



RHODIUM-95

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Rh-95
Atomic number (Z): 45
Mass number (A): 95
Neutron number (N): 50

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 5.02 [m]
Decay constant: $2.3013\text{e-}03$ [1/s]
Daughters: Ru-95 (100.0%)
Radioactive daughters: Ru-95

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.89725 [MeV]
Mean photon energy: 2.56033 [MeV]
Air kerma rate constant, Γ_{10} : $6.343\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $9.117\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $1.438\text{e-}13$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [Gy $\cdot$ kg/Bq $\cdot$ s]

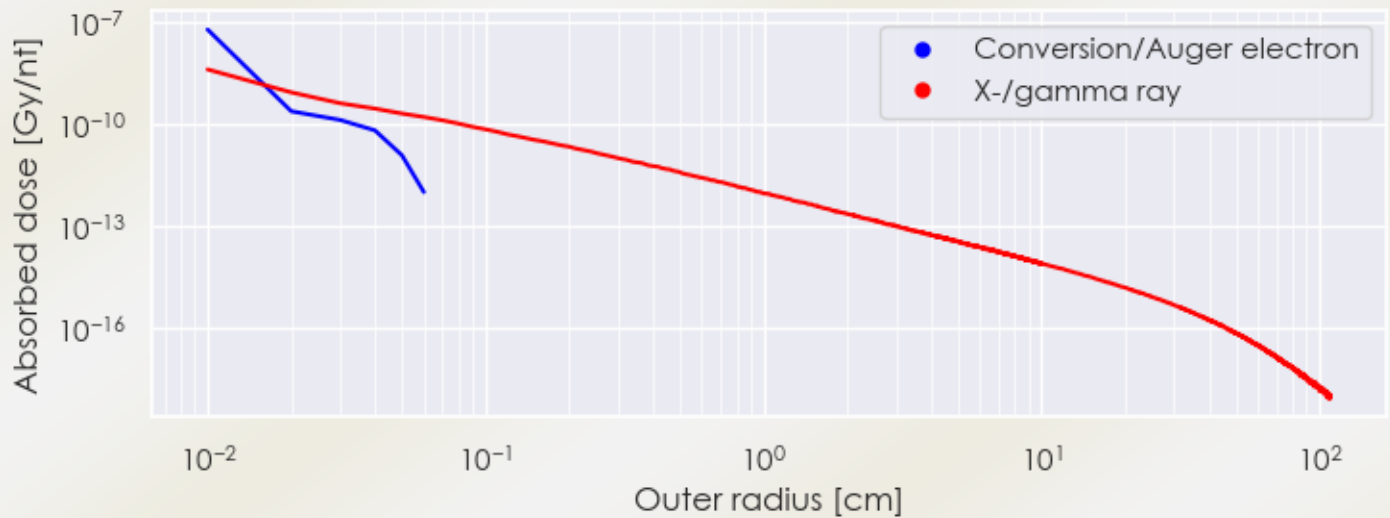
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 1.438×10^{-13} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 4.102×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

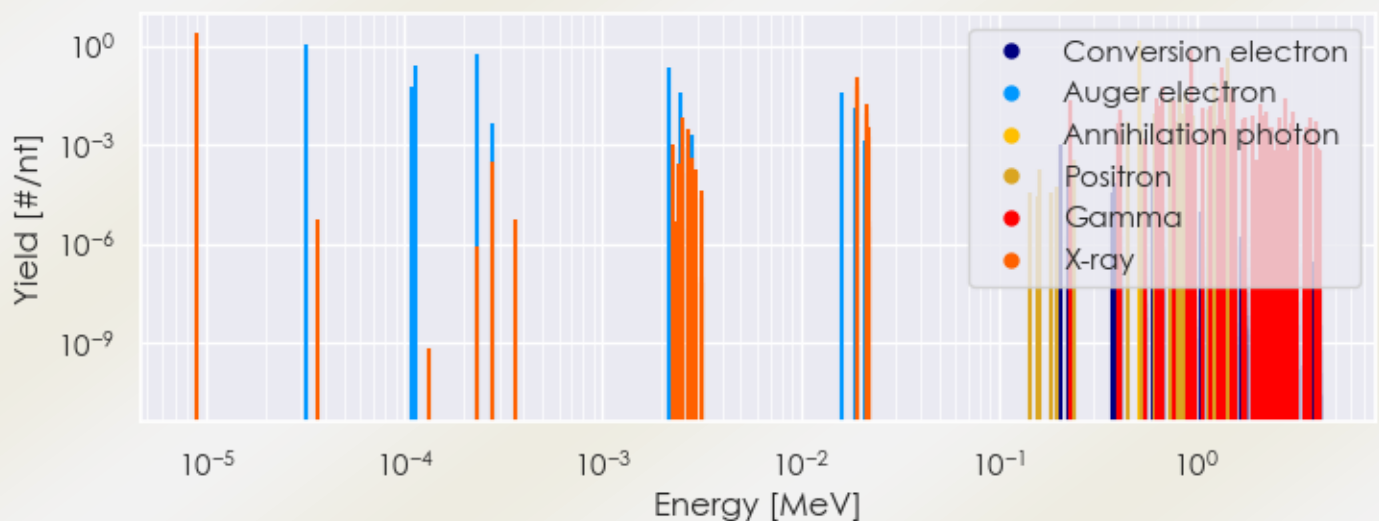
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Rh-95 DPK.csv

SUMMARY SPECTRA (PLOT)

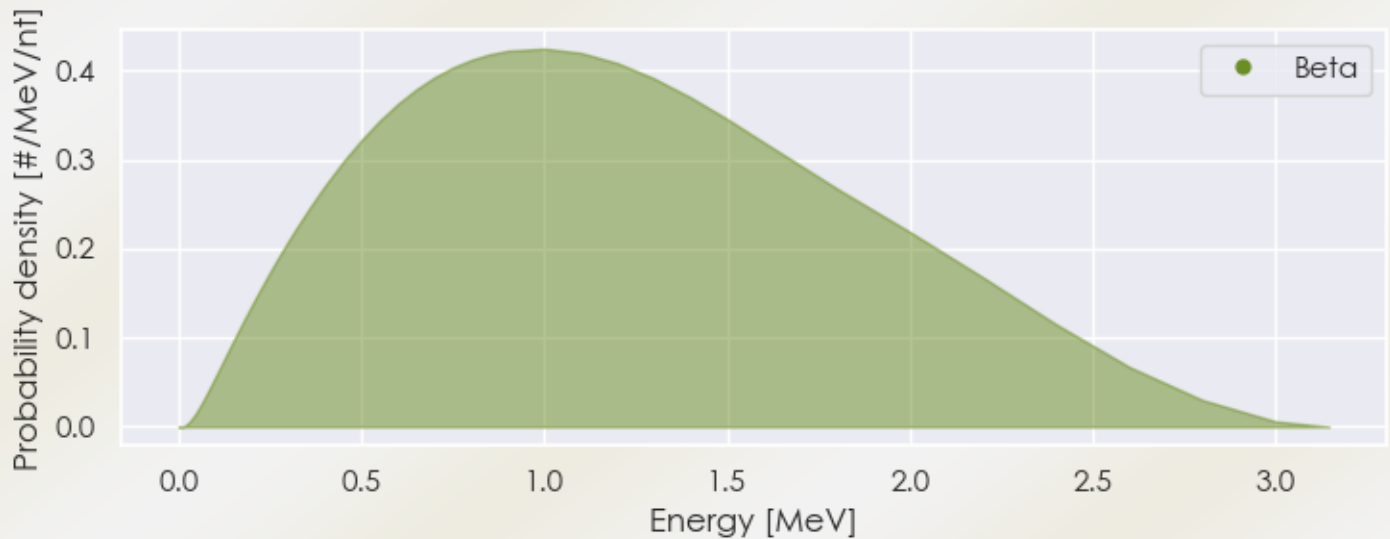
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Rh-95 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-95 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-95 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
8.90920e-06	2.539e+00	X-ray
1.91152e-02	5.688e-02	X-ray
1.92483e-02	1.079e-01	X-ray
2.16277e-02	1.761e-02	X-ray
2.29300e-01	2.290e-02	Gamma
4.10300e-01	1.074e-02	Gamma
5.11000e-01	1.433e+00	Annihilation photon
6.22500e-01	2.648e-02	Gamma
6.61000e-01	1.539e-02	Gamma
6.61000e-01	1.539e-02	Gamma

6.77600e-01	5.797e-02	Gamma
7.64400e-01	2.147e-02	Gamma
8.95000e-01	1.718e-02	Gamma
9.41600e-01	7.157e-01	Gamma
1.07930e+00	1.324e-02	Gamma
1.17540e+00	1.575e-02	Gamma
1.30510e+00	1.789e-02	Gamma
1.31700e+00	3.006e-02	Gamma
1.35200e+00	2.083e-01	Gamma
1.48930e+00	3.435e-02	Gamma
1.49470e+00	5.010e-02	Gamma
1.52450e+00	2.362e-02	Gamma
2.12100e+00	1.610e-02	Gamma
2.79180e+00	2.433e-02	Gamma
3.06320e+00	1.002e-02	Gamma
7.36364e-01	2.684e-02	Positron
8.14623e-01	3.146e-02	Positron
8.20079e-01	2.129e-02	Positron
8.79438e-01	4.072e-02	Positron
1.15310e+00	1.111e-02	Positron
1.16698e+00	1.296e-02	Positron
1.23355e+00	7.033e-02	Positron
1.42606e+00	4.498e-01	Positron
3.14527e-05	1.053e+00	Auger electron
1.07960e-04	5.467e-02	Auger electron
1.14210e-04	2.381e-01	Auger electron
2.31916e-04	5.831e-01	Auger electron
2.15881e-03	2.275e-01	Auger electron
2.46832e-03	3.876e-02	Auger electron
1.61570e-02	3.588e-02	Auger electron
1.86981e-02	1.380e-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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6