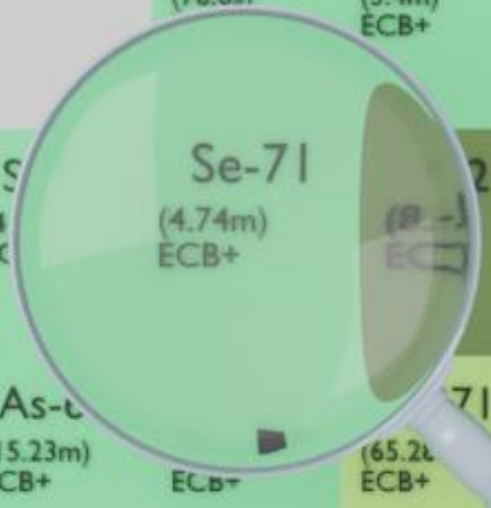




Se-70 (78.6s) ECB+	Se-71 (4.74m) ECB+	Se-72 (3.4m) ECB+	Se-73 (25.4m) ECB+	Se-74 (96.7m) ECB+	Se-75 (16.2h) ECB+
As-68 (151.6s) ECB+	As-69 (4.0s) EC	As-70 (15.23m) ECB+	As-71 (65.2s) ECB+	As-72 (26.0h) ECB+	As-73 (80.30d) EC
As-74 (17.77d) ECB+B-	As-75 (119.779d) EC	As-76 (1.02m) ECB+	As-77 (38.0s) ECB+	As-78 (2.23m) ECB+	As-79 (1.76m) ECB+

SELENIUM-71

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Se-71
Atomic number (Z): 34
Mass number (A): 71
Neutron number (N): 37

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 4.74 [m]
Decay constant: $2.4372\text{e-}03$ [1/s]
Daughters: As-71 (100.0%)
Radioactive daughters: As-71

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.38435 [MeV]
Mean photon energy: 1.60563 [MeV]
Air kerma rate constant, Γ_{10} : $2.318\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $6.026\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $2.218\text{e-}13$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [Gy $\cdot$ kg/Bq $\cdot$ s]

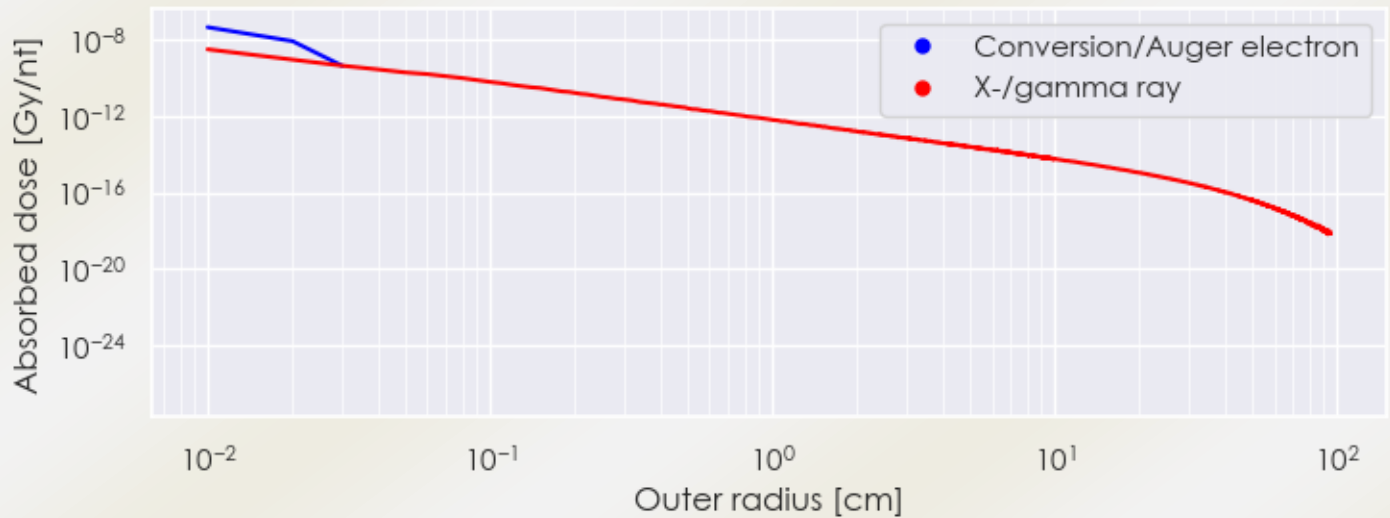
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta^+, e^-}$: 2.218×10^{-13} [Gy · kg/Bq · s]

Equilibrium dose constant for photons, Δ_p : 2.573×10^{-13} [Gy · kg/Bq · s]

DOSE POINT KERNELS (PLOT)

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

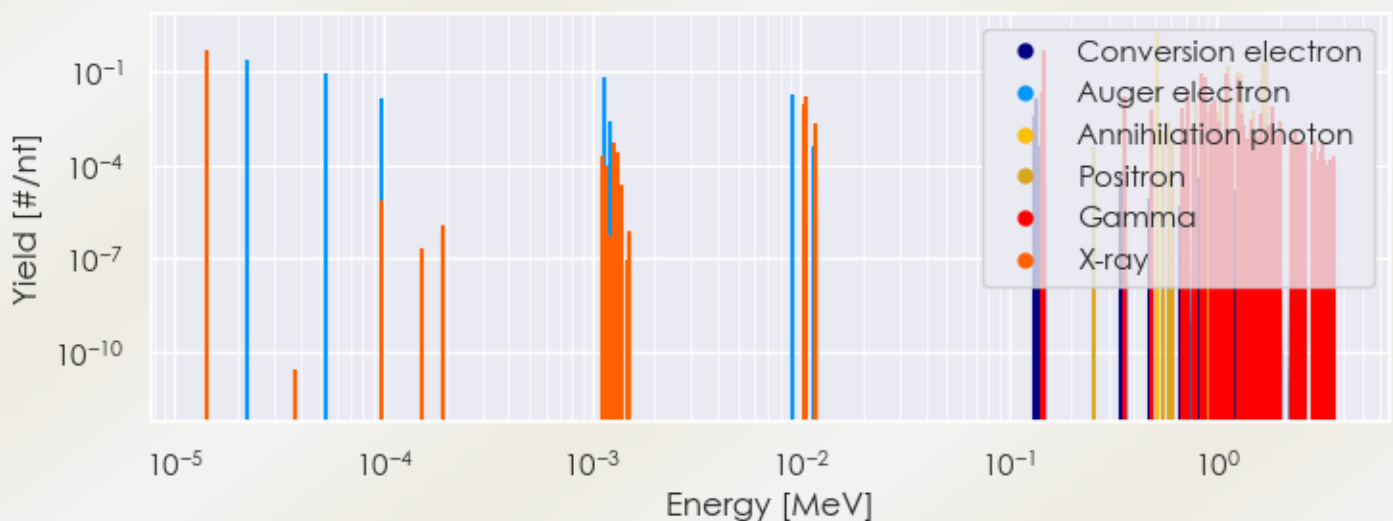
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Se-71 DPK.csv

SUMMARY SPECTRA (PLOT)

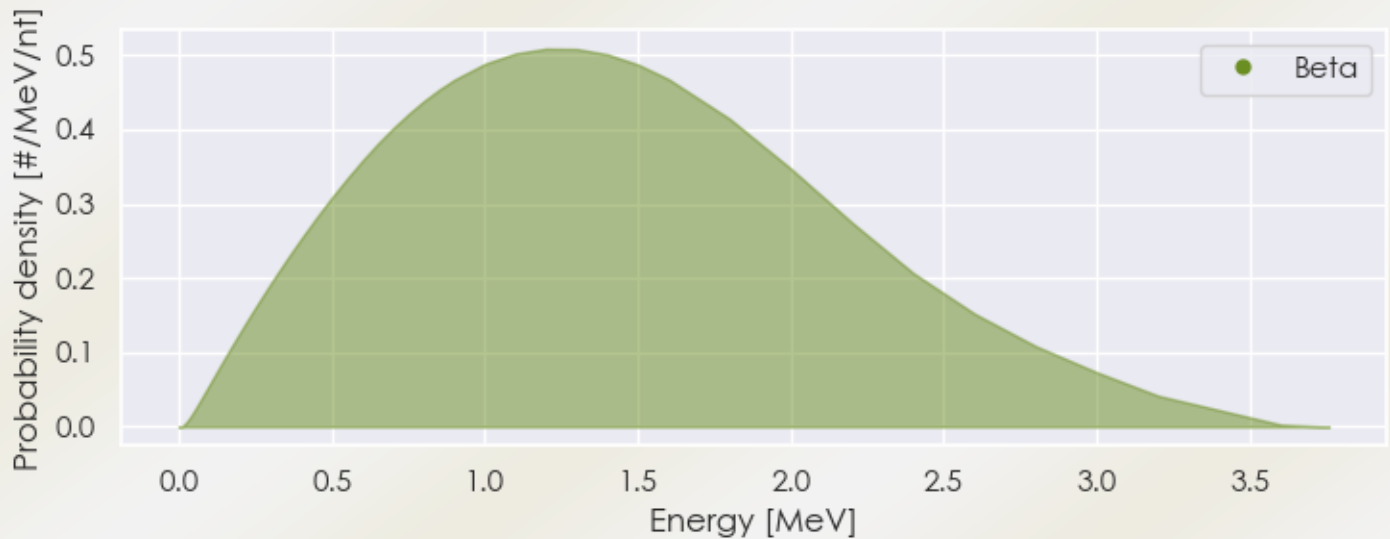
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Se-71 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/Se-71 Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Se-71%20Beta%20Spectrum.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/Se-71 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Se-71%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.42084e-05	4.929e-01	X-ray
1.05007e-02	1.773e-02	X-ray
1.43200e-01	2.280e-02	Gamma
1.47500e-01	4.750e-01	Gamma
3.58800e-01	1.758e-02	Gamma
5.11000e-01	1.916e+00	Annihilation photon
7.22900e-01	2.612e-02	Gamma
8.30330e-01	9.738e-02	Gamma
8.42990e-01	1.140e-02	Gamma
8.70300e-01	6.603e-02	Gamma

9.77850e-01	1.216e-02	Gamma
1.09526e+00	9.832e-02	Gamma
1.09882e+00	1.378e-02	Gamma
1.24259e+00	7.196e-02	Gamma
7.82052e-01	1.087e-02	Positron
1.03092e+00	1.416e-02	Positron
1.12463e+00	1.716e-01	Positron
1.24312e+00	2.434e-02	Positron
1.24910e+00	1.057e-01	Positron
1.29989e+00	8.878e-02	Positron
1.64382e+00	1.965e-01	Positron
1.71444e+00	2.993e-01	Positron
2.23273e-05	2.324e-01	Auger electron
5.24626e-05	8.562e-02	Auger electron
9.85339e-05	1.410e-02	Auger electron
1.15643e-03	7.182e-02	Auger electron
9.06608e-03	1.860e-02	Auger electron
1.35671e-01	1.355e-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