



RHODIUM-95M

SUMMARY DATA

GENERAL

CLASSIFICATION

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

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture, Internal transition
Half-life: 1.96 [m]
Decay constant: 5.8941×10^{-3} [1/s]
Daughters: Rh-95 (88.0%), Ru-95 (12.0%)
Radioactive daughters: Rh-95, Ru-95

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.18219 [MeV]
Mean photon energy: 0.89725 [MeV]
Air kerma rate constant, Γ_{10} : 2.751×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 3.088×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 2.919×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

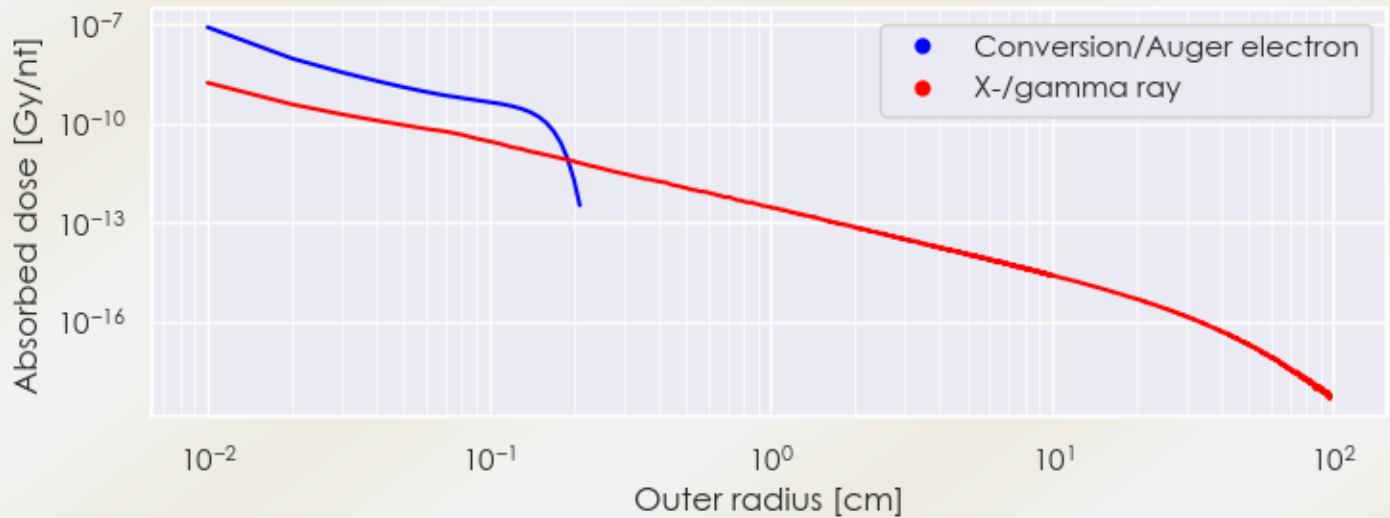
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 2.919×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.438×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

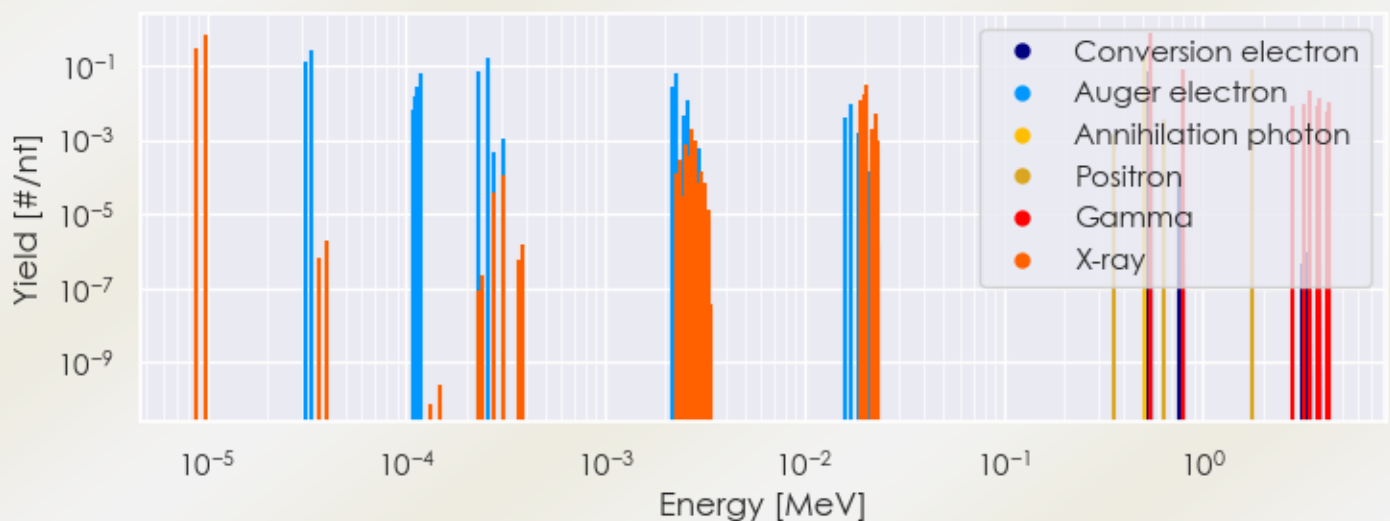
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



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

SUMMARY SPECTRA (PLOT)

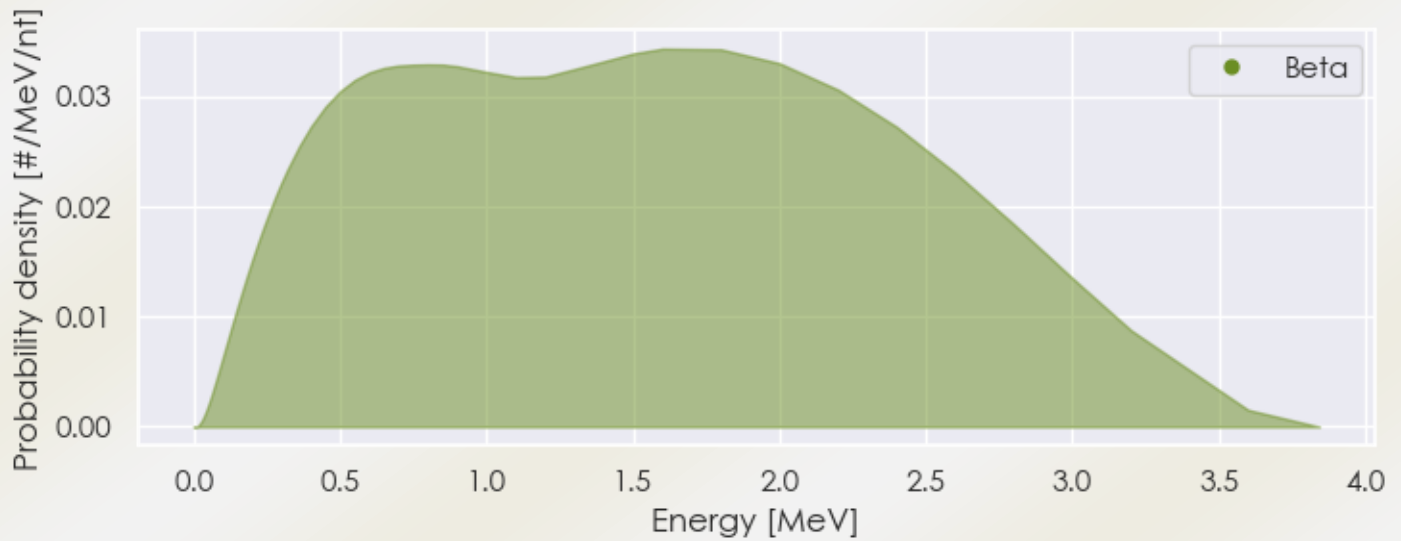
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



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

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
8.90920e-06	2.939e-01	X-ray
9.95816e-06	6.835e-01	X-ray
1.92483e-02	1.249e-02	X-ray
2.00395e-02	1.595e-02	X-ray
2.01865e-02	3.019e-02	X-ray
5.11000e-01	1.741e-01	Annihilation photon
5.43300e-01	8.008e-01	Gamma
7.87700e-01	8.171e-02	Gamma
3.40710e+00	2.106e-02	Gamma

3.82440e+00	1.348e-02	Gamma
4.33650e+00	1.011e-02	Gamma
1.75642e+00	7.535e-02	Positron
3.14527e-05	1.219e-01	Auger electron
3.35239e-05	2.703e-01	Auger electron
1.10566e-04	1.523e-02	Auger electron
1.14211e-04	2.756e-02	Auger electron
1.18264e-04	6.595e-02	Auger electron
2.31916e-04	6.748e-02	Auger electron
2.60340e-04	1.617e-01	Auger electron
2.15881e-03	2.633e-02	Auger electron
2.26695e-03	6.255e-02	Auger electron
2.60815e-03	1.160e-02	Auger electron
5.20109e-01	6.834e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6