



SI-77 (2.25m) CB+	SI-80 (106.3m) ECB+	SI-81 (22.3m) ECB+	SI-82 (25.36d) EC	SI-83 (32.41h) ECB+	SI-84 (STABLE)	SI-85 (64.84d) EC	SI-86 (STABLE)	SI-87 (STABLE)
Rb-78 (7.66m) CB+	Rb-79 (22.9m) ECB+	Rb-80 (33.4s) ECB+	Rb-81 (4.18h) ECB+	Rb-82 (1.273m) ECB+	Rb-83 (8.02d) ECB+	Rb-84 (32.77d) ECB+B-	Rb-85 (STABLE)	Rb-86 (18.642d) B-EC
Kr-77 (4.4m) CB+	Kr-78 (STABLE)	Kr-79 (35.04h) ECB+	Kr-80 (STABLE)	Kr-81 (STABLE)	Kr-82 (STABLE)	Kr-83 (STABLE)	Kr-84 (STABLE)	Kr-85 (10.756y) B-

RUBIDIUM-82

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Rb-82
Atomic number (Z): 37
Mass number (A): 82
Neutron number (N): 45

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 1.273 [m]
Decay constant: 9.0750×10^{-3} [1/s]
Daughters: Kr-82 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.41123 [MeV]
Mean photon energy: 1.1083 [MeV]
Air kerma rate constant, Γ_{10} : 5.769×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 4.271×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.261×10^{-13} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000×10^0 [Gy $\cdot$ kg/Bq $\cdot$ s]

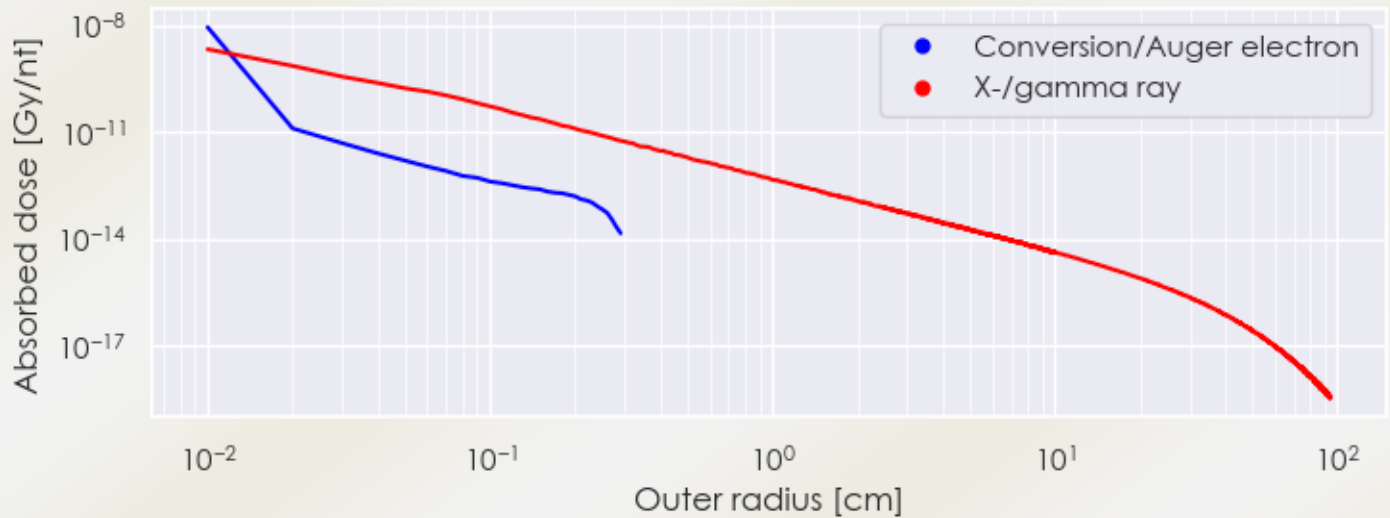
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 2.261×10^{-13} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.776×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

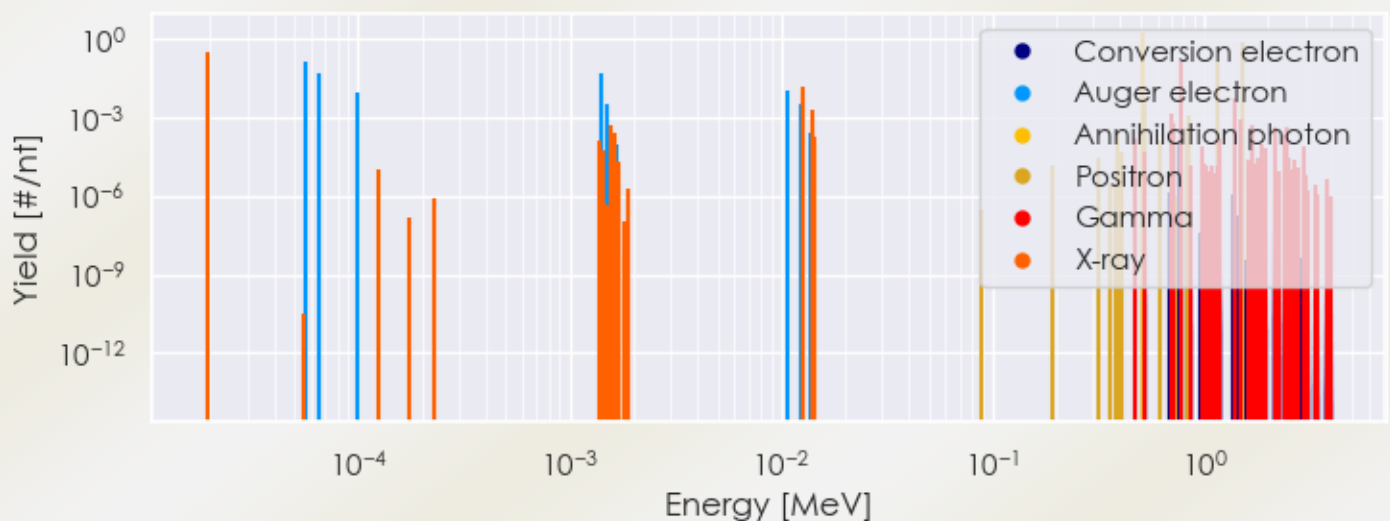
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Rb-82 DPK.csv

SUMMARY SPECTRA (PLOT)

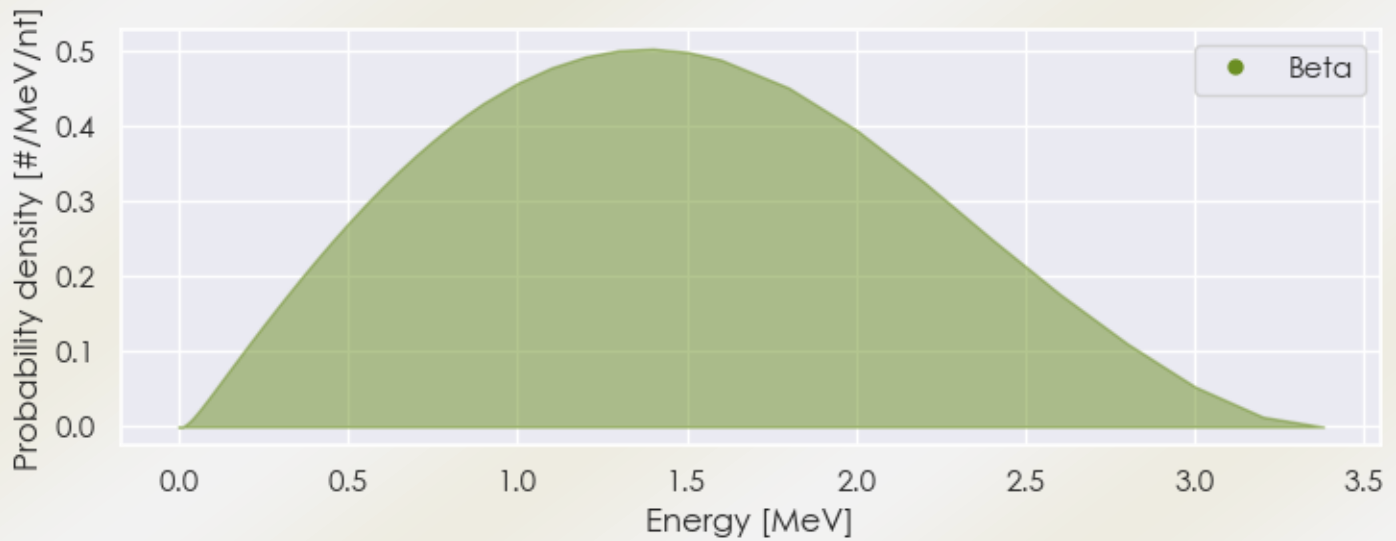
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Rb-82 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/Rb-82 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/Rb-82 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.93809e-05	3.113e-01	X-ray
1.26066e-02	1.469e-02	X-ray
5.11000e-01	1.908e+00	Annihilation photon
7.76520e-01	1.508e-01	Gamma
1.16732e+00	1.313e-01	Positron
1.53429e+00	8.175e-01	Positron
5.62893e-05	1.361e-01	Auger electron
6.55312e-05	5.352e-02	Auger electron
9.99062e-05	1.012e-02	Auger electron
1.40733e-03	4.751e-02	Auger electron

1.07980e-02

1.087e-02

[Auger 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