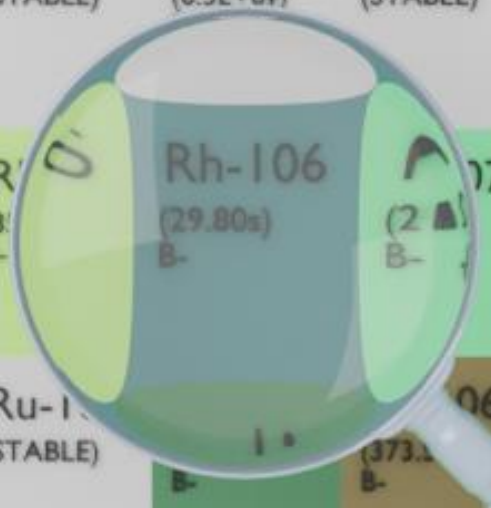




PG-103 (16.991d) C	PG-104 (STABLE)	PG-105 (STABLE)	PG-106 (STABLE)	PG-107 (6.5E+6y)	PG-108 (STABLE)	PG-109 (13.7012h) B-	PG-110 (STABLE)	PG-111 (23.4m) B-
Rh-102 (107d) CB+B-	Rh-103 (STABLE)	Rh-104 (42.3s) B-EC	Rh-105 (31s) B-	Rh-106 (29.80s) B-	Rh-107 (2.1s) B-	Rh-108 (16.8s) B-	Rh-109 (80s) B-	
Ru-101 (STABLE)	Ru-102 (STABLE)	Ru-103 (39.26d) B-	Ru-104 (STABLE)	Ru-105 (373.1s) B-	Ru-106 (3.75m) B-	Ru-107 (3.75m) B-	Ru-108 (4.55m) B-	

RHODIUM-106

SUMMARY DATA

GENERAL

CLASSIFICATION

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

RADIOACTIVE DECAY

Decay modes: β^-
Half-life: 29.8 [s]
Decay constant: 2.3260e-02 [1/s]
Daughters: Pd-106 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.41114 [MeV]
Mean photon energy: 0.20606 [MeV]
Air kerma rate constant, Γ_{10} : 7.678e-18 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 7.678e-18 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.261e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

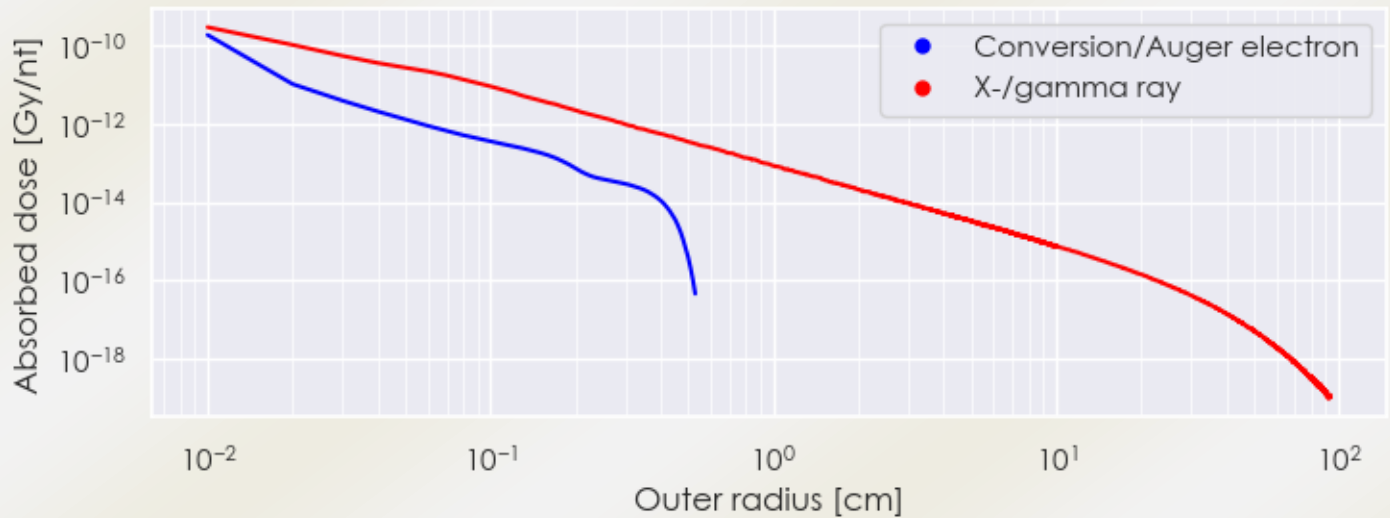
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 2.261×10^{-13} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 3.301×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

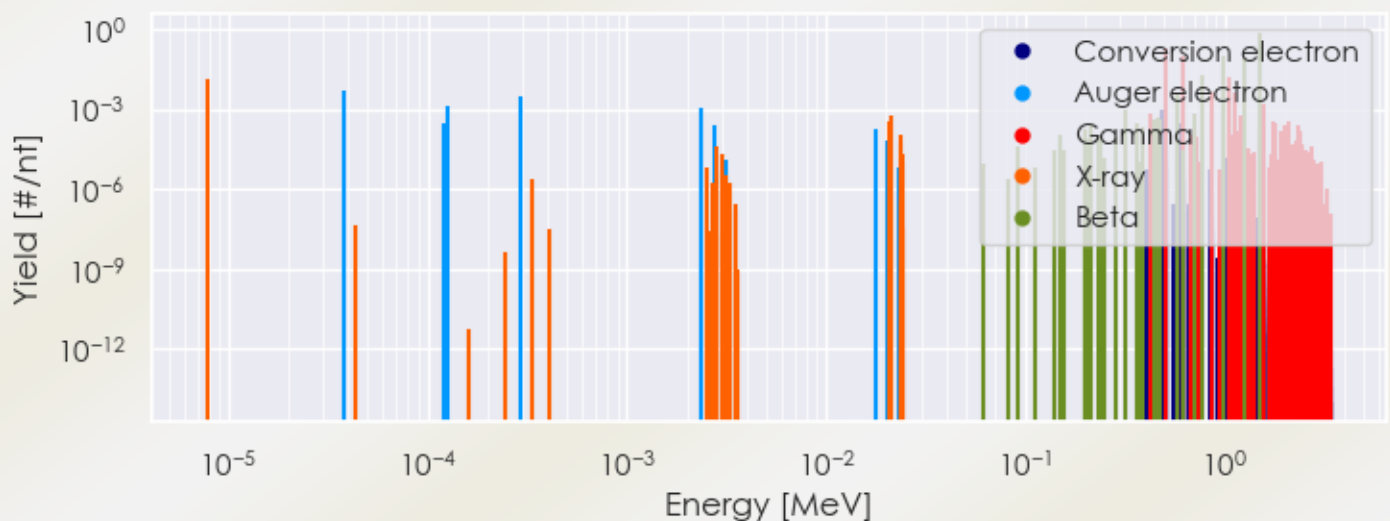
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



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

SUMMARY SPECTRA (PLOT)

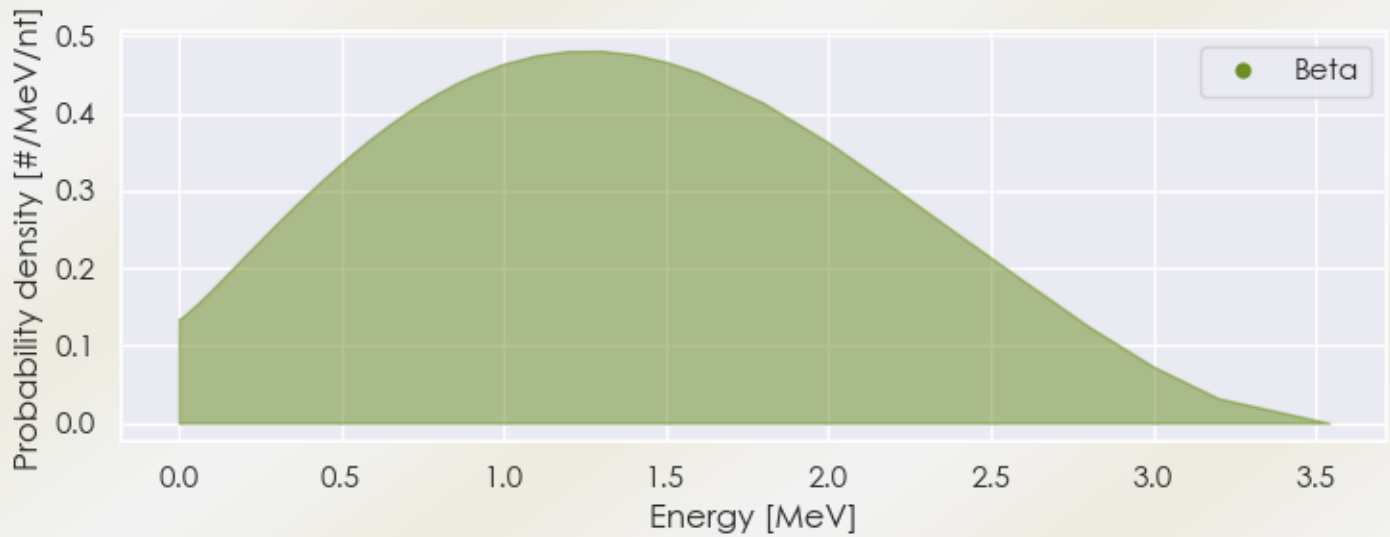
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



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

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
7.85953e-06	1.274e-02	X-ray
5.11861e-01	2.040e-01	Gamma
6.21930e-01	9.935e-02	Gamma
1.05041e+00	1.559e-02	Gamma
7.79473e-01	1.770e-02	Beta
9.76488e-01	9.998e-02	Beta
1.26697e+00	8.099e-02	Beta
1.50849e+00	7.859e-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