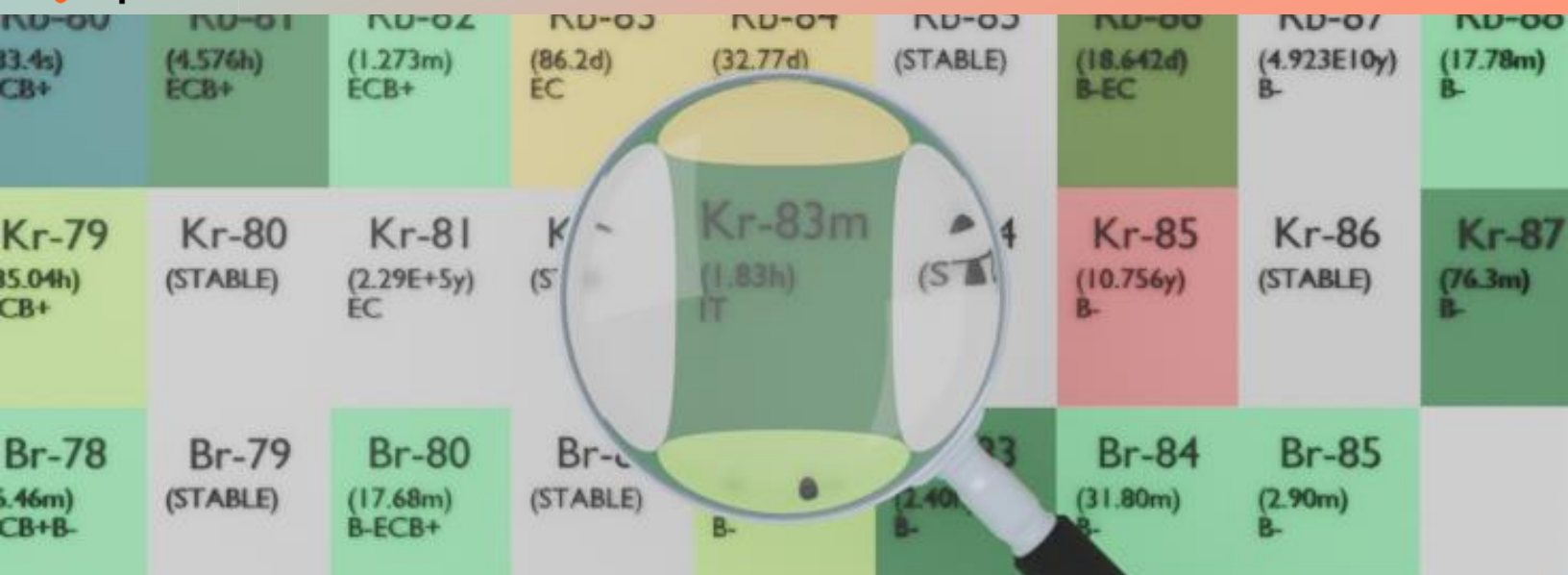




KRYPTON-83M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Kr-83m
Atomic number (Z): 36
Mass number (A): 83
Neutron number (N): 47

RADIOACTIVE DECAY

Decay modes: Internal transition
Half-life: 1.83 [h]
Decay constant: 1.0521×10^{-4} [1/s]
Daughters: Kr-83 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.03881 [MeV]
Mean photon energy: 0.00275 [MeV]
Air kerma rate constant, Γ_{10} : 5.466×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 5.466×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 6.218×10^{-15} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000 \times 10^{+00}$ [Gy $\cdot$ kg/Bq $\cdot$ s]

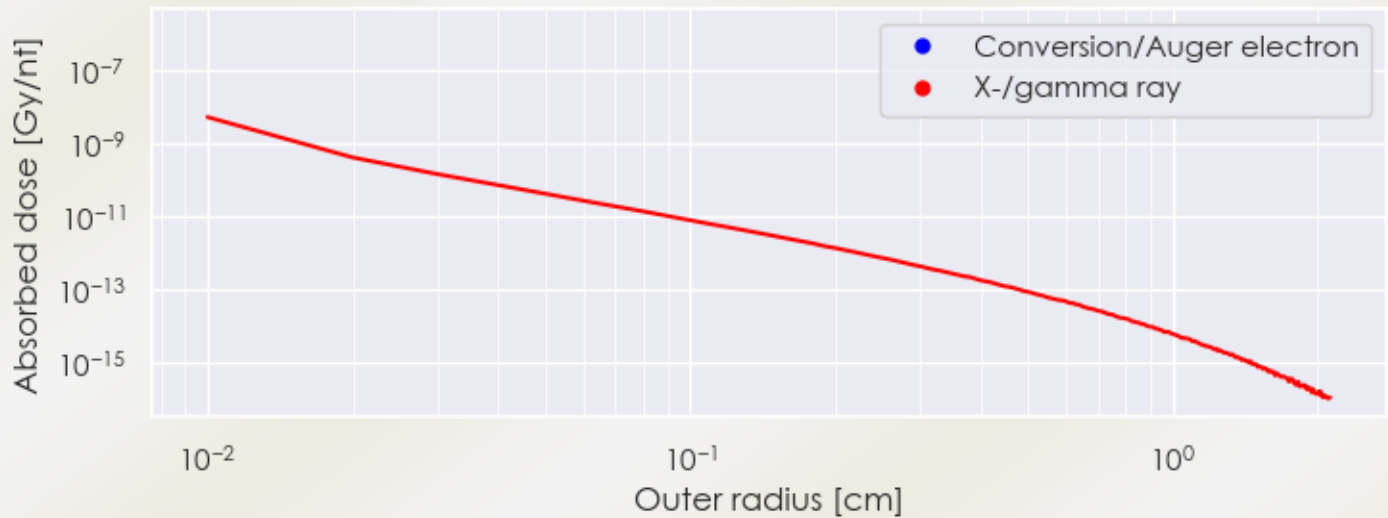
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-\beta^+,e^-}$: 6.218×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.406×10^{-16} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

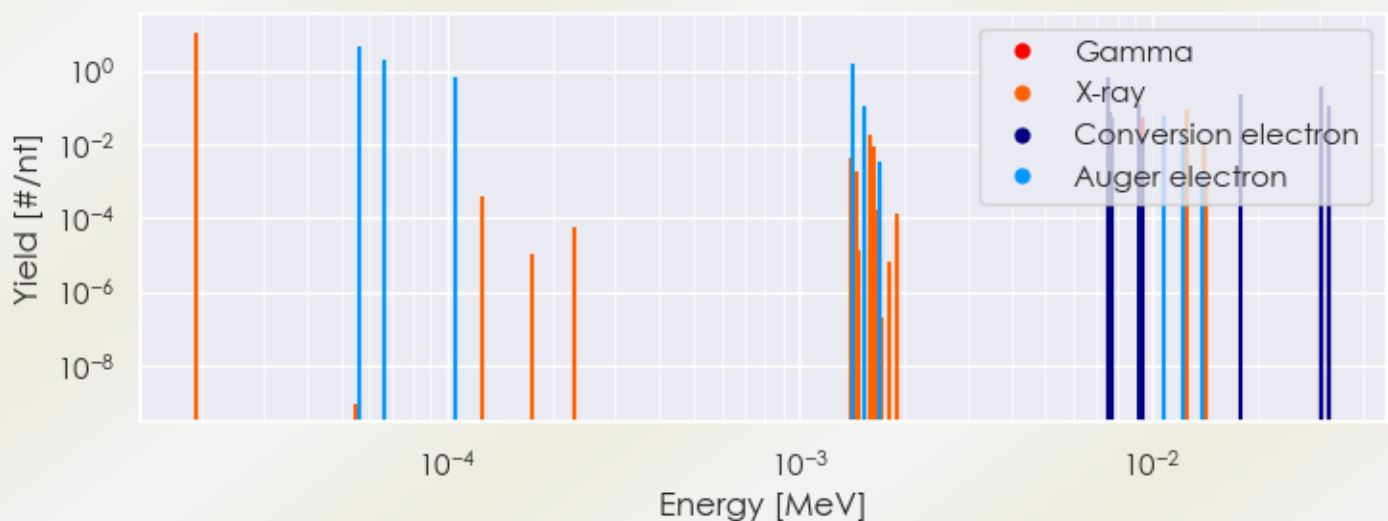
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Kr-83m 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-83m Summary 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-83m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Kr-83m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
1.94039e-05	1.105e+01	X-ray
1.57942e-03	1.743e-02	X-ray
9.40510e-03	5.580e-02	Gamma
1.25517e-02	4.483e-02	X-ray
1.26066e-02	8.644e-02	X-ray
1.40730e-02	1.230e-02	X-ray
5.65028e-05	4.815e+00	Auger electron
6.58240e-05	1.921e+00	Auger electron
1.05322e-04	6.319e-01	Auger electron
1.41375e-03	1.562e+00	Auger electron
1.52261e-03	1.148e-01	Auger electron
7.50280e-03	6.648e-01	Conversion electron
7.67680e-03	7.487e-02	Conversion electron
7.73170e-03	5.714e-02	Conversion electron
9.19814e-03	1.319e-01	Conversion electron
9.40510e-03	1.551e-02	Conversion electron
1.07980e-02	6.392e-02	Auger electron
1.23371e-02	2.029e-02	Auger electron
1.78698e-02	2.373e-01	Conversion electron
3.02475e-02	1.580e-02	Conversion electron
3.04215e-02	2.447e-01	Conversion electron
3.04764e-02	3.813e-01	Conversion electron
3.19428e-02	1.105e-01	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