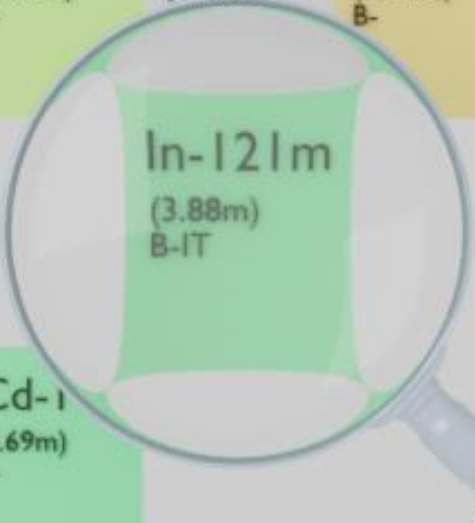




Sn-116 (STABLE)	Sn-117 (STABLE)	Sn-118 (STABLE)	Sn-119 (27.03h) B-	Sn-120 (STABLE)	Sn-121 (129.2d) B-	Sn-122 (STABLE)	Sn-123 (9.64d) B-	Sn-124 (2.30E+5y) B-
In-113 (4.2m)	In-114 (5.0s) B-	In-115 (2.4m) B-	In-116m (3.88m) B-IT	In-117 (2.49h) B-	In-118 (50.3m) B-	In-119 (2.69m) B-	In-120 (2.30E+5y) B-	In-121 (2.30E+5y) B-
Cd-110 (5.0m)	Cd-111 (8.4m) B-	Cd-112 (14.9m) B-	Cd-113 (1.3m) B-	Cd-114 (1.26m) B-	Cd-115 (13.5m) B-	Cd-116 (0.5m) B-	Cd-117 (4.06m) B-	Cd-118 (2.6m) B-

INDIUM-121M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: In-121m
Atomic number (Z): 49
Mass number (A): 121
Neutron number (N): 72

RADIOACTIVE DECAY

Decay modes: β^- , Internal transition
Half-life: 3.88 [m]
Decay constant: 2.9774×10^{-3} [1/s]
Daughters: Sn-121 (98.8%), In-121 (1.2%)
Radioactive daughters: Sn-121, In-121

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.52876 [MeV]
Mean photon energy: 0.06346 [MeV]
Air kerma rate constant, Γ_{10} : 4.893×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 4.893×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.449×10^{-13} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

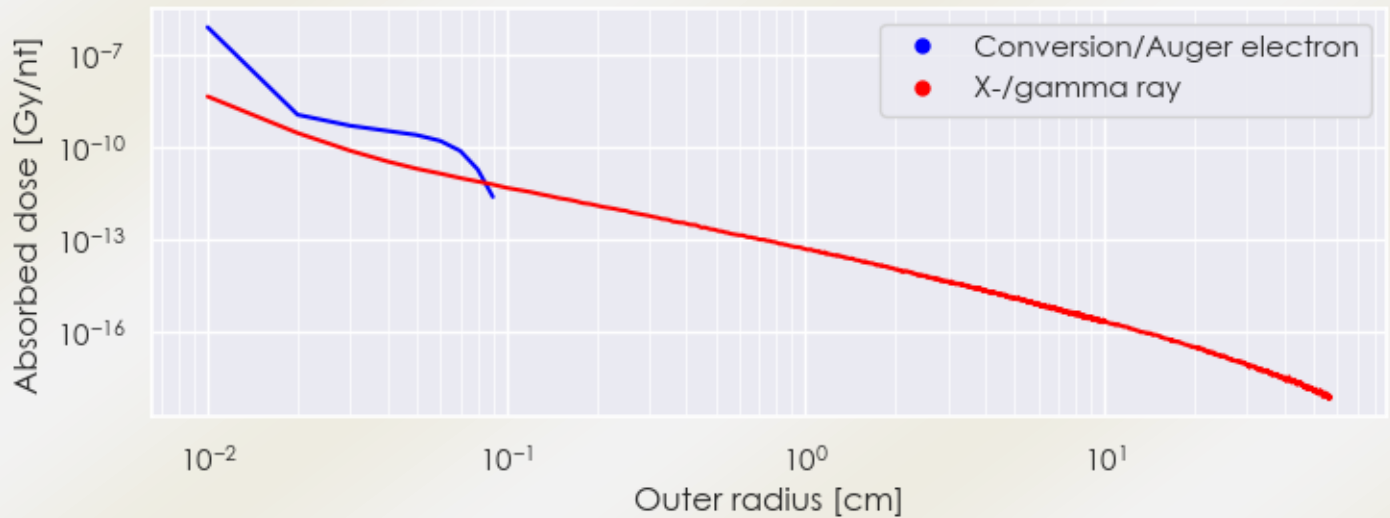
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta^+, e^-}$: 2.449×10^{-13} [Gy · kg/Bq · s]

Equilibrium dose constant for photons, Δ_p : 1.017×10^{-14} [Gy · kg/Bq · s]

DOSE POINT KERNELS (PLOT)

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

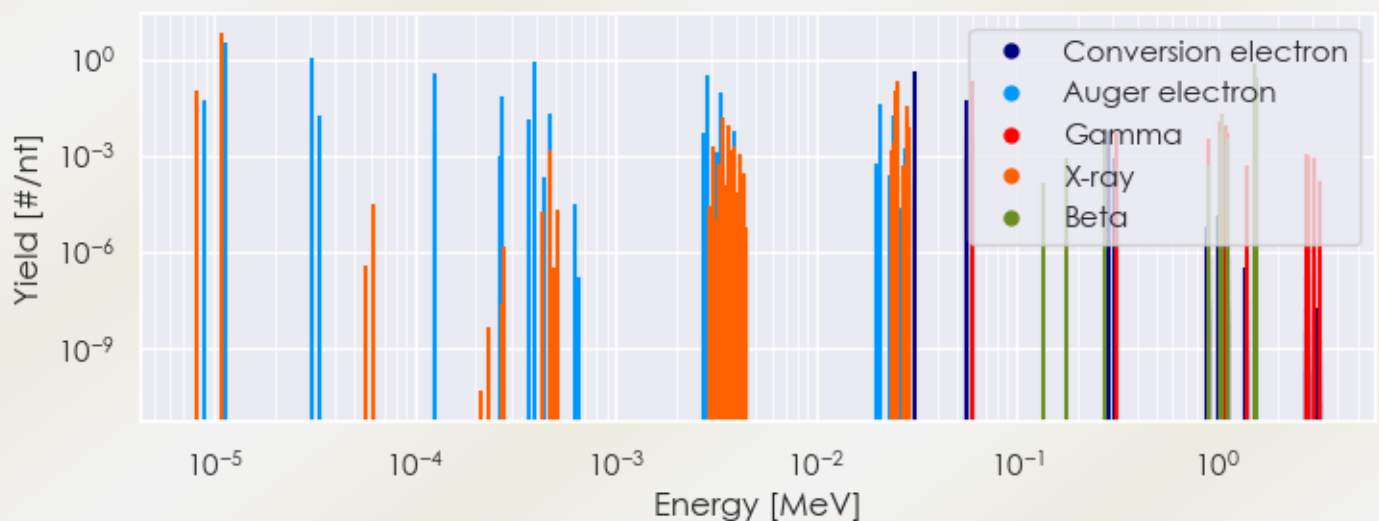
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/In-121m DPK.csv

SUMMARY SPECTRA (PLOT)

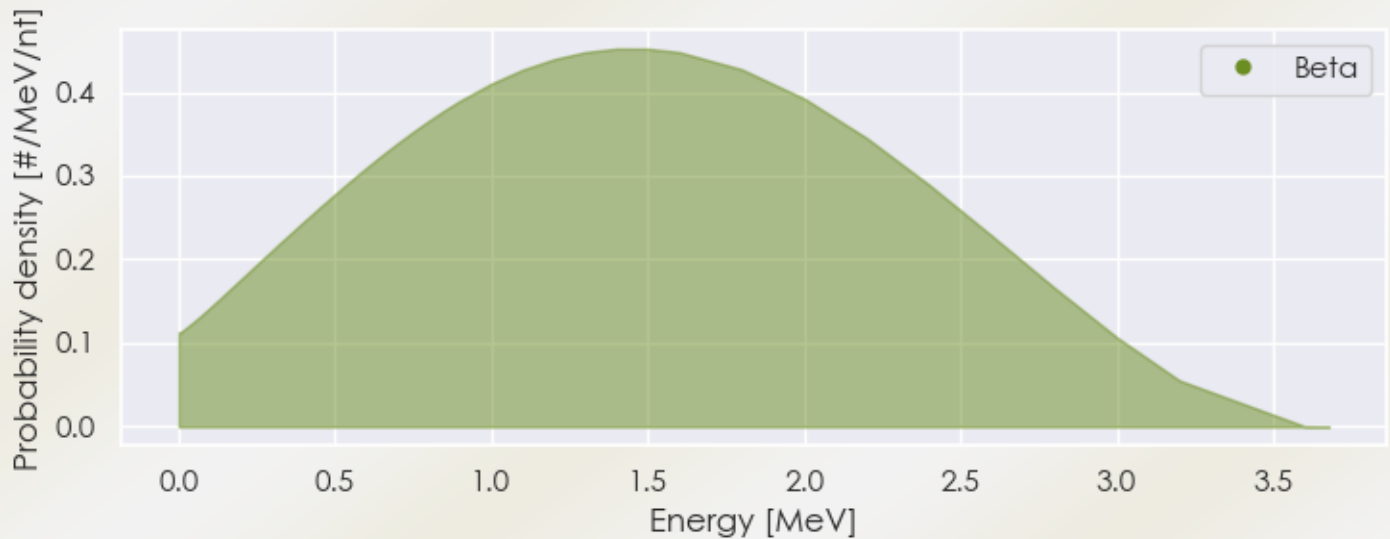
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/In-121m 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/In-121m Beta 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-121m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
8.12533e-06	1.012e-01	X-ray
1.08542e-05	6.811e+00	X-ray
3.43219e-03	1.516e-02	X-ray
2.50232e-02	1.068e-01	X-ray
2.52572e-02	1.998e-01	X-ray
2.84307e-02	1.802e-02	X-ray
2.84736e-02	3.499e-02	X-ray
6.01000e-02	2.016e-01	Gamma
1.04120e+00	1.109e-02	Gamma

1.04824e+00	1.992e-02	Beta
1.53536e+00	6.971e-01	Beta
1.56372e+00	2.589e-01	Beta
8.85919e-06	5.019e-02	Auger electron
1.13303e-05	3.368e+00	Auger electron
3.03730e-05	1.157e+00	Auger electron
3.35243e-05	1.765e-02	Auger electron
1.24040e-04	3.730e-01	Auger electron
2.69839e-04	6.530e-02	Auger electron
3.70901e-04	1.240e-02	Auger electron
3.96189e-04	8.452e-01	Auger electron
4.69765e-04	1.924e-02	Auger electron
2.84762e-03	3.339e-01	Auger electron
3.36428e-03	8.604e-02	Auger electron
2.09334e-02	4.026e-02	Auger electron
2.44171e-02	1.714e-02	Auger electron
3.09160e-02	4.302e-01	Conversion electron
5.56597e-02	5.078e-02	Conversion electron
5.93897e-02	1.096e-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