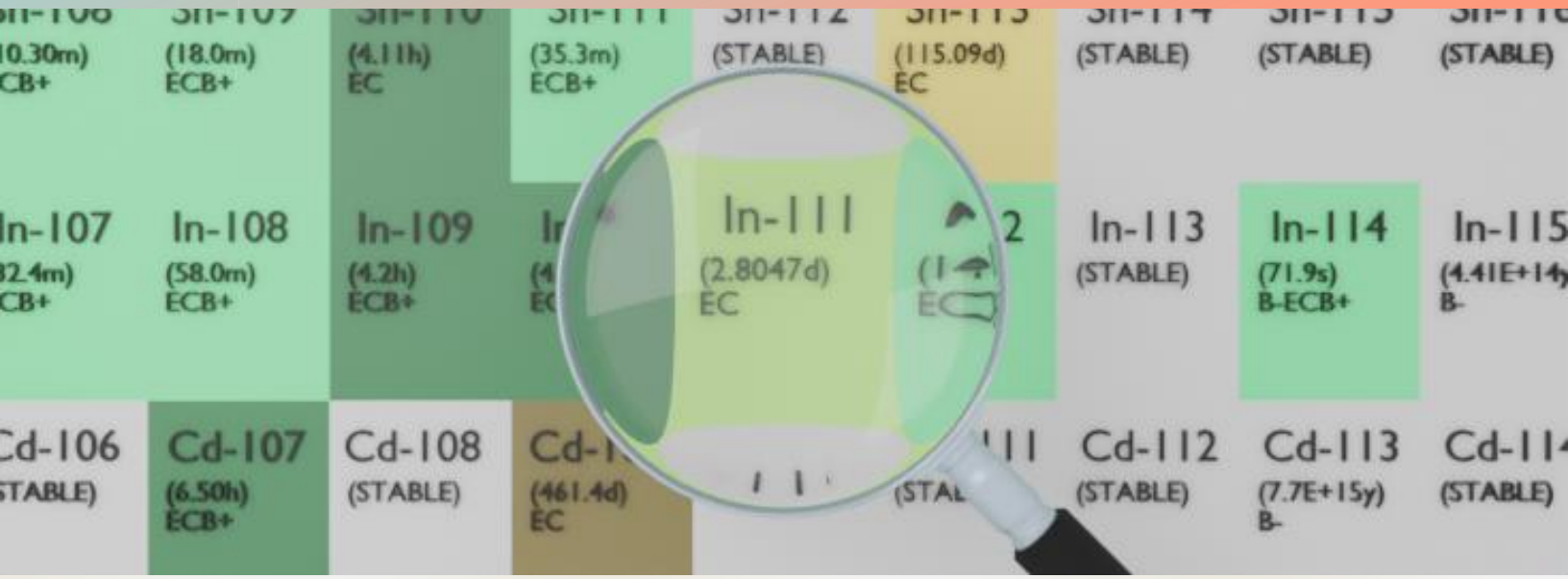


INDIUM-111

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: In-111
Atomic number (Z): 49
Mass number (A): 111
Neutron number (N): 62

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 2.805 [d]
Decay constant: 2.8604e-06 [1/s]
Daughters: Cd-111m (0.005%), Cd-111 (100.0%)
Radioactive daughters: Cd-111m

DOSIMETRIC CONSTANTS

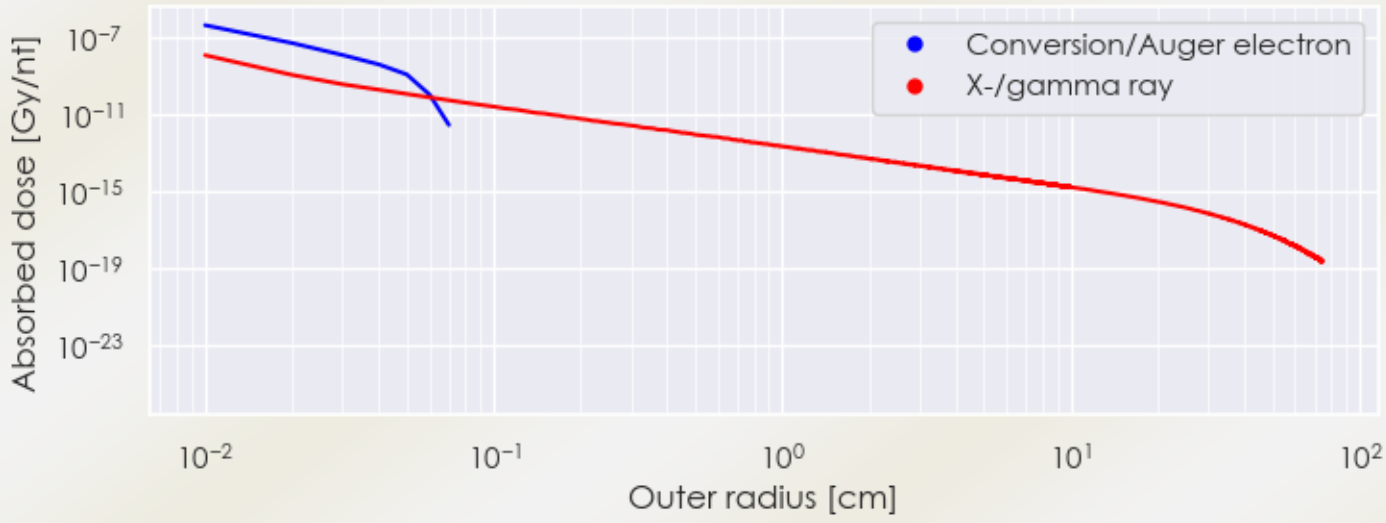
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.03481 [MeV]
Mean photon energy: 0.40611 [MeV]
Air kerma rate constant, Γ_{10}: 2.137e-17 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 2.137e-17 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 5.577e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 5.577e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 6.507e-14 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

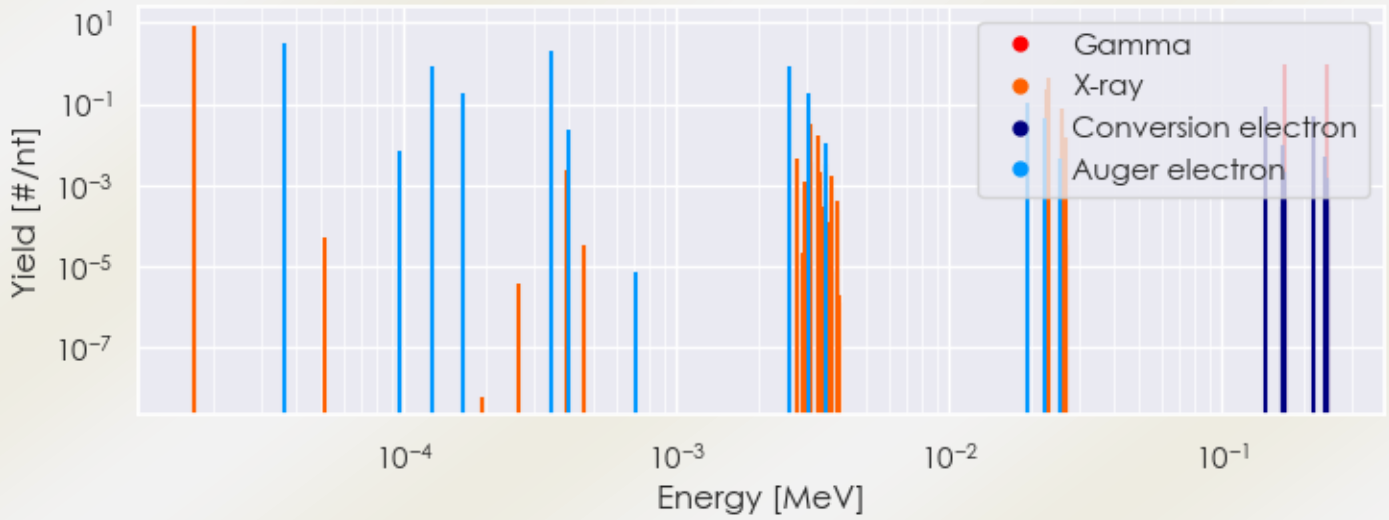
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/In-111 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/In-111 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/In-111 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.71473e-05	8.595e+00	X-ray
3.12254e-03	3.306e-02	X-ray
3.31083e-03	1.688e-02	X-ray
2.29571e-02	2.396e-01	X-ray
2.31527e-02	4.503e-01	X-ray
2.60401e-02	3.973e-02	X-ray
2.60753e-02	7.718e-02	X-ray
2.66158e-02	1.569e-02	X-ray
1.71280e-01	9.065e-01	Gamma
2.45350e-01	9.409e-01	Gamma
3.67731e-05	3.037e+00	Auger electron
1.28035e-04	8.856e-01	Auger electron
1.66171e-04	1.903e-01	Auger electron
3.45374e-04	2.117e+00	Auger electron
4.03240e-04	2.411e-02	Auger electron
2.61076e-03	8.158e-01	Auger electron
3.05389e-03	1.878e-01	Auger electron
3.51504e-03	1.138e-02	Auger electron
1.92752e-02	1.063e-01	Auger electron
2.24238e-02	4.374e-02	Auger electron
1.44592e-01	8.509e-02	Conversion electron
2.18662e-01	5.041e-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