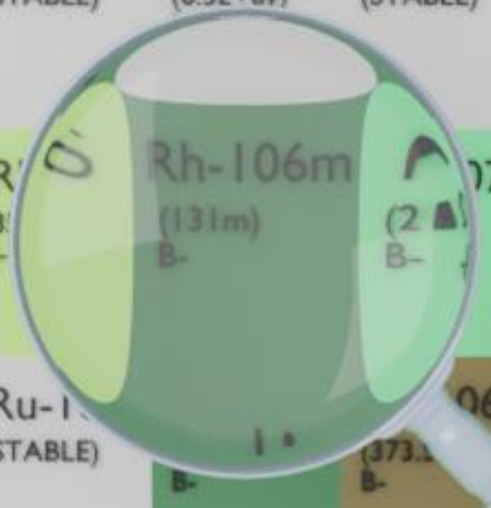




PG-103 (16.991d) C	PG-104 (STABLE)	PG-105 (STABLE)	PG-106 (STABLE)	PG-107 (6.5E+6y)	PG-108 (STABLE)	PG-109 (13.7012h) B-	PG-110 (STABLE)	PG-111 (23.4m) B-
Rh-102 (107d) CB+B-	Rh-103 (STABLE)	Rh-104 (42.3s) B-EC	Rh-105 (31s) B-	Rh-106m (131m) B-	Rh-107 (2.1s) B-	Rh-108 (16.8s) B-	Rh-109 (80s) B-	
Ru-101 (STABLE)	Ru-102 (STABLE)	Ru-103 (39.26d) B-	Ru-104 (STABLE)	Ru-105 (373.1d) B-	Ru-106 (373.1d) B-	Ru-107 (3.75m) B-	Ru-108 (4.55m) B-	

RHODIUM-106M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Rh-106m
Atomic number (Z): 45
Mass number (A): 106
Neutron number (N): 61

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 131.0 [m]
Decay constant: 8.8187×10^{-5} [1/s]
Daughters: Pd-106 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.34922 [MeV]
Mean photon energy: 2.85258 [MeV]
Air kerma rate constant, Γ_{10} : 1.024×10^{-16} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 1.024×10^{-16} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 5.595×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000×10^0 [Gy $\cdot$ kg/Bq $\cdot$ s]

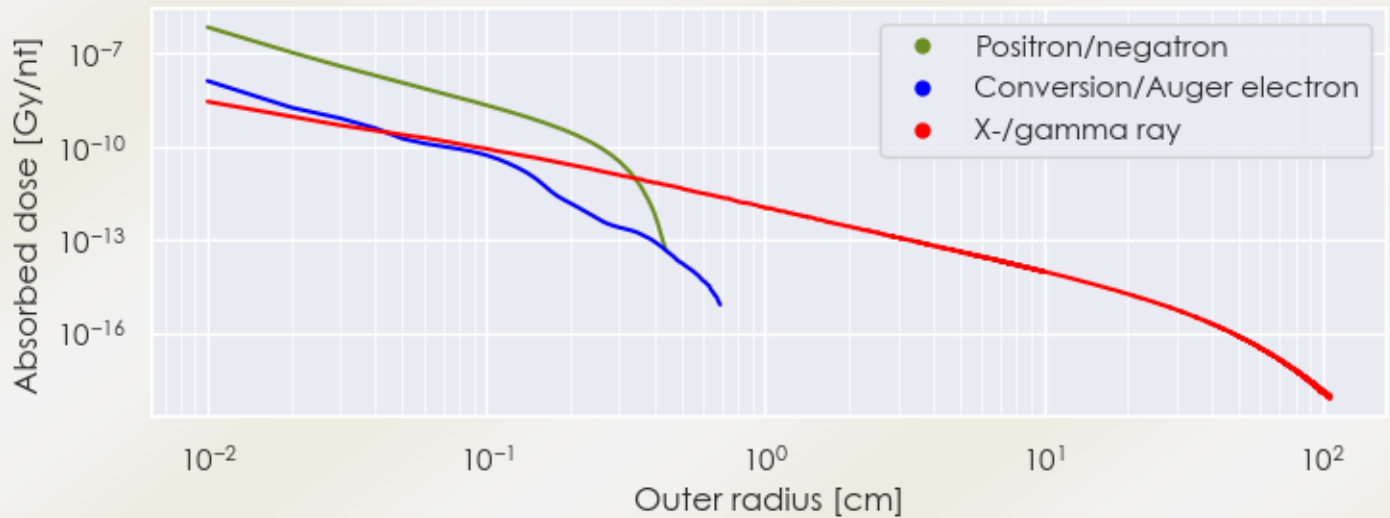
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 5.595e-14 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.570e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

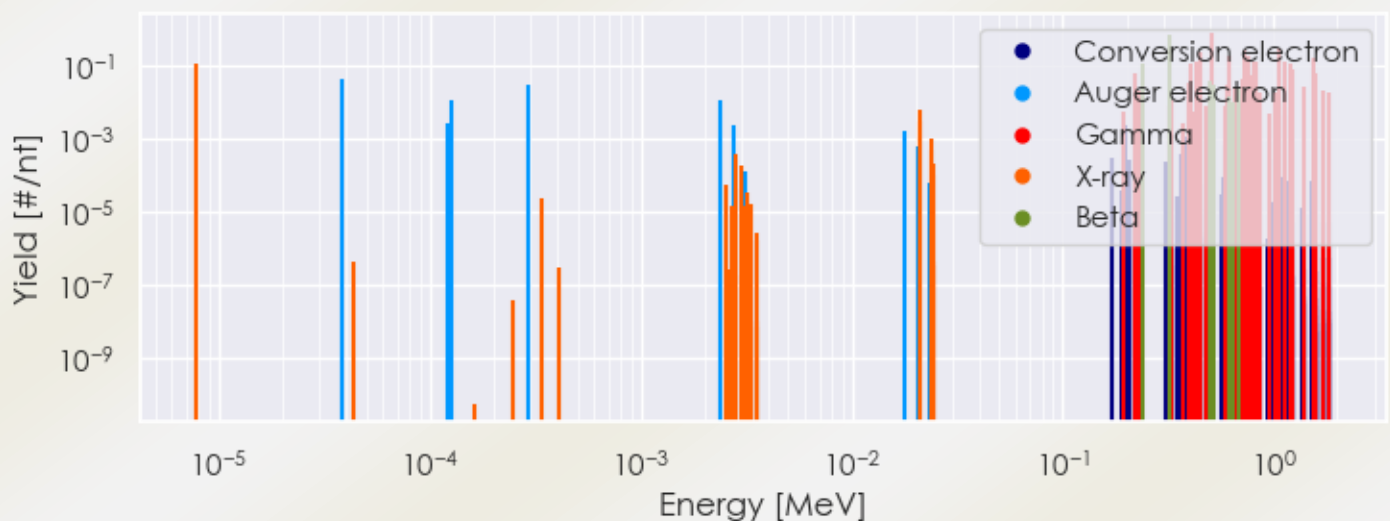
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Rh-106m DPK.csv

SUMMARY SPECTRA (PLOT)

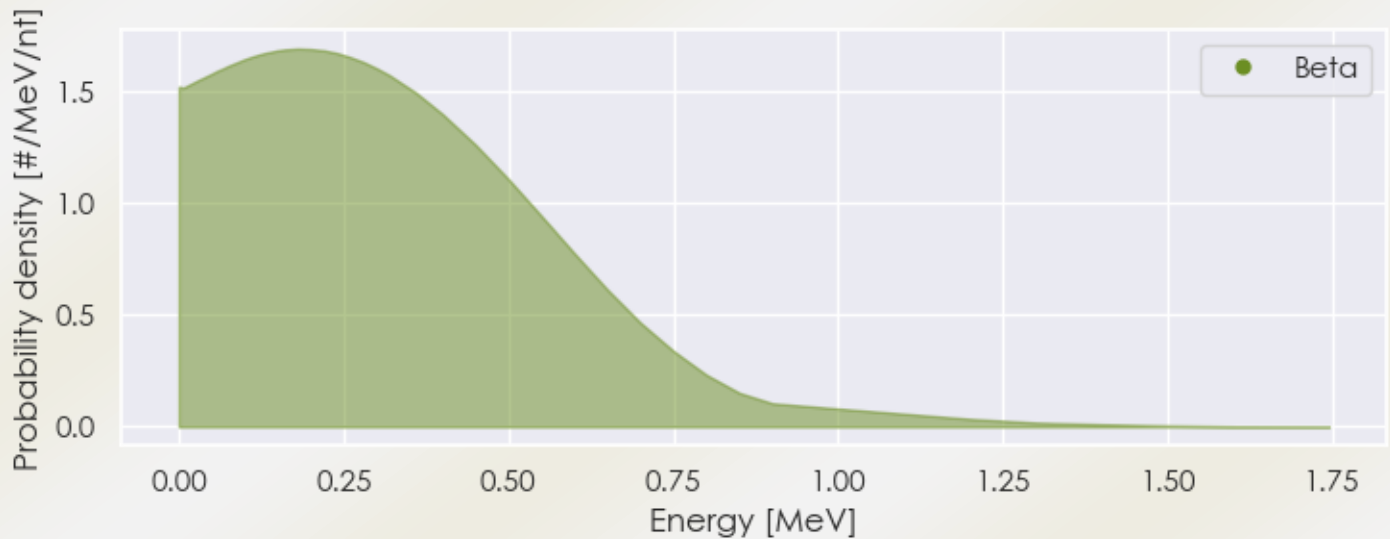
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Rh-106m 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/Rh-106m 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/Rh-106m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
7.85950e-06	1.241e-01	X-ray
2.21800e-01	6.413e-02	Gamma
2.28600e-01	2.052e-02	Gamma
3.28300e-01	1.197e-02	Gamma
3.90800e-01	3.506e-02	Gamma
4.06000e-01	1.163e-01	Gamma
4.29400e-01	1.325e-01	Gamma
4.50800e-01	2.420e-01	Gamma
5.11700e-01	8.550e-01	Gamma

6.01200e-01	2.993e-02	Gamma
6.16100e-01	2.018e-01	Gamma
6.45800e-01	2.736e-02	Gamma
6.80600e-01	1.881e-02	Gamma
7.03100e-01	4.446e-02	Gamma
7.17200e-01	2.890e-01	Gamma
7.48500e-01	1.932e-01	Gamma
7.93800e-01	5.643e-02	Gamma
8.04600e-01	1.300e-01	Gamma
8.08400e-01	7.439e-02	Gamma
8.25000e-01	1.359e-01	Gamma
8.48000e-01	1.966e-02	Gamma
8.48000e-01	1.624e-02	Gamma
1.02050e+00	1.966e-02	Gamma
1.04670e+00	3.035e-01	Gamma
1.12770e+00	1.368e-01	Gamma
1.20050e+00	1.137e-01	Gamma
1.22420e+00	8.123e-02	Gamma
1.39550e+00	2.822e-02	Gamma
1.52940e+00	1.753e-01	Gamma
1.57390e+00	6.669e-02	Gamma
1.72460e+00	2.223e-02	Gamma
1.84060e+00	1.881e-02	Gamma
2.38923e-01	1.242e-01	Beta
3.16755e-01	7.281e-01	Beta
4.94419e-01	3.769e-02	Beta
5.00520e-01	3.169e-02	Beta
5.19576e-01	2.912e-02	Beta
6.08905e-01	1.413e-02	Beta
6.35098e-01	1.028e-02	Beta
6.80527e-01	2.484e-02	Beta
3.82047e-05	4.673e-02	Auger electron
1.26175e-04	1.228e-02	Auger electron
2.92838e-04	3.036e-02	Auger electron
2.38210e-03	1.161e-02	Auger 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