

Cd-108 (STABLE)	Cd-109 (461.4d) EC	Cd-110 (STABLE)	Cd-111 (STABLE)	Cd-112 (STABLE)	Cd-113 (7.7E+15y) B-	Cd-114 (STABLE)	Cd-115 (53.46h) B-	
Ag-107 (STABLE)	Ag-108 (2.37m) B-ECB+	Ag-109 (STABLE)	Ag-110 (2.27m) B-	Ag-111m (64.8s) ITB-	Ag-112 (3.2m) B-	Ag-113 (5.37h) B-	Ag-114 (4.6s) B-	Ag-115 (20.0m) B-
Pd-106 (STABLE)	Pd-107 (6.5E+6y) B-	Pd-108 (STABLE)	Pd-109 (13.7012h) B-	Pd-110 (2.27m) B-	Pd-111 (23.4d) B-	Pd-112 (21.03h) B-	Pd-113 (17.0d) B-	Pd-114 (2.42m) B-

SILVER-111M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Ag-111m
Atomic number (Z): 47
Mass number (A): 111
Neutron number (N): 64

RADIOACTIVE DECAY

Decay modes: β^- , Internal transition
Half-life: 64.8 [s]
Decay constant: 1.0697e-02 [1/s]
Daughters: Ag-111 (99.3%), Cd-111 (0.7%)
Radioactive daughters: Ag-111

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.05677 [MeV]
Mean photon energy: 0.00786 [MeV]
Air kerma rate constant, Γ_{10} : 2.108e-18 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 2.108e-18 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 9.096e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

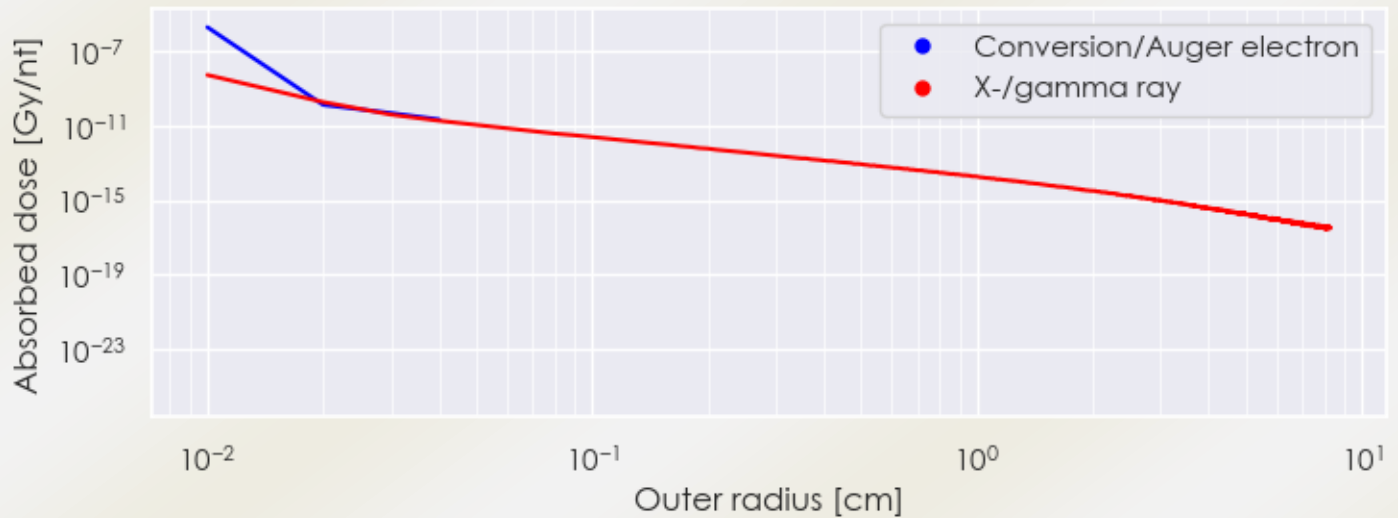
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta+, e-}$: 9.096×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.259×10^{-15} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

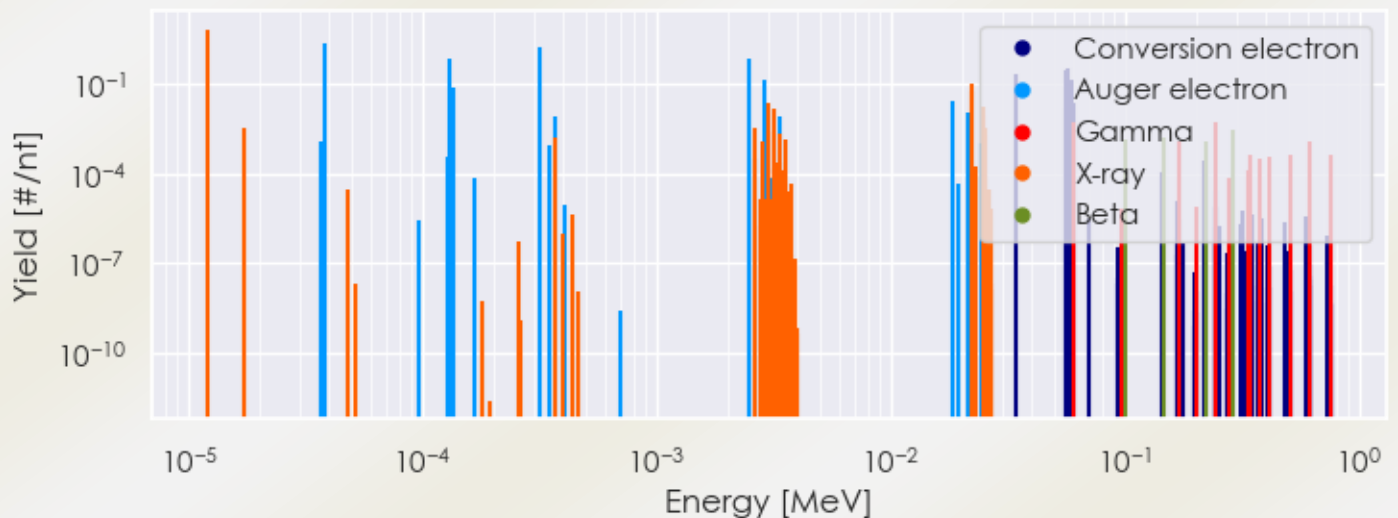
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Ag-111m DPK.csv

SUMMARY SPECTRA (PLOT)

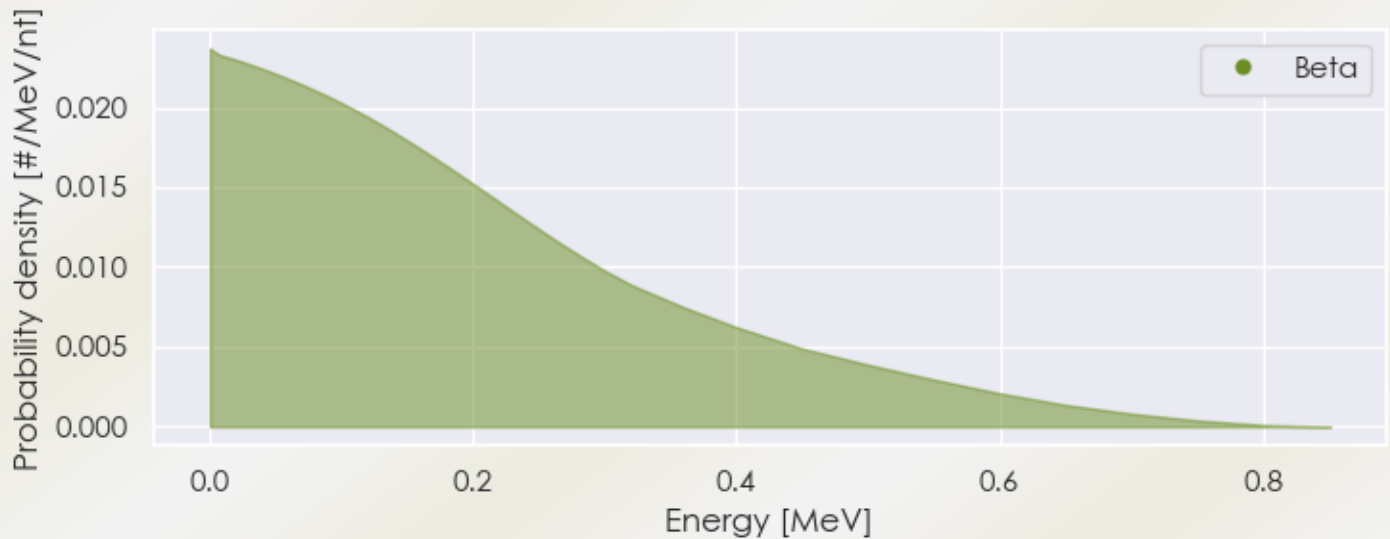
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Ag-111m 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/Ag-111m 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/Ag-111m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.20811e-05	6.651e+00	X-ray
2.97344e-03	2.284e-02	X-ray
3.14510e-03	1.577e-02	X-ray
2.19609e-02	5.334e-02	X-ray
2.21389e-02	1.005e-01	X-ray
2.49204e-02	1.703e-02	X-ray
3.79190e-05	2.414e+00	Auger electron
1.29117e-04	6.866e-01	Auger electron
1.34135e-04	7.802e-02	Auger electron

3.18815e-04	1.641e+00	Auger electron
2.49622e-03	6.415e-01	Auger electron
2.90301e-03	1.389e-01	Auger electron
1.84718e-02	2.578e-02	Auger electron
2.14605e-02	1.042e-02	Auger electron
3.42810e-02	2.223e-01	Conversion electron
5.59866e-02	1.526e-02	Conversion electron
5.62419e-02	2.662e-01	Conversion electron
5.64200e-02	3.413e-01	Conversion electron
5.92015e-02	1.302e-01	Conversion electron
5.97700e-02	2.235e-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