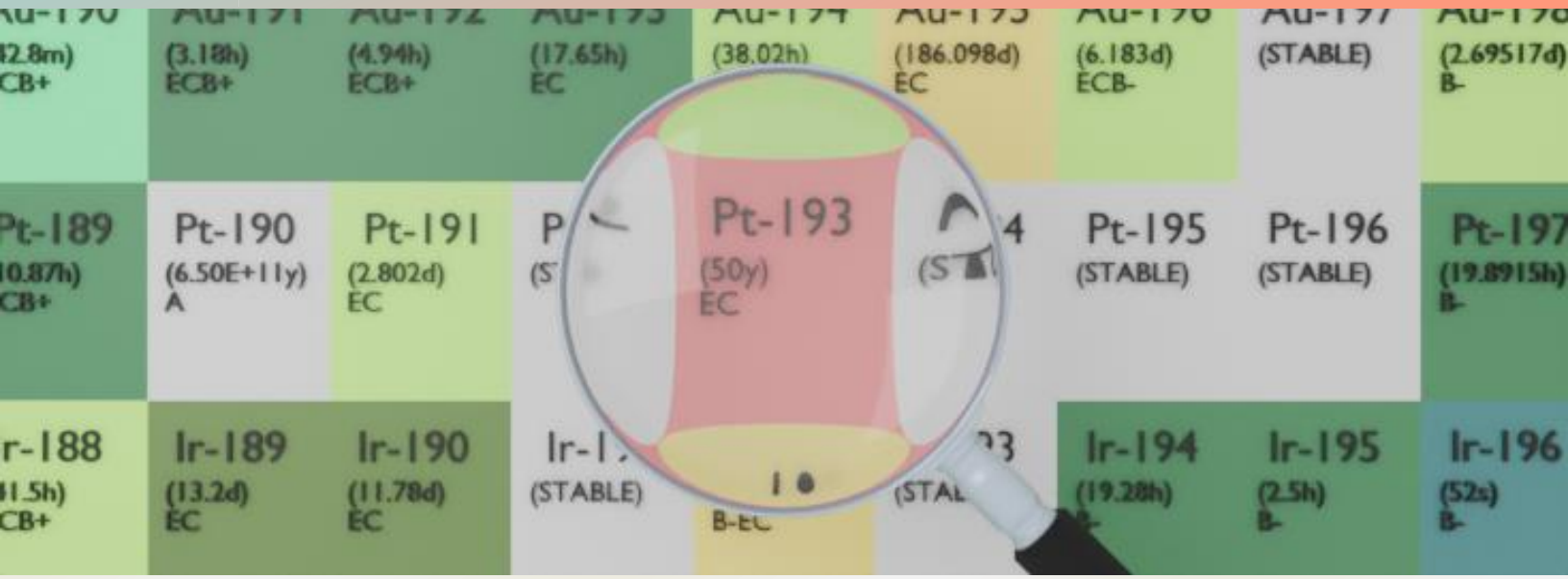


PLATINUM-193

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Pt-193
Atomic number (Z): 78
Mass number (A): 193
Neutron number (N): 115

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 50.0 [y]
Decay constant: 4.3930e-10 [1/s]
Daughters: Ir-193 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

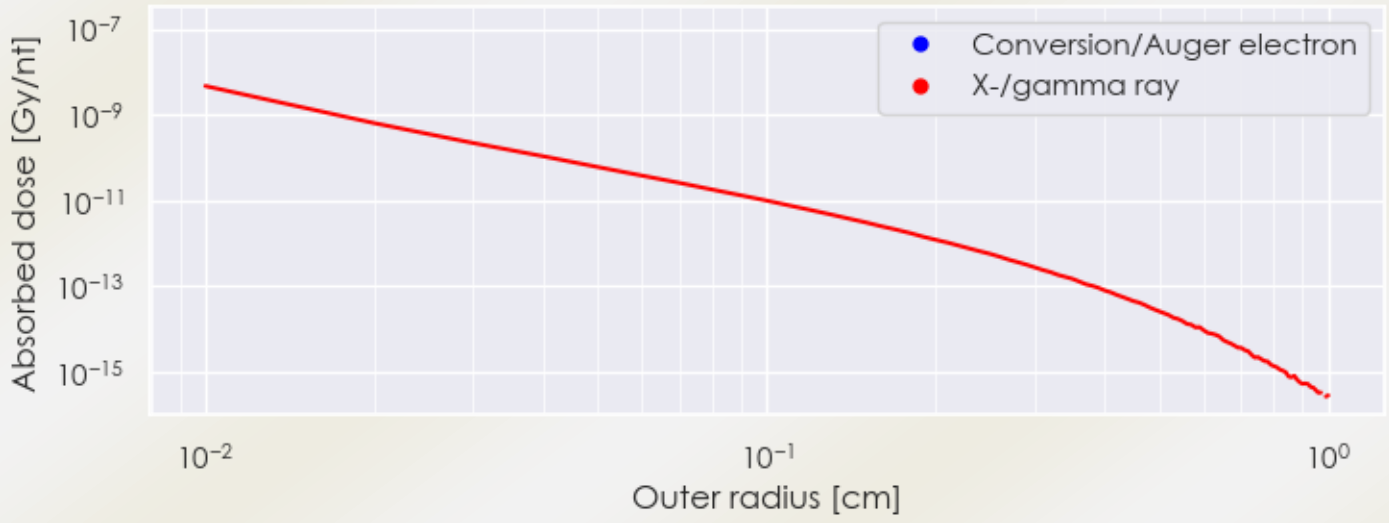
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.00714 [MeV]
Mean photon energy: 0.00258 [MeV]
Air kerma rate constant, Γ_{10}: 4.734e-18 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 4.734e-18 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 1.144e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 1.144e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 4.134e-16 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

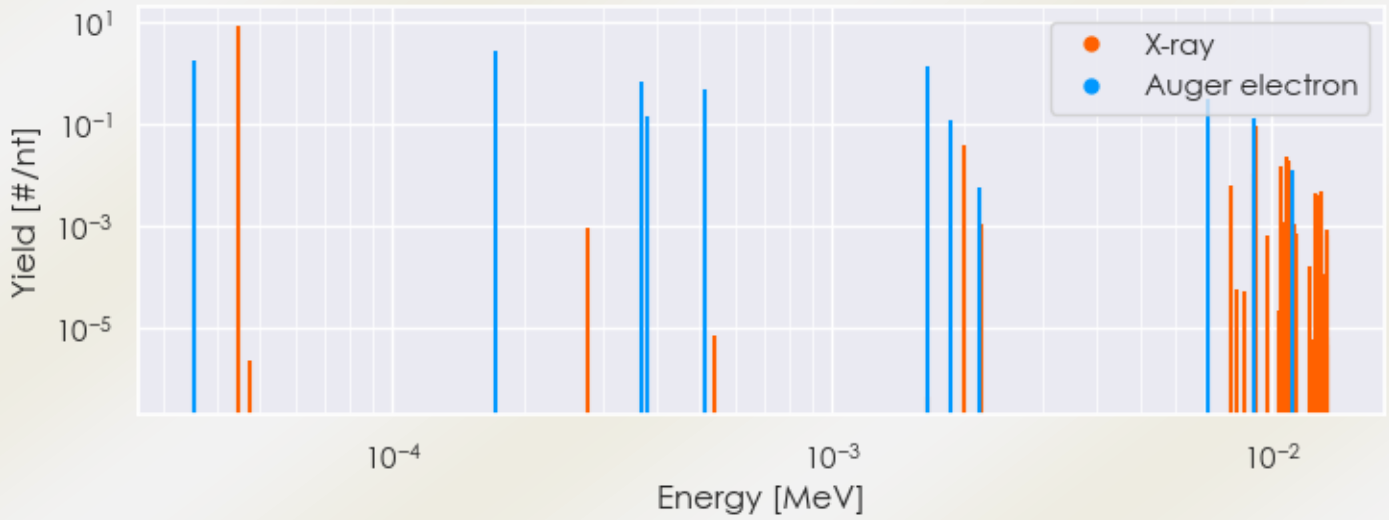
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Pt-193 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/Pt-193 Summary 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-193 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
4.47711e-05	8.979e+00	X-ray
1.99773e-03	4.017e-02	X-ray
9.09081e-03	1.076e-02	X-ray
9.16924e-03	9.486e-02	X-ray
1.04958e-02	1.567e-02	X-ray
1.07358e-02	2.312e-02	X-ray
1.08570e-02	1.870e-02	X-ray
1.09194e-02	1.736e-02	X-ray
3.54551e-05	1.779e+00	Auger electron
1.71100e-04	2.926e+00	Auger electron
3.68061e-04	6.997e-01	Auger electron
3.78536e-04	1.405e-01	Auger electron
5.12751e-04	4.953e-01	Auger electron
1.64436e-03	1.355e+00	Auger electron
1.84872e-03	1.196e-01	Auger electron
7.11129e-03	3.158e-01	Auger electron
9.10019e-03	1.283e-01	Auger electron
1.11313e-02	1.282e-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