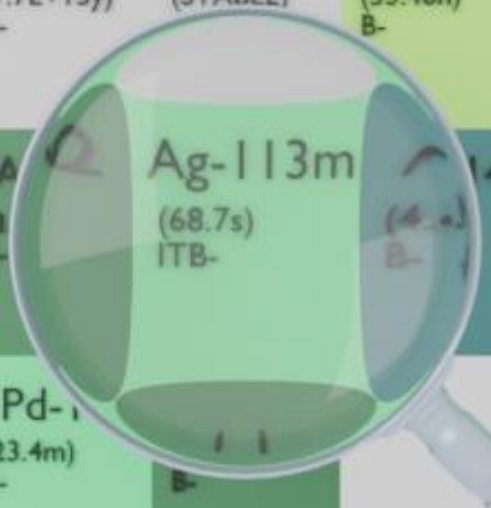




Ag-109 (STABLE)	Ag-110 (24.6s) B-EC	Ag-111 (7.45d) B-	Ag-112 (7.7E+15y) B-	Ag-113 (53.46h) B-	Ag-114 (2.19h) B-	Ag-115 (50.3m) B-
Pd-108 (STABLE)	Pd-109 (13.7012h) B-	Pd-110 (STABLE)	Pd-111 (23.4m) B-	Pd-112 (68.7s) ITB-	Pd-113 (4.8s) B-	Pd-114 (2.42m) B-

SILVER-113M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Ag-113m
Atomic number (Z): 47
Mass number (A): 113
Neutron number (N): 66

RADIOACTIVE DECAY

Decay modes: β^- , Internal transition
Half-life: 68.7 [s]
Decay constant: 1.0089e-02 [1/s]
Daughters: Ag-113 (64.0%), Cd-113 (36.0%)
Radioactive daughters: Ag-113, Cd-113

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.22779 [MeV]
Mean photon energy: 0.2134 [MeV]
Air kerma rate constant, Γ_{10} : 8.599e-18 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 8.599e-18 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 3.650e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

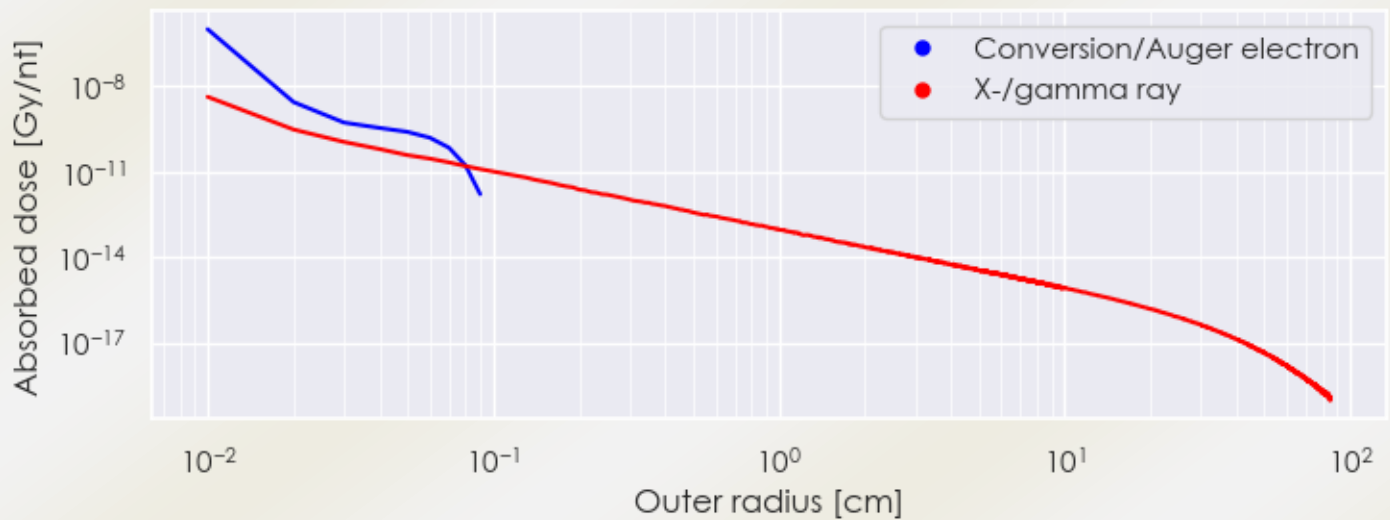
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta^+, e^-}$: 3.650×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 3.419×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

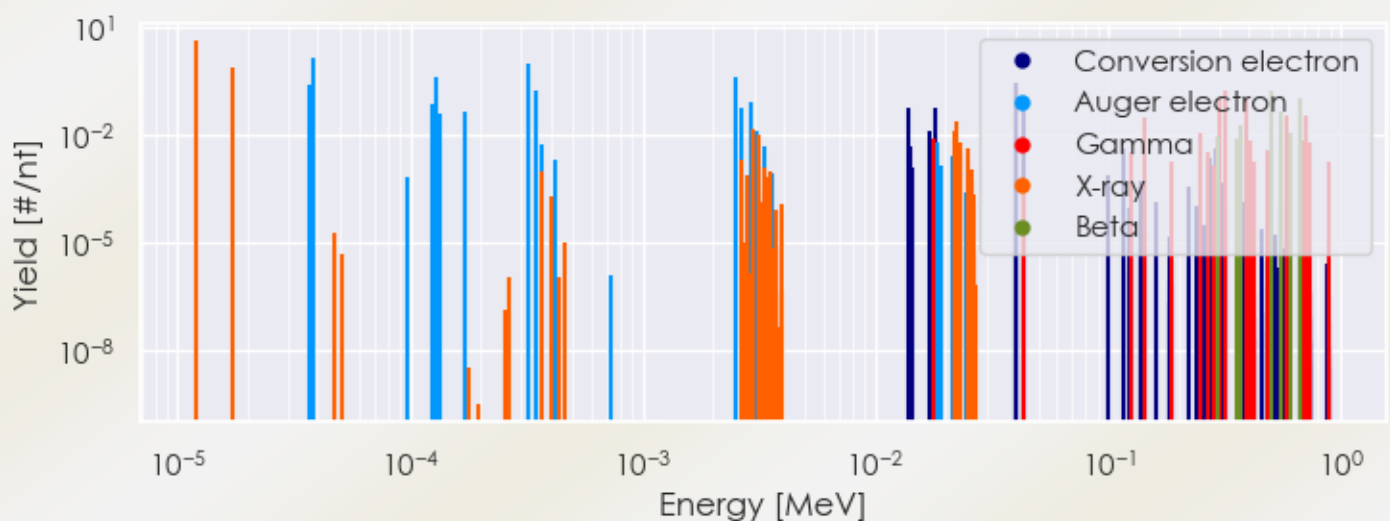
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Ag-113m DPK.csv

SUMMARY SPECTRA (PLOT)

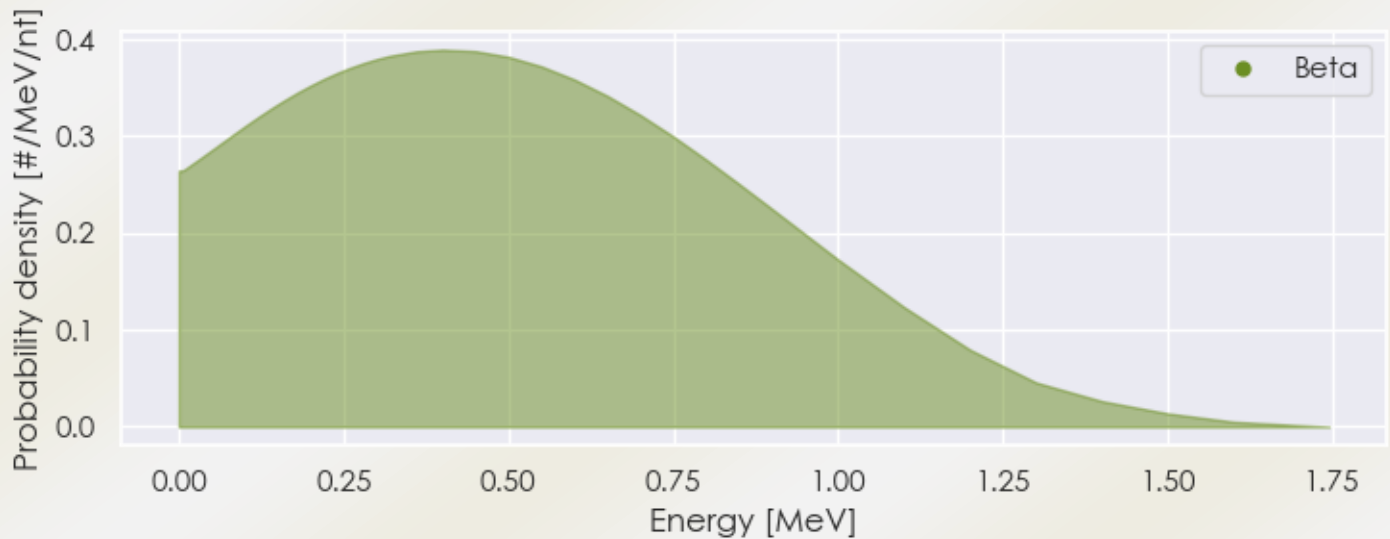
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Ag-113m 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-113m 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-113m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.20814e-05	4.132e+00	X-ray
1.71311e-05	7.270e-01	X-ray
2.97344e-03	1.422e-02	X-ray
2.19609e-02	1.354e-02	X-ray
2.21389e-02	2.551e-02	X-ray
1.42200e-01	2.911e-02	Gamma
2.49900e-01	1.111e-02	Gamma
2.98300e-01	1.014e-01	Gamma
3.16100e-01	1.764e-01	Gamma

3.92300e-01	1.111e-01	Gamma
5.83800e-01	3.616e-02	Gamma
7.08300e-01	3.528e-02	Gamma
3.70833e-01	1.816e-02	Beta
4.97912e-01	1.632e-01	Beta
5.52205e-01	4.401e-02	Beta
6.07614e-01	1.100e-02	Beta
6.71028e-01	1.064e-01	Beta
3.65083e-05	2.648e-01	Auger electron
3.79325e-05	1.499e+00	Auger electron
1.23815e-04	7.660e-02	Auger electron
1.29389e-04	4.283e-01	Auger electron
1.33849e-04	4.000e-02	Auger electron
1.73105e-04	4.336e-02	Auger electron
3.18784e-04	1.020e+00	Auger electron
3.47682e-04	1.694e-01	Auger electron
2.49529e-03	3.993e-01	Auger electron
2.65793e-03	5.869e-02	Auger electron
2.90181e-03	8.644e-02	Auger electron
3.11035e-03	1.370e-02	Auger electron
1.38059e-02	5.724e-02	Conversion electron
1.71874e-02	1.224e-02	Conversion electron
1.81110e-02	5.641e-02	Conversion electron
4.00719e-02	1.959e-01	Conversion electron
4.02500e-02	2.679e-01	Conversion electron
4.30315e-02	9.894e-02	Conversion electron
4.36000e-02	1.688e-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