

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 (2.2m) B-	Ag-111 (7.45d) B-	Ag-112 (3.8m) 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 (3.6m) B-	Pd-111 (23.4h) B-	Pd-112 (21.03h) B-	Pd-113 (17.4d) B-	Pd-114 (2.42m) B-

SILVER-111

SUMMARY DATA

GENERAL

CLASSIFICATION

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

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 7.45 [d]
Decay constant: 1.0769×10^{-6} [1/s]
Daughters: Cd-111 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.35388 [MeV]
Mean photon energy: 0.02648 [MeV]
Air kerma rate constant, Γ_{10} : 9.959×10^{-19} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 9.959×10^{-19} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 5.670×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

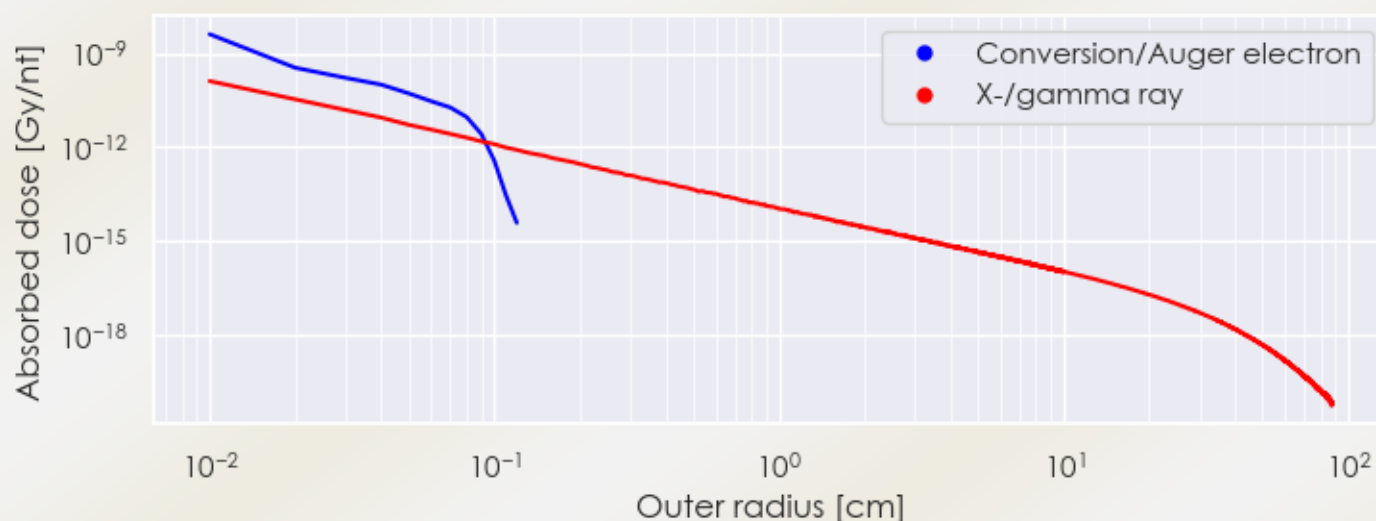
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 5.670e-14 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.243e-15 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

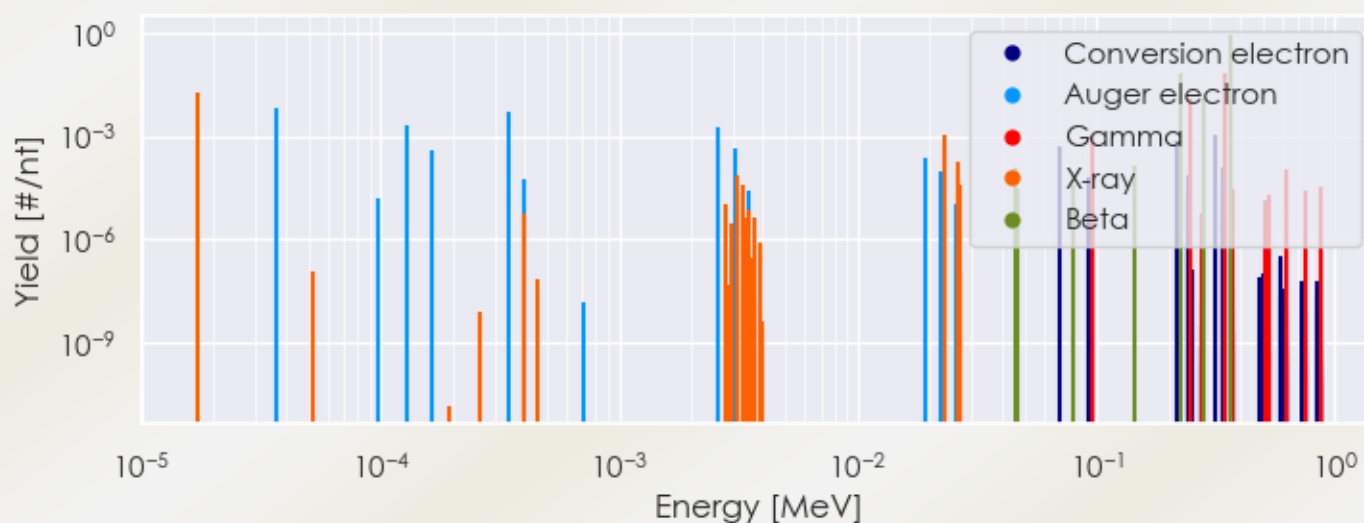
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



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

SUMMARY SPECTRA (PLOT)

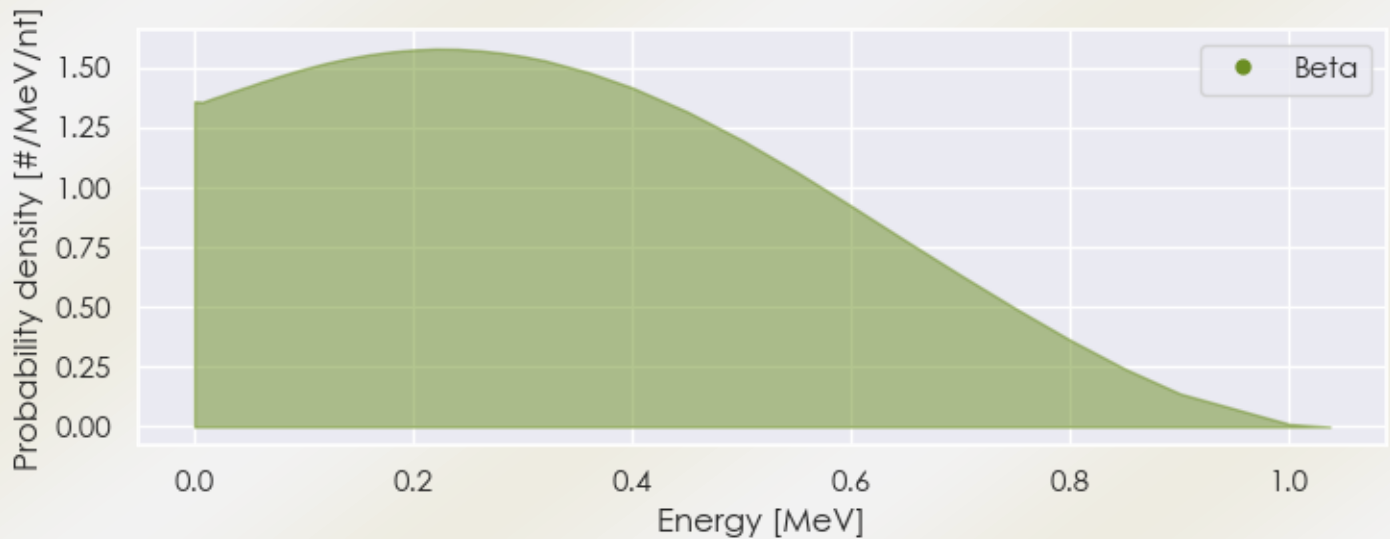
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



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

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.71483e-05	1.964e-02	X-ray
2.45400e-01	1.329e-02	Gamma
3.42130e-01	6.680e-02	Gamma
2.26823e-01	6.996e-02	Beta
2.82240e-01	1.229e-02	Beta
3.63938e-01	9.174e-01	Beta

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