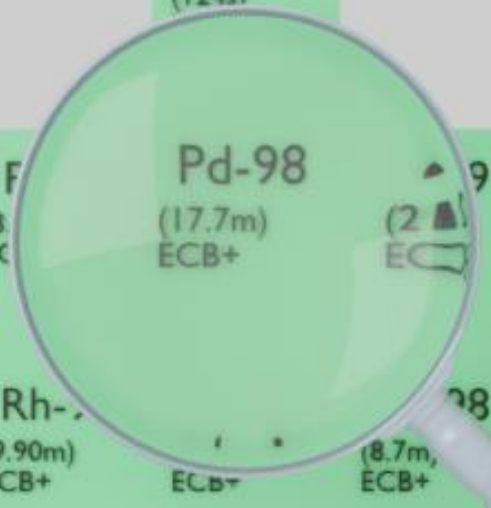




Ag-97 (124s) ECB+	Ag-99 (11.1m) ECB+	Ag-101 (12.9m) ECB+	Ag-102 (65.7m) ECB+
Pd-96 (122s) ECB+	Pd-97 (3.33m) ECB+	Pd-98 (17.7m) ECB+	Pd-99 (2.07m) ECB+
Pd-100 (3.63d) EC	Pd-101 (8.47h) ECB+	Pd-102 (STABLE)	Pd-103 (17.0d) ECB+
Rh-94 (70.6s) ECB+	Rh-95 (5.02m) ECB+	Rh-96 (9.90m) ECB+	Rh-97 (8.7m) ECB+
Rh-98 (15.9h) ECB+	Rh-99 (16.1d) ECB+	Rh-100 (20.8h) ECB+	Rh-101 (3.3y) EC

PALLADIUM-98

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Pd-98
Atomic number (Z): 46
Mass number (A): 98
Neutron number (N): 52

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 17.7 [m]
Decay constant: 6.5268×10^{-4} [1/s]
Daughters: Rh-98 (100.0%)
Radioactive daughters: Rh-98

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.04548 [MeV]
Mean photon energy: 0.41539 [MeV]
Air kerma rate constant, Γ_{10} : 2.349×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 2.535×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 7.287×10^{-15} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

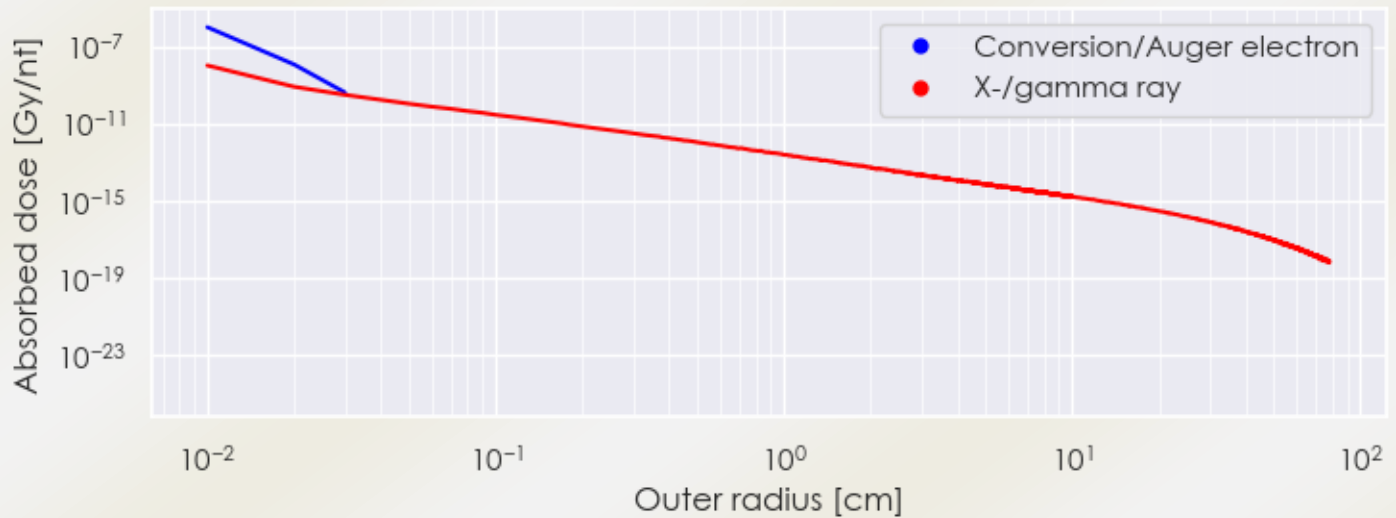
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-\beta^+,e^-}$: 7.287×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 6.655×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

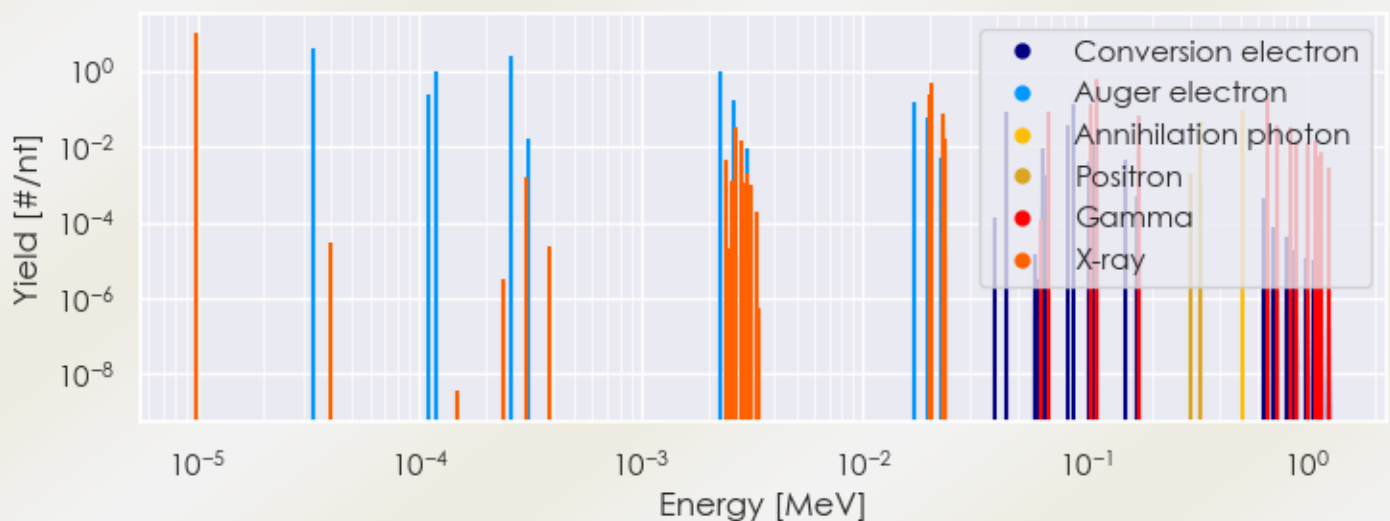
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Pd-98 DPK.csv

SUMMARY SPECTRA (PLOT)

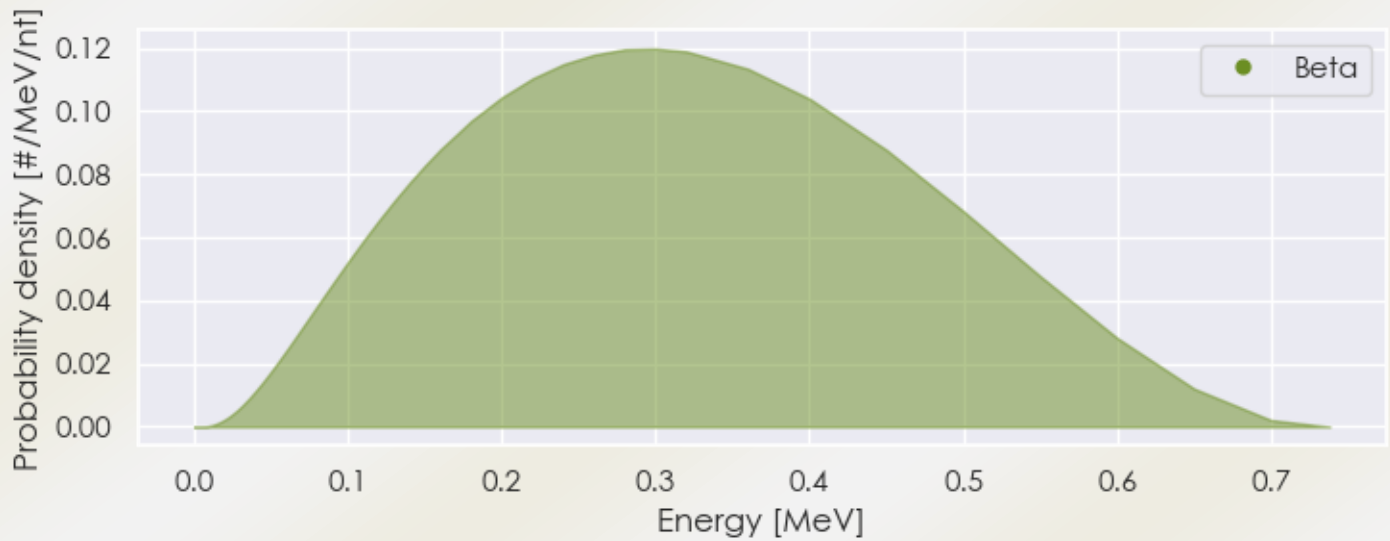
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Pd-98 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/Pd-98 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/Pd-98 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
9.95810e-06	1.044e+01	X-ray
2.68654e-03	3.112e-02	X-ray
2.82846e-03	1.465e-02	X-ray
2.00395e-02	2.499e-01	X-ray
2.01865e-02	4.730e-01	X-ray
2.26708e-02	4.023e-02	X-ray
2.26963e-02	7.822e-02	X-ray
2.31362e-02	1.545e-02	X-ray
6.77000e-02	8.700e-02	Gamma
1.06750e-01	1.392e-01	Gamma

1.12000e-01	5.800e-01	Gamma
1.74400e-01	6.960e-02	Gamma
5.11000e-01	9.591e-02	Annihilation photon
6.62200e-01	1.972e-01	Gamma
7.24700e-01	3.886e-02	Gamma
8.32800e-01	3.132e-02	Gamma
8.95400e-01	1.508e-02	Gamma
1.00750e+00	1.276e-02	Gamma
1.08770e+00	1.392e-02	Gamma
3.27036e-01	4.508e-02	Positron
3.35222e-05	4.128e+00	Auger electron
1.10575e-04	2.320e-01	Auger electron
1.18214e-04	1.007e+00	Auger electron
2.60354e-04	2.468e+00	Auger electron
3.07766e-04	1.610e-02	Auger electron
2.26670e-03	9.547e-01	Auger electron
2.60788e-03	1.771e-01	Auger electron
1.69094e-02	1.439e-01	Auger electron
1.95952e-02	5.633e-02	Auger electron
4.45090e-02	7.992e-02	Conversion electron
8.35590e-02	3.513e-02	Conversion electron
8.88090e-02	1.280e-01	Conversion electron
1.08609e-01	1.457e-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.snm-mi.org/SNM-MI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6