130e-02	1.924e-02	Gamma
1.65980e-01	3.104e-02	Gamma
1.96301e-01	2.598e-01	Gamma
3.62226e-01	2.249e-02	Gamma
8.34830e-01	1.298e-01	Gamma
9.85780e-01	1.315e-02	Gamma
1.14133e+00	1.284e-02	Gamma

1.25067e+00	1.121e-02	Gamma
1.36950e+00	1.477e-02	Gamma
1.51839e+00	2.152e-02	Gamma
1.52977e+00	1.093e-01	Gamma
2.02984e+00	4.529e-02	Gamma
2.03541e+00	3.737e-02	Gamma
2.19584e+00	1.318e-01	Gamma
2.23177e+00	3.391e-02	Gamma
2.39211e+00	3.460e-01	Gamma
1.09454e-01	2.623e-02	Beta
1.65376e-01	6.631e-01	Beta
2.26544e-01	9.007e-02	Beta
4.41025e-01	1.930e-02	Beta
6.91884e-01	1.010e-02	Beta
8.35443e-01	1.287e-02	Beta
1.13590e+00	2.078e-02	Beta
1.23297e+00	1.386e-01	Beta
1.26043e-05	3.709e-01	Auger electron
6.49791e-05	3.721e-01	Auger electron
7.35551e-05	1.502e-01	Auger electron
1.05863e-04	2.885e-02	Auger electron
1.48954e-03	1.410e-01	Auger electron
1.61107e-03	1.141e-02	Auger electron
1.14024e-02	3.017e-02	Auger electron
1.23540e-02	1.058e-01	Conversion electron
2.54650e-02	1.111e-02	Conversion electron
1.81142e-01	1.150e-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