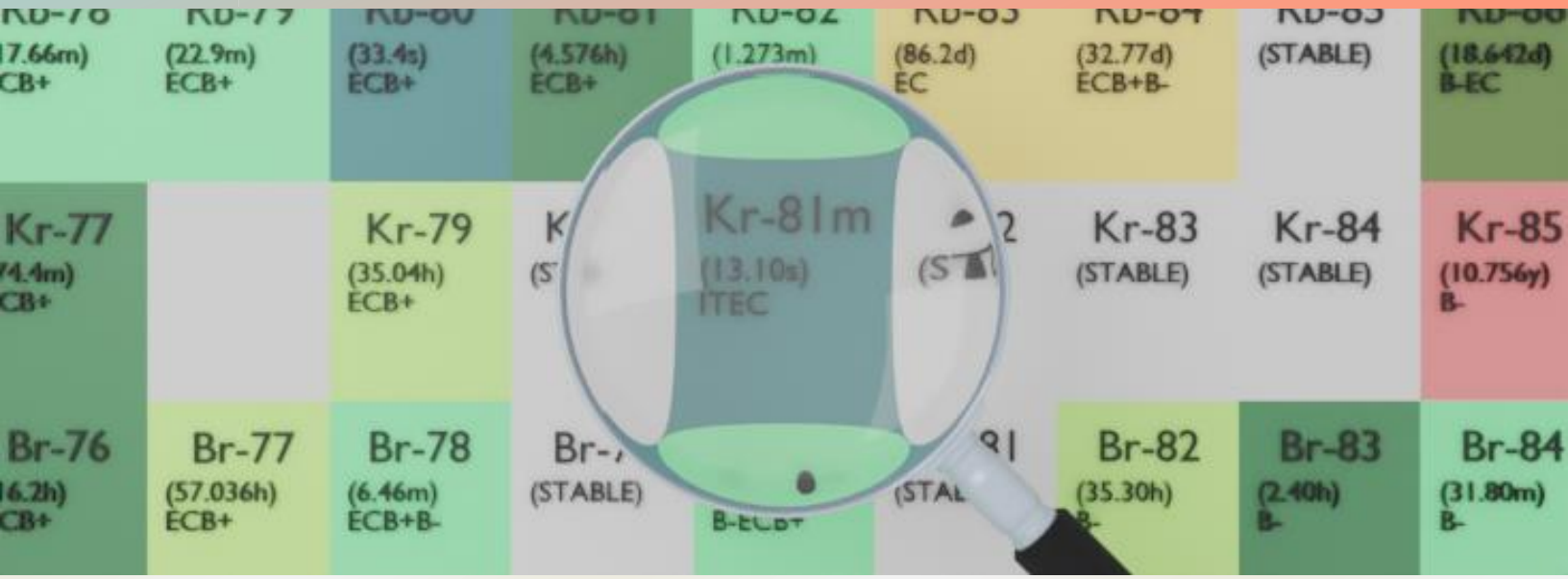


KRYPTON-81M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Kr-81m
Atomic number (Z): 36
Mass number (A): 81
Neutron number (N): 45

RADIOACTIVE DECAY

Decay modes: Electron capture, Internal transition
Half-life: 13.1 [s]
Decay constant: 5.2912e-02 [1/s]
Daughters: Kr-81 (100.0%), Br-81 (0.0025%)
Radioactive daughters: Kr-81

DOSIMETRIC CONSTANTS

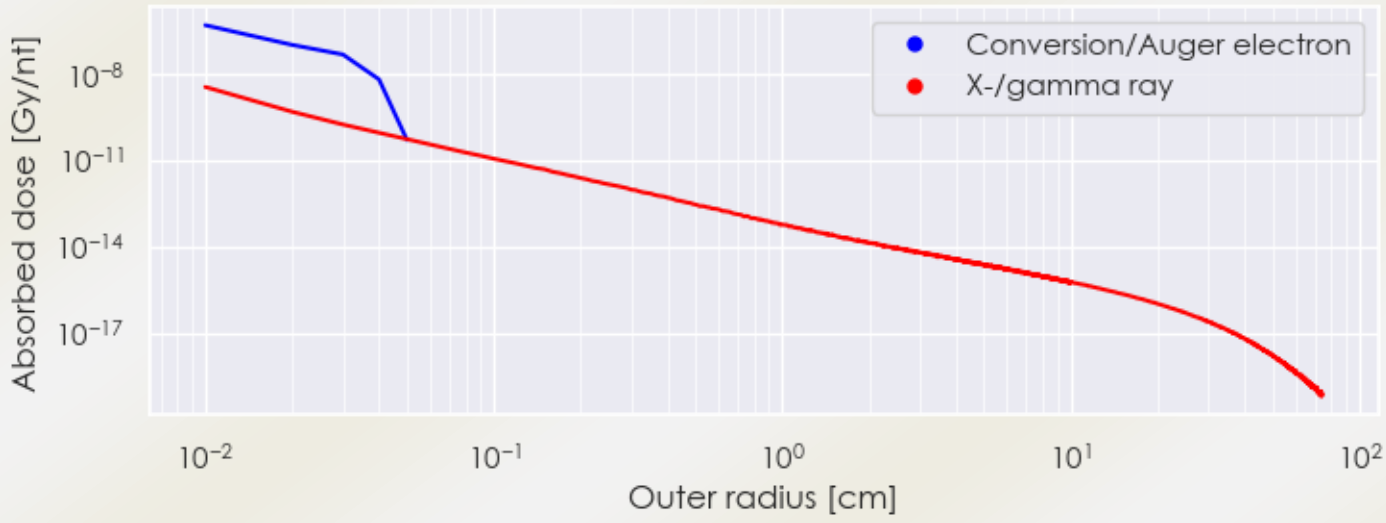
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.0596 [MeV]
Mean photon energy: 0.13085 [MeV]
Air kerma rate constant, Γ_{10}: 1.053e-17 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 1.053e-17 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 9.549e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta^-,\beta^+,e^-}$: 9.549e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_p: 2.096e-14 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

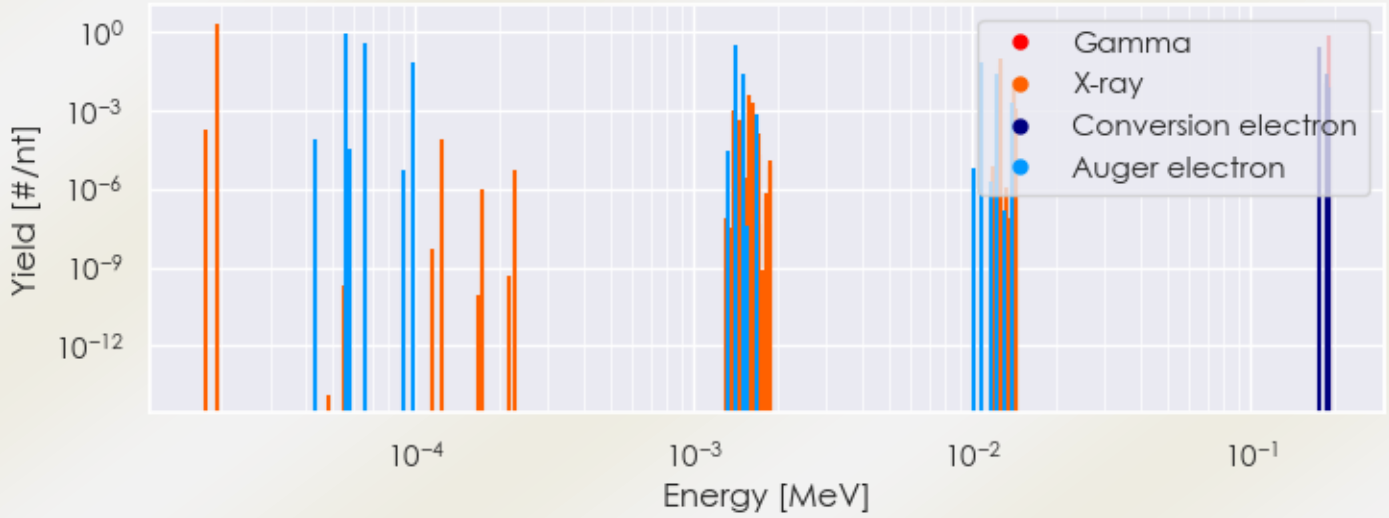
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Kr-81m 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-81m 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-81m Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.93791e-05	2.153e+00	X-ray
1.25517e-02	5.083e-02	X-ray
1.26066e-02	9.802e-02	X-ray
1.40730e-02	1.395e-02	X-ray
1.90460e-01	6.752e-01	Gamma
5.62585e-05	9.420e-01	Auger electron
6.54780e-05	3.698e-01	Auger electron
9.82524e-05	6.400e-02	Auger electron
1.40715e-03	3.312e-01	Auger electron
1.51159e-03	2.391e-02	Auger electron
1.07980e-02	7.249e-02	Auger electron
1.23371e-02	2.301e-02	Auger electron
1.76180e-01	2.691e-01	Conversion electron
1.88558e-01	2.552e-02	Conversion electron
1.88732e-01	1.065e-02	Conversion electron
1.88787e-01	1.082e-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