

A magnifying glass is positioned over the Sr-82 isotope in a periodic table of isotopes. The table displays various isotopes with their mass numbers, half-lives, and decay modes. The Sr-82 isotope is highlighted by the magnifying glass, showing its mass number (82), half-life (25.36d), and decay mode (EC). The table also includes isotopes of Rb, Sr, and Y, with their respective properties.

Isotope	Mass Number	Half-life	Decay Mode
Rb-77	77	3.77m	EC+
Rb-78	78	17.66m	ECB+
Rb-79	79	22.9m	ECB+
Rb-80	80	33.4s	ECB+
Rb-81	81	1.27s	ECB+
Rb-82	82	1.27s	ECB+
Rb-83	83	86.2d	EC
Rb-84	84	32.77d	ECB+B-
Rb-85	85	(STABLE)	(STABLE)
Sr-79	79	2.25m	ECB+
Sr-80	80	106.3m	ECB+
Sr-81	81	70.4s	ECB+
Sr-82	82	25.36d	EC
Sr-83	83	2.68h	ECB+
Sr-84	84	(STABLE)	(STABLE)
Sr-85	85	14.74h	ECB+
Sr-86	86	79.8h	ECB+

STRONTIUM-82

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sr-82

Atomic number (Z): 38

Mass number (A): 82

Neutron number (N): 44

RADIOACTIVE DECAY

Decay modes: Electron capture

Half-life: 25.36 [d]

Decay constant: 3.1635e-07 [1/s]

Daughters: Rb-82 (100.0%)

Radioactive daughters: Rb-82

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]

Mean electron energy: 0.00535 [MeV]

Mean photon energy: 0.00788 [MeV]

Air kerma rate constant, Γ_{10} : 1.809e-17 [Gy·m²/Bq·s]

Air kerma coefficient, K_{air} : 1.809e-17 [Gy·m²/Bq·s]

Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 8.572e-16 [Gy·kg/Bq·s]

Equilibrium dose constant for alphas, Δ_a : 0.000e+00 [Gy·kg/Bq·s]

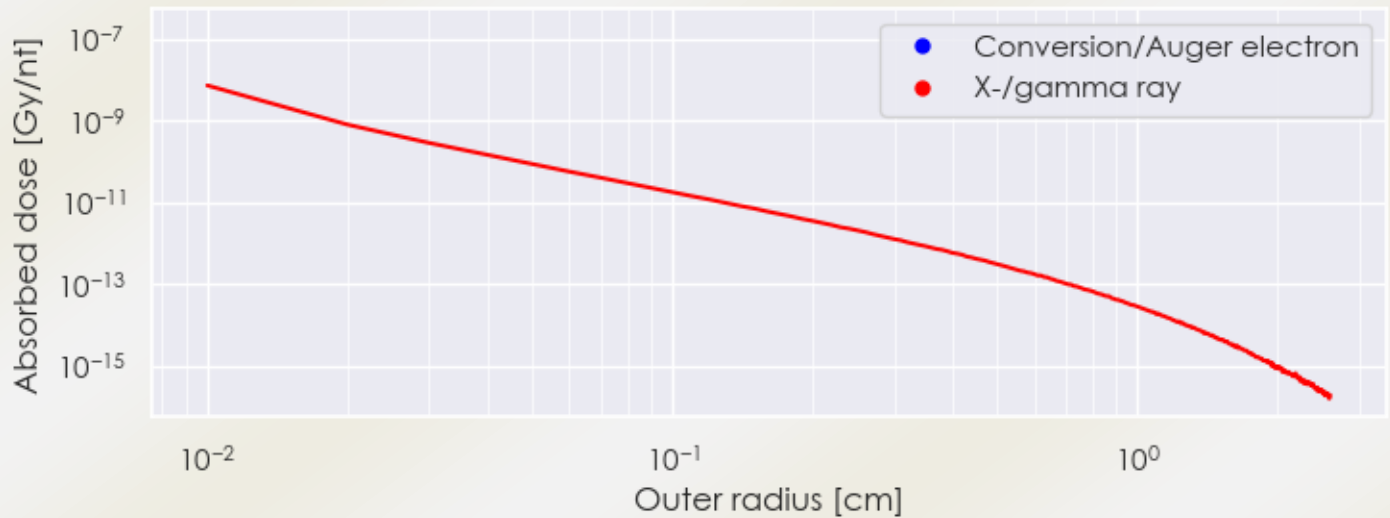
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 8.572×10^{-16} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.263×10^{-15} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

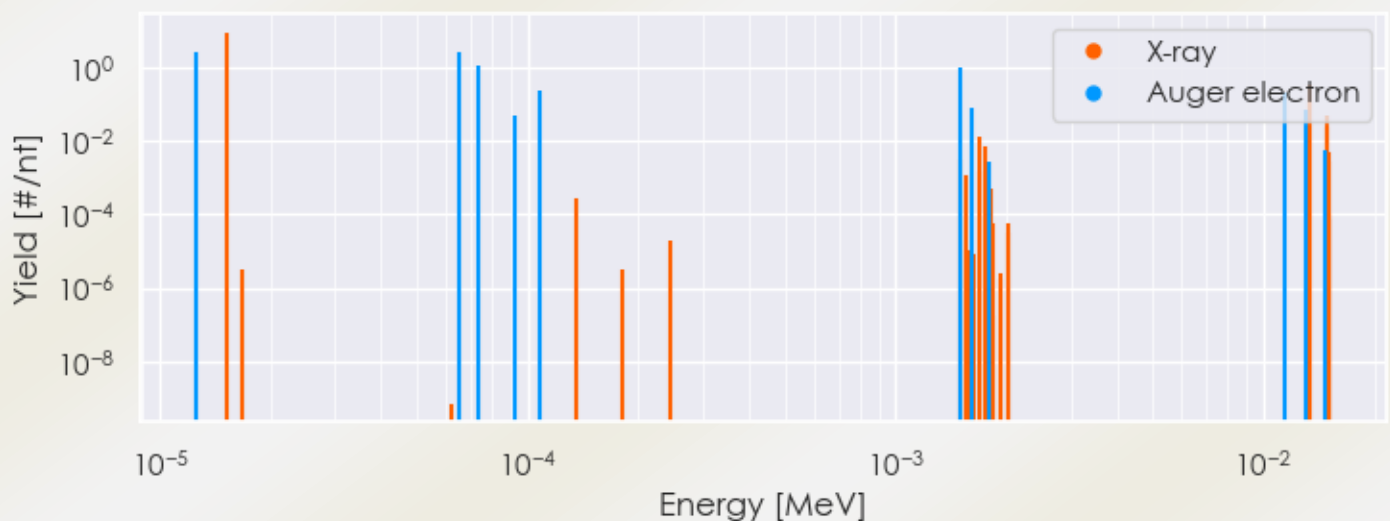
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Sr-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/Sr-82 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/Sr-82 Summary Spectrum.csv

Energy [MeV]	Yield [# /n _t] if > 0.01	Radiation type
1.52761e-05	9.002e+00	X-ray
1.68753e-03	1.333e-02	X-ray
1.32919e-02	1.674e-01	X-ray
1.33539e-02	3.220e-01	X-ray
1.49123e-02	2.400e-02	X-ray
1.49217e-02	4.678e-02	X-ray
1.26043e-05	2.640e+00	Auger electron
6.50274e-05	2.644e+00	Auger electron
7.35295e-05	1.067e+00	Auger electron
9.23238e-05	4.712e-02	Auger electron
1.07514e-04	2.247e-01	Auger electron
1.49002e-03	9.934e-01	Auger electron
1.61204e-03	8.055e-02	Auger electron
1.14024e-02	2.134e-01	Auger electron
1.30522e-02	7.003e-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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6