



PLATINUM-184

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Pt-184
Atomic number (Z): 78
Mass number (A): 184
Neutron number (N): 106

RADIOACTIVE DECAY

Decay modes: α , β^+ , Electron capture
Half-life: 17.3 [m]
Decay constant: $6.6777\text{e-}04$ [1/s]
Daughters: Ir-184 (100.0%), Os-180 (0.0017%)
Radioactive daughters: Ir-184, Os-180

DOSIMETRIC CONSTANTS

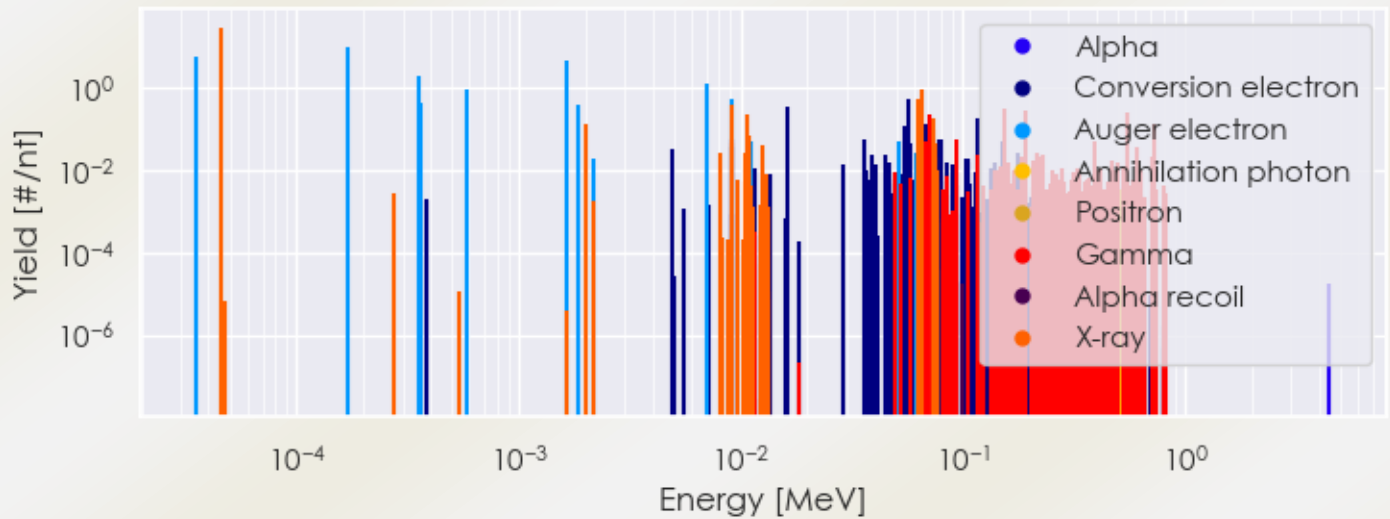
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.20038 [MeV]
Mean photon energy: 0.72661 [MeV]
Air kerma rate constant, Γ_{10} : $4.653\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $4.659\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $3.210\text{e-}14$ [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, $\Delta_{\beta,\beta^+,e^-}$: 3.210e-14 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.164e-13 [Gy·kg/Bq·s]

SUMMARY SPECTRA (PLOT)

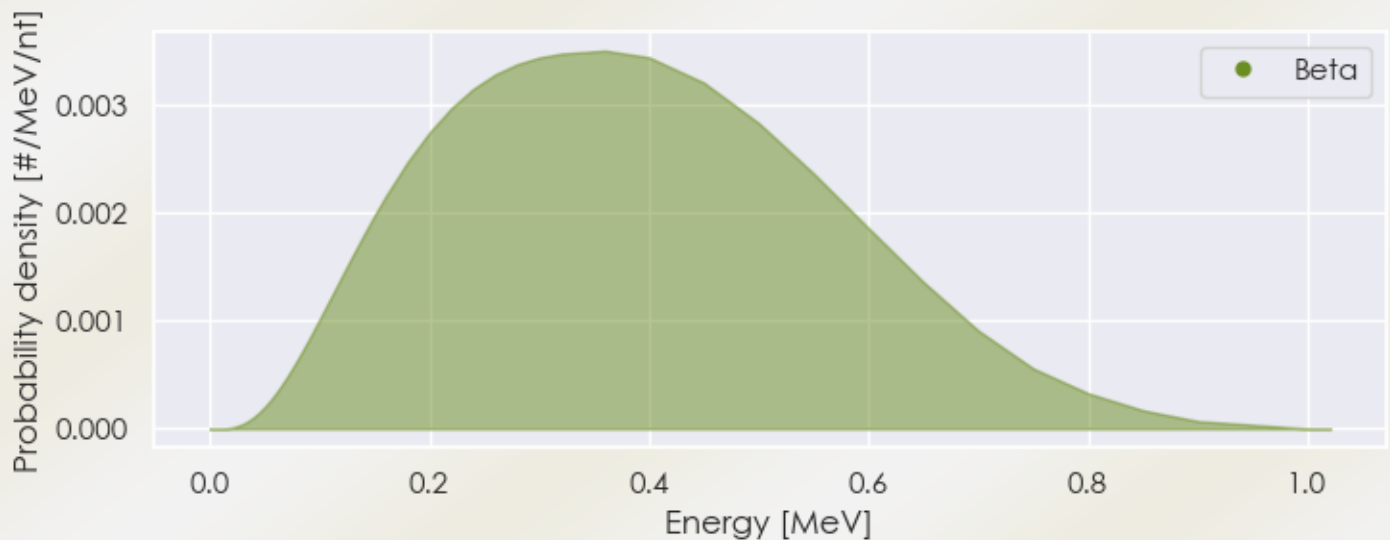
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Pt-184 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/Pt-184 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/Pt-184 Summary Spectrum.csv

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
4.53406e-05	2.809e+01	X-ray
1.99445e-03	1.315e-01	X-ray
8.06830e-03	2.499e-02	X-ray
9.09081e-03	4.315e-02	X-ray
9.16923e-03	3.804e-01	X-ray
1.04958e-02	2.588e-02	X-ray
1.07358e-02	2.096e-01	X-ray
1.08570e-02	3.090e-02	X-ray
1.09194e-02	6.964e-02	X-ray
1.25485e-02	4.042e-02	X-ray
6.34550e-02	4.953e-01	X-ray
6.50999e-02	8.495e-01	X-ray
6.76000e-02	5.054e-02	Gamma
7.07000e-02	2.261e-01	Gamma
7.34138e-02	9.265e-02	X-ray
7.37750e-02	1.792e-01	X-ray
7.57436e-02	2.147e-02	X-ray
7.58295e-02	4.180e-02	X-ray
9.27000e-02	5.320e-02	Gamma
1.17000e-01	2.421e-02	Gamma
1.44400e-01	1.011e-02	Gamma
1.49300e-01	1.250e-02	Gamma
1.54800e-01	3.059e-01	Gamma
1.61400e-01	1.463e-02	Gamma
1.82700e-01	1.968e-02	Gamma
1.92000e-01	2.660e-01	Gamma
2.09300e-01	1.596e-02	Gamma
2.11700e-01	1.197e-02	Gamma

2.16200e-01	2.660e-02	Gamma
2.16900e-01	2.421e-02	Gamma
2.25800e-01	2.128e-02	Gamma
2.30700e-01	2.208e-02	Gamma
2.78300e-01	1.091e-02	Gamma
3.28700e-01	1.117e-02	Gamma
3.94300e-01	5.054e-02	Gamma
4.15500e-01	1.091e-02	Gamma
4.71300e-01	1.596e-02	Gamma
4.99400e-01	1.490e-02	Gamma
5.32300e-01	1.170e-02	Gamma
5.48300e-01	2.314e-01	Gamma
6.10500e-01	3.458e-02	Gamma
6.31600e-01	1.011e-02	Gamma
7.09800e-01	2.128e-02	Gamma
7.31200e-01	1.277e-01	Gamma
3.54131e-05	5.388e+00	Auger electron
1.71031e-04	9.223e+00	Auger electron
3.54575e-04	1.917e+00	Auger electron
3.63868e-04	4.149e-01	Auger electron
5.82444e-04	9.028e-01	Auger electron
1.64242e-03	4.447e+00	Auger electron
1.84294e-03	3.918e-01	Auger electron
2.15033e-03	1.942e-02	Auger electron
4.88600e-03	3.087e-02	Conversion electron
7.08585e-03	1.276e+00	Auger electron
9.06100e-03	3.557e-02	Conversion electron
9.06344e-03	5.176e-01	Auger electron
9.18600e-03	5.388e-02	Conversion electron
1.10734e-02	5.149e-02	Auger electron
1.16000e-02	1.084e-02	Conversion electron
1.63860e-02	3.507e-01	Conversion electron
2.91860e-02	1.326e-02	Conversion electron
3.60040e-02	5.189e-02	Conversion electron
3.90040e-02	2.346e-02	Conversion electron
4.06860e-02	1.422e-02	Conversion electron
4.50040e-02	2.369e-02	Conversion electron
4.68610e-02	1.577e-02	Conversion electron

5.13520e-02	4.753e-02	Auger electron
5.42040e-02	1.157e-01	Conversion electron
5.47410e-02	4.831e-02	Conversion electron
5.63860e-02	3.747e-02	Conversion electron
5.73040e-02	4.882e-01	Conversion electron
5.78410e-02	4.617e-02	Conversion electron
6.15157e-02	2.532e-02	Auger electron
6.27860e-02	1.285e-02	Conversion electron
6.33860e-02	1.382e-02	Conversion electron
6.50610e-02	4.850e-02	Conversion electron
6.76000e-02	1.447e-02	Conversion electron
6.80860e-02	1.387e-02	Conversion electron
6.81610e-02	1.246e-01	Conversion electron
7.07000e-02	3.807e-02	Conversion electron
7.29860e-02	1.780e-02	Conversion electron
7.84860e-02	5.231e-02	Conversion electron
7.93040e-02	5.218e-02	Conversion electron
8.50860e-02	1.572e-02	Conversion electron
9.01610e-02	1.331e-02	Conversion electron
1.04141e-01	1.817e-02	Conversion electron
1.05786e-01	1.485e-02	Conversion electron
1.06386e-01	1.880e-02	Conversion electron
1.15686e-01	1.758e-01	Conversion electron
1.32986e-01	1.044e-02	Conversion electron
1.39886e-01	1.490e-02	Conversion electron
1.40586e-01	1.143e-02	Conversion electron
1.49486e-01	4.739e-02	Conversion electron
1.54386e-01	1.072e-02	Conversion electron
1.78604e-01	2.558e-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