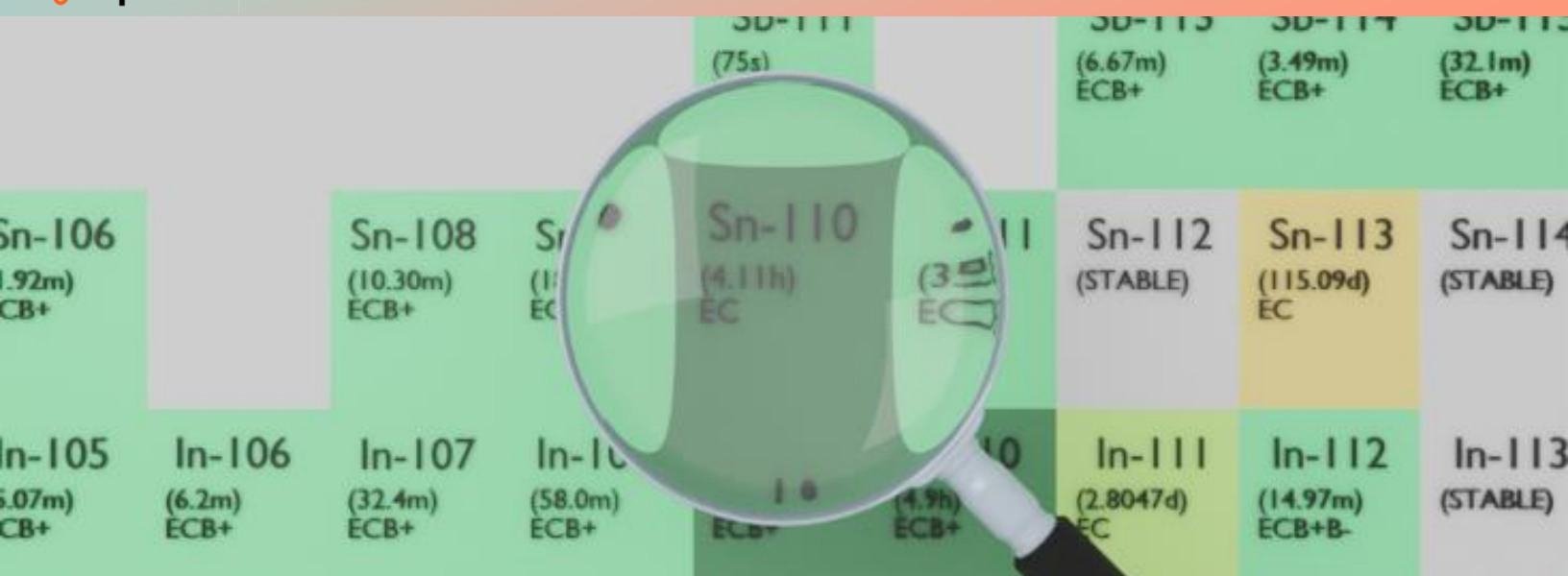




TIN-110

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sn-110
Atomic number (Z): 50
Mass number (A): 110
Neutron number (N): 60

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 4.11 [h]
Decay constant: 4.6847×10^{-5} [1/s]
Daughters: In-110m (100.0%)
Radioactive daughters: In-110m

DOSIMETRIC CONSTANTS

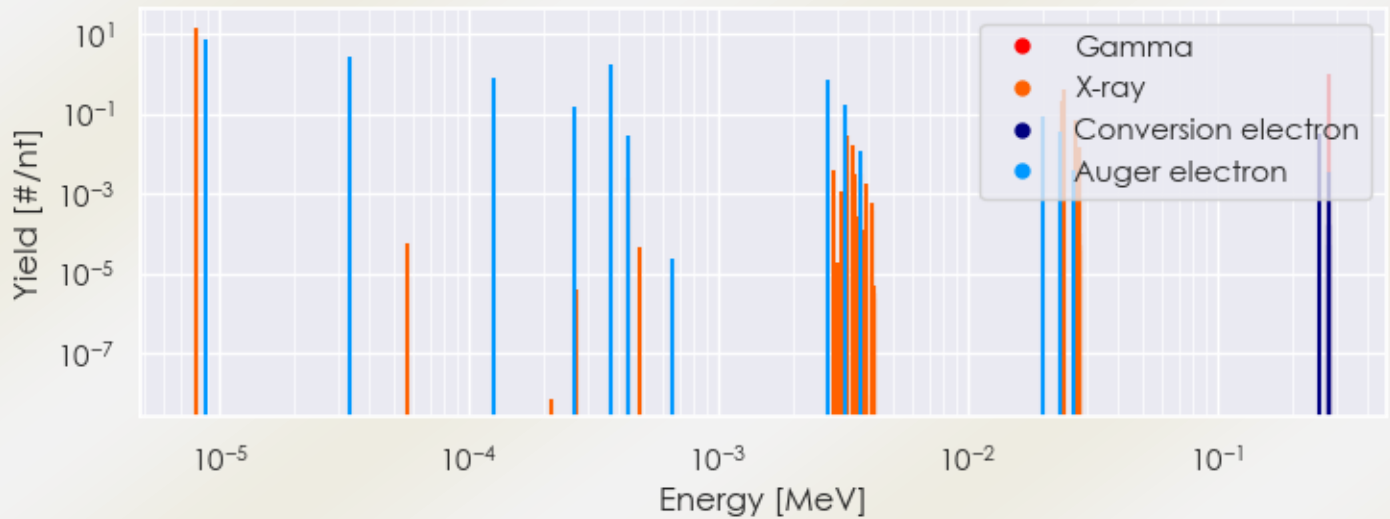
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.01517 [MeV]
Mean photon energy: 0.2918 [MeV]
Air kerma rate constant, Γ_{10} : 1.649×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 1.649×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.431×10^{-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, $\Delta_{\beta,\beta^+,e^-}$: 2.431e-15 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.675e-14 [Gy·kg/Bq·s]

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/Sn-110 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Sn-110%20Summary%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/Sn-110 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Sn-110%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# /nt] if > 0.01	Radiation type
8.12544e-06	1.460e+01	X-ray
3.27540e-03	2.916e-02	X-ray
3.48147e-03	1.655e-02	X-ray
2.39785e-02	2.135e-01	X-ray
2.41926e-02	4.005e-01	X-ray
2.72214e-02	3.574e-02	X-ray

2.72603e-02	6.938e-02	X-ray
2.78371e-02	1.420e-02	X-ray
2.83000e-01	9.653e-01	Gamma
8.85970e-06	7.239e+00	Auger electron
3.35152e-05	2.550e+00	Auger electron
1.25535e-04	7.959e-01	Auger electron
2.66201e-04	1.455e-01	Auger electron
3.70997e-04	1.785e+00	Auger electron
4.37593e-04	2.940e-02	Auger electron
2.73648e-03	7.068e-01	Auger electron
3.21716e-03	1.729e-01	Auger electron
3.71670e-03	1.102e-02	Auger electron
2.00957e-02	8.724e-02	Auger electron
2.34091e-02	3.652e-02	Auger electron
2.55079e-01	3.014e-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