

Sr-81 (22.3m) ECB+	Sr-82 (25.36d) EC	Sr-83 (32.41h) ECB+	Sr-84 (4.88h) ECB+	Sr-85m (67.63m) EC, beta+, IT	Sr-86 (10.5m) ECB+	Sr-87 (4.98h) ECB+	Sr-88 (28.8d) ECB+	Sr-89 (50.53d) B-
Rb-80 (48.8h) ECB+	Rb-81 (4.576h) ECB+	Rb-82 (1.273m) ECB+	Rb-83 (86.2d) EC	Rb-84 (48.8h) ECB+	Rb-85 (4.88h) ECB+	Rb-86 (18.642d) B-EC	Rb-87 (4.923E10y) B-	Rb-88 (17.78m) B-

STRONTIUM-85M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sr-85m
 Atomic number (Z): 38
 Mass number (A): 85
 Neutron number (N): 47

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture, Internal transition
 Half-life: 67.63 [m]
 Decay constant: 1.7082×10^{-4} [1/s]
 Daughters: Sr-85 (86.6%), Rb-85 (13.4%)
 Radioactive daughters: Sr-85

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
 Mean electron energy: 0.01296 [MeV]
 Mean photon energy: 0.21773 [MeV]
 Air kerma rate constant, Γ_{10} : 1.053×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
 Air kerma coefficient, K_{air} : 1.053×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
 Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.076×10^{-15} [Gy $\cdot$ kg/Bq $\cdot$ s]
 Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

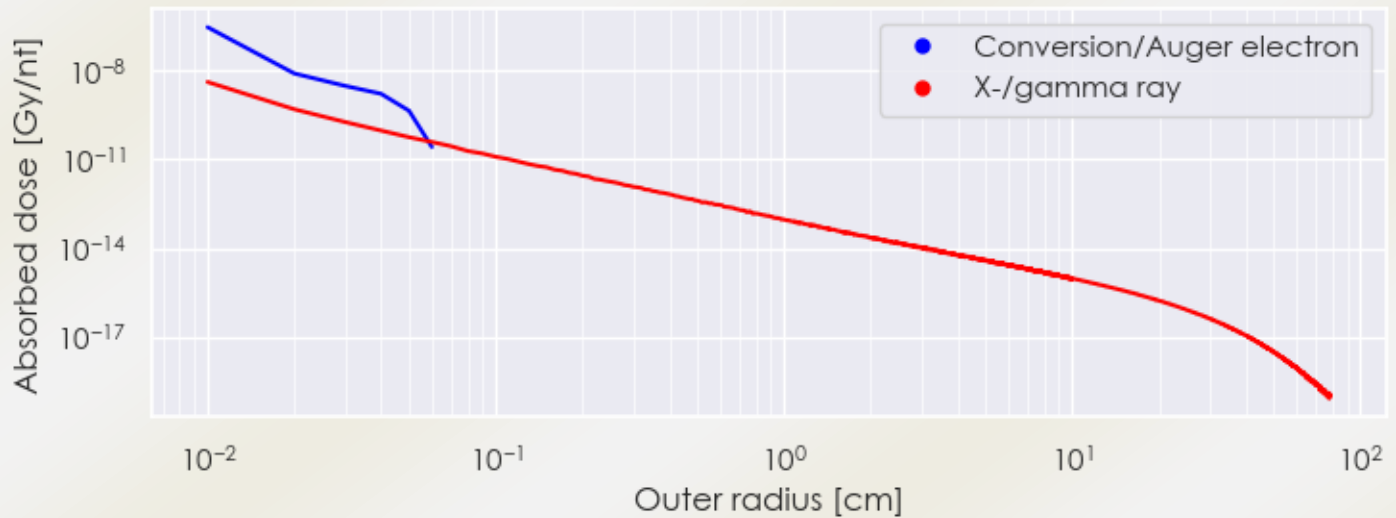
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 2.076×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 3.488×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

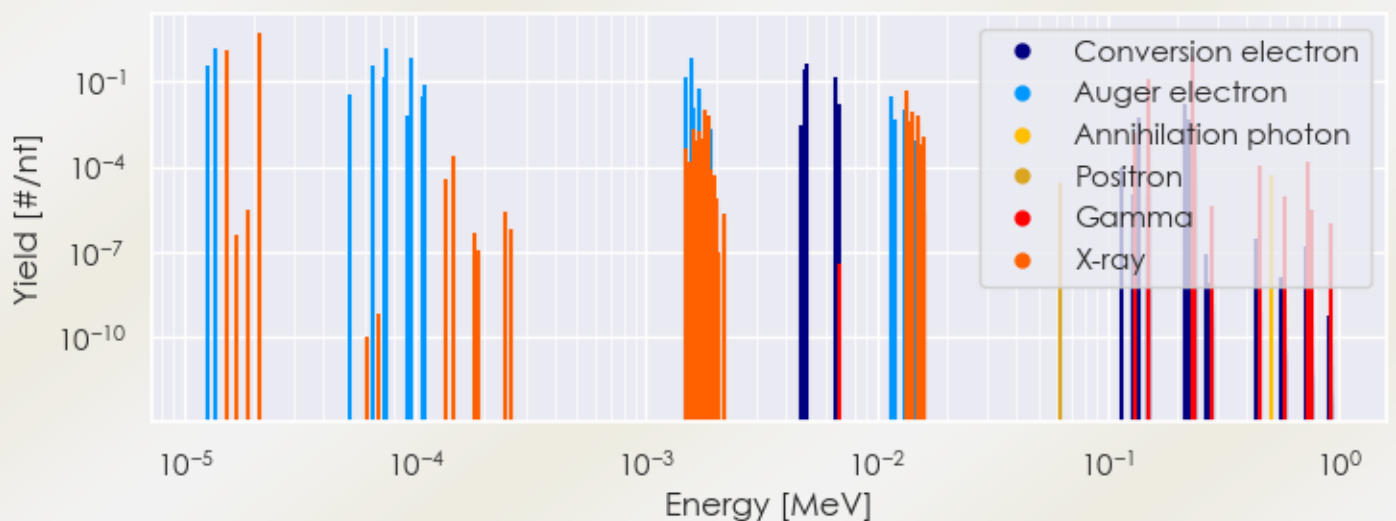
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Sr-85m DPK.csv

SUMMARY SPECTRA (PLOT)

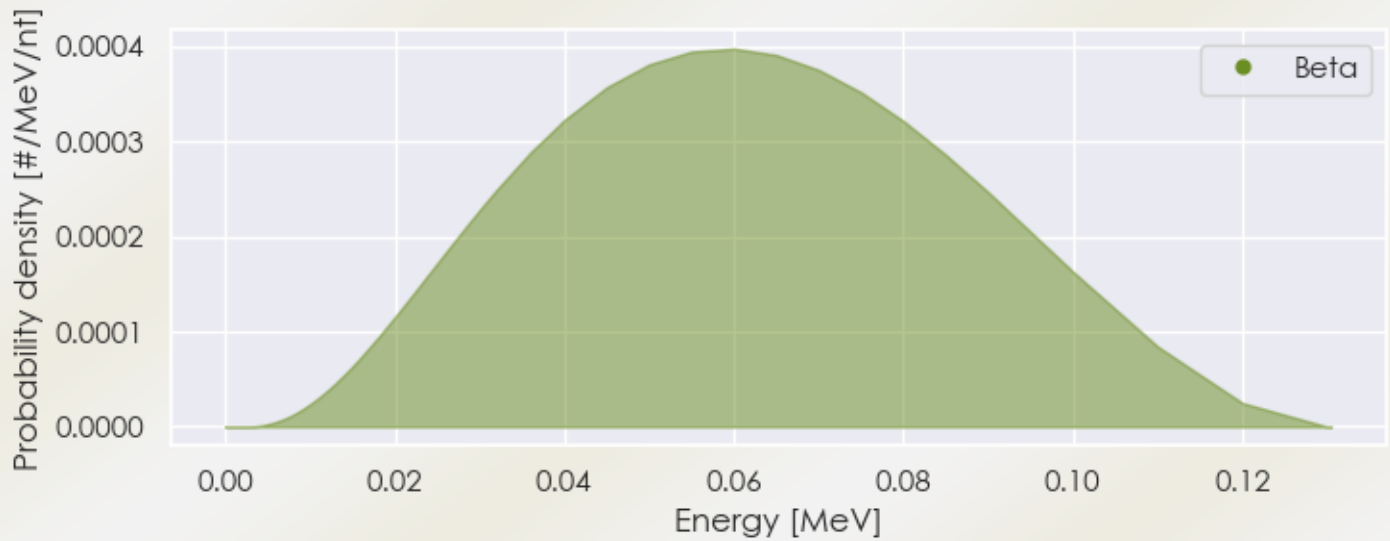
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Sr-85m 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/Sr-85m 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/Sr-85m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.52775e-05	1.264e+00	X-ray
2.09647e-05	5.387e+00	X-ray
1.32919e-02	2.394e-02	X-ray
1.33539e-02	4.605e-02	X-ray
1.51194e-01	1.286e-01	Gamma
2.31860e-01	8.443e-01	Gamma
1.26043e-05	3.706e-01	Auger electron
1.36397e-05	1.493e+00	Auger electron
5.23040e-05	3.466e-02	Auger electron
6.50077e-05	3.714e-01	Auger electron

7.35431e-05	1.500e-01	Auger electron
7.47131e-05	1.500e+00	Auger electron
9.55275e-05	6.599e-01	Auger electron
1.06853e-04	3.030e-02	Auger electron
1.09442e-04	7.239e-02	Auger electron
1.48974e-03	1.401e-01	Auger electron
1.56974e-03	6.487e-01	Auger electron
1.61154e-03	1.135e-02	Auger electron
1.70603e-03	5.695e-02	Auger electron
4.90790e-03	2.538e-01	Conversion electron
4.97760e-03	4.444e-01	Conversion electron
6.65047e-03	1.461e-01	Conversion electron
6.92000e-03	1.638e-02	Conversion electron
1.14024e-02	3.051e-02	Auger electron
1.30522e-02	1.001e-02	Auger electron
2.15793e-01	1.670e-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