



Sn-108 (10.30m) CB+	Sn-107 (18.0m) ECB+	Sn-110 (4.11h) EC	Sn-111 (35.3m) ECB+	Sn-112 (STABLE)	Sn-113 (115.09d) EC	Sn-114 (STABLE)	Sn-115 (STABLE)	Sn-116 (STABLE)
In-107 (32.4m) CB+	In-108 (58.0m) ECB+	In-109 (4.2h) ECB+	In-110 (4.8h) EC	In-111m (7.7m) IT	In-111 (1.1h) EC	In-113 (STABLE)	In-114 (71.9s) B-ECB+	In-115 (4.41E+14y) B-
Cd-106 (STABLE)	Cd-107 (6.50h) ECB+	Cd-108 (STABLE)	Cd-109 (461.4d) EC	Cd-110 (1.1h) EC	Cd-111 (STABLE)	Cd-112 (STABLE)	Cd-113 (7.7E+15y) B-	Cd-114 (STABLE)

INDIUM-111M

SUMMARY DATA

GENERAL

CLASSIFICATION

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

RADIOACTIVE DECAY

Decay modes: Internal transition
Half-life: 7.7 [m]
Decay constant: $1.5003\text{e-}03$ [1/s]
Daughters: In-111 (100.0%)
Radioactive daughters: In-111

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.06745 [MeV]
Mean photon energy: 0.47056 [MeV]
Air kerma rate constant, Γ_{10} : $1.854\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Air kerma coefficient, K_{air} : $1.854\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $1.081\text{e-}14$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

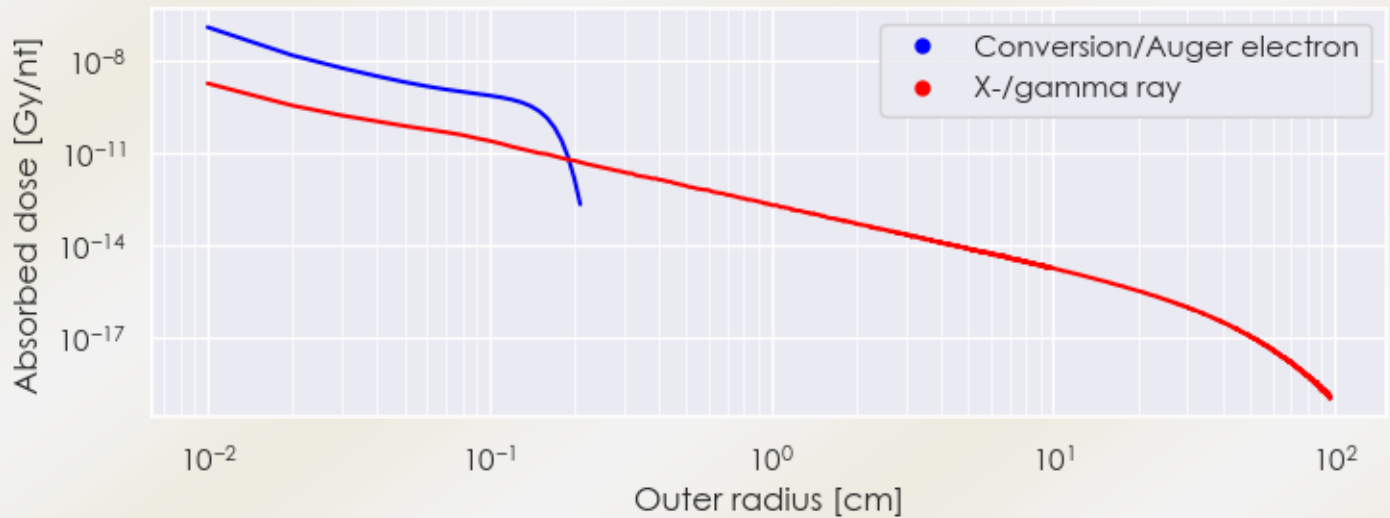
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 1.081×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 7.539×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

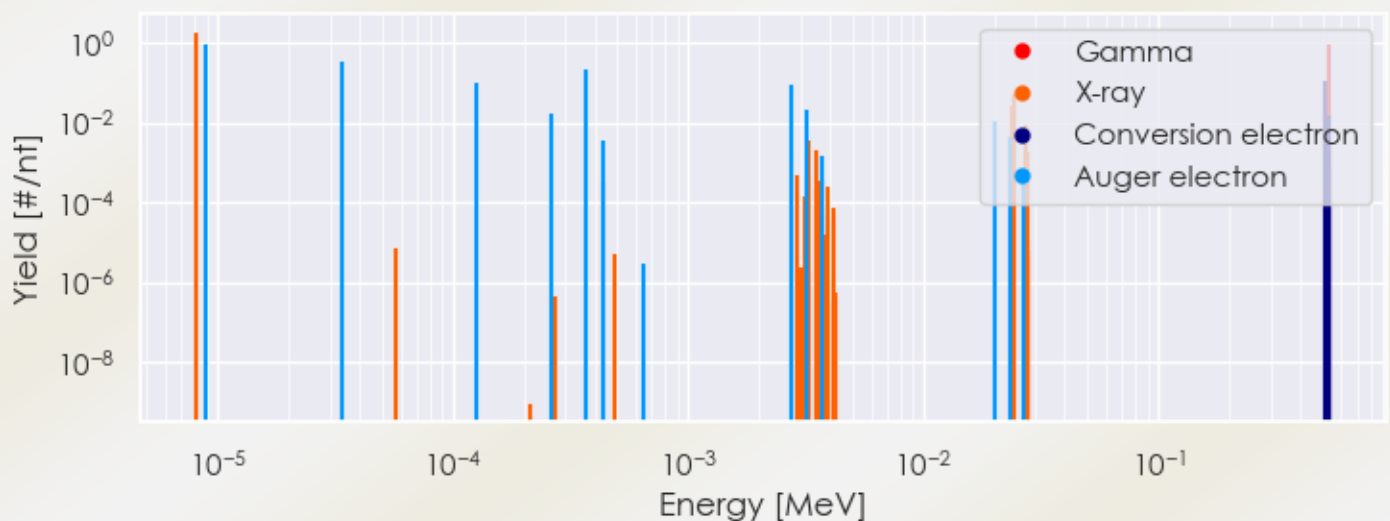
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/In-111m 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-111m 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-111m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/In-111m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / n _t] if > 0.01	Radiation type
8.12556e-06	1.823e+00	X-ray
2.39785e-02	2.632e-02	X-ray
2.41926e-02	4.937e-02	X-ray
5.37000e-01	8.720e-01	Gamma
8.85853e-06	9.041e-01	Auger electron
3.35300e-05	3.177e-01	Auger electron
1.25769e-04	9.896e-02	Auger electron
2.62421e-04	1.747e-02	Auger electron
3.70839e-04	2.238e-01	Auger electron
2.73478e-03	8.867e-02	Auger electron
3.21510e-03	2.168e-02	Auger electron
2.00957e-02	1.075e-02	Auger electron
5.09079e-01	1.071e-01	Conversion electron
5.32786e-01	1.451e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6