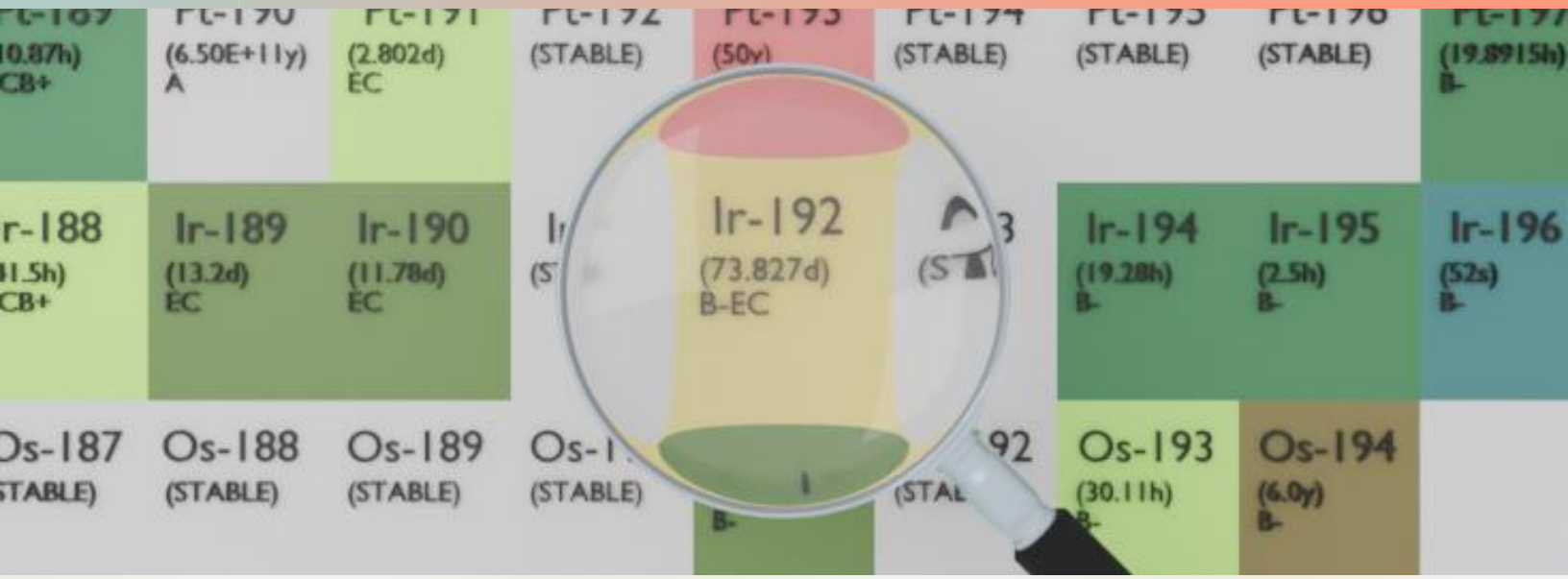


IRIDIUM-192

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Ir-192
Atomic number (Z): 77
Mass number (A): 192
Neutron number (N): 115

RADIOACTIVE DECAY

Decay modes: β-, Electron capture
Half-life: 73.83 [d]
Decay constant: 1.0867e-07 [1/s]
Daughters: Pt-192 (95.1%), Os-192 (4.87%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

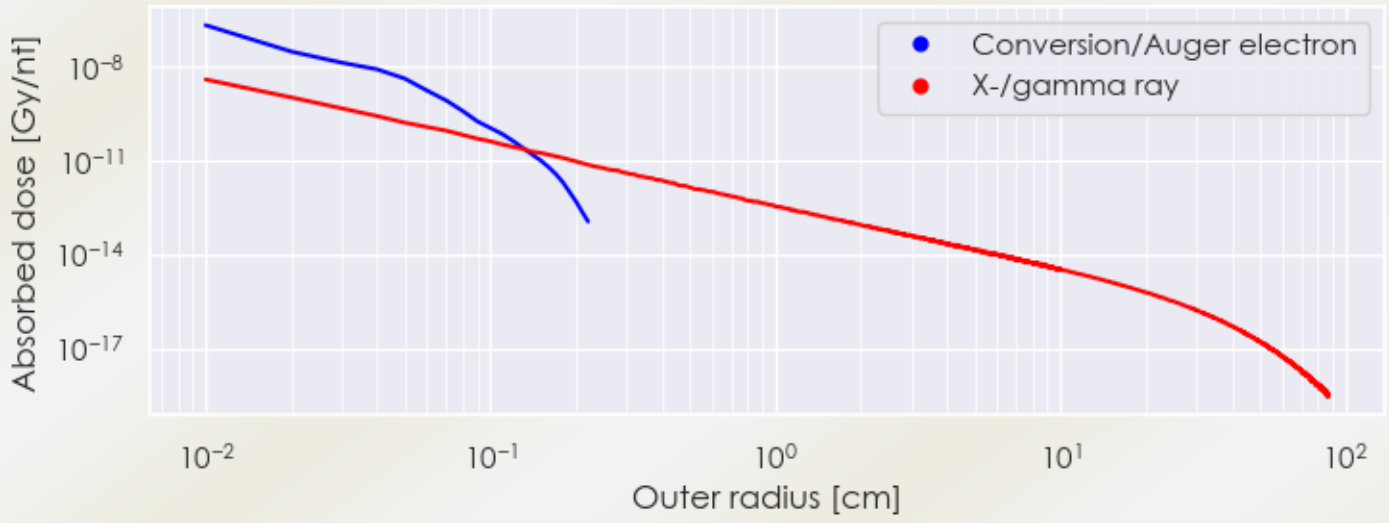
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.21769 [MeV]
Mean photon energy: 0.81649 [MeV]
Air kerma rate constant, Γ_{10}: 3.177e-17 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 3.177e-17 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 3.488e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 3.488e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 1.308e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

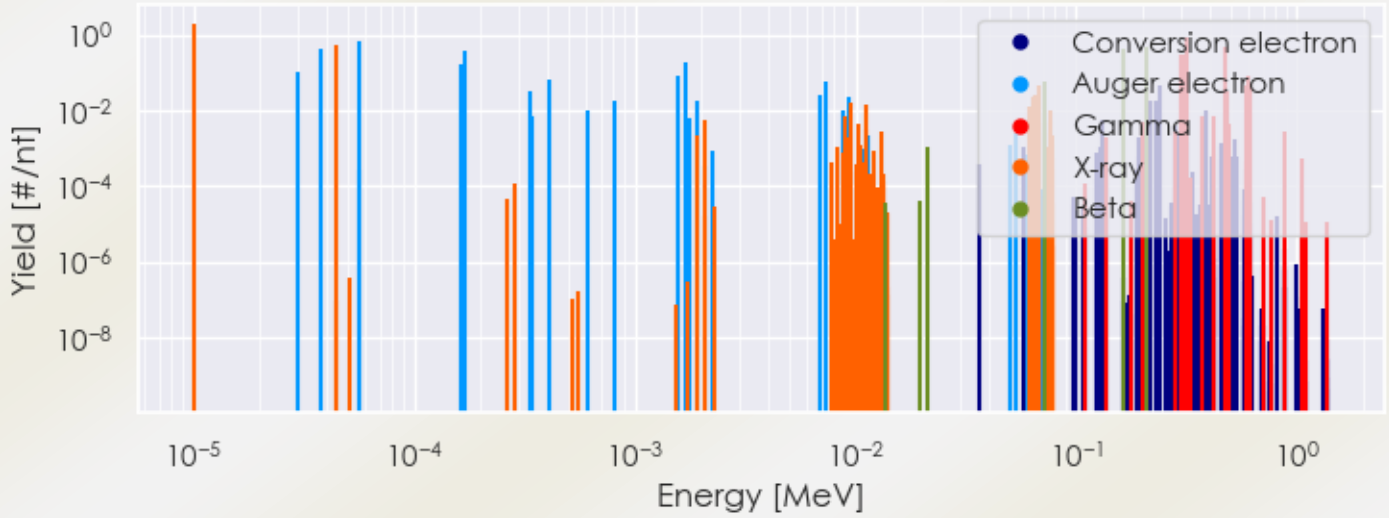
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Ir-192 DPK.csv

SUMMARY SPECTRA (PLOT)

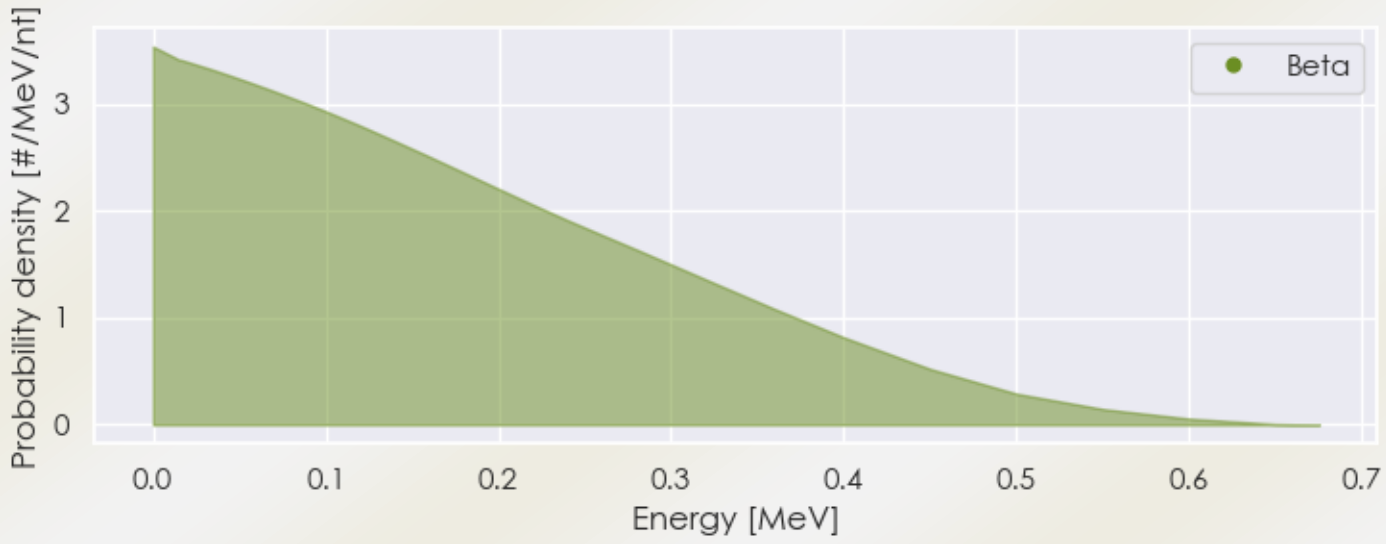
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Ir-192 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/Ir-192 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/Ir-192 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.01450e-05	1.986e+00	X-ray
4.40466e-05	4.992e-01	X-ray
9.43804e-03	1.619e-02	X-ray
1.11006e-02	1.347e-02	X-ray
6.16420e-02	1.239e-02	X-ray
6.31890e-02	2.134e-02	X-ray
6.53020e-02	2.680e-02	X-ray
6.70480e-02	4.579e-02	X-ray
2.05794e-01	3.340e-02	Gamma
2.95957e-01	2.872e-01	Gamma

3.08455e-01	2.968e-01	Gamma
3.16506e-01	8.271e-01	Gamma
4.68069e-01	4.781e-01	Gamma
4.84575e-01	3.187e-02	Gamma
5.88581e-01	4.517e-02	Gamma
6.04411e-01	8.200e-02	Gamma
6.12462e-01	5.340e-02	Gamma
7.15854e-02	5.599e-02	Beta
1.62059e-01	4.143e-01	Beta
2.09811e-01	4.799e-01	Beta
2.96108e-05	9.727e-02	Auger electron
3.74634e-05	4.224e-01	Auger electron
5.59843e-05	6.831e-01	Auger electron
1.63591e-04	1.658e-01	Auger electron
1.71454e-04	3.606e-01	Auger electron
3.33768e-04	3.309e-02	Auger electron
4.09239e-04	6.499e-02	Auger electron
6.08031e-04	1.042e-02	Auger electron
8.13788e-04	1.808e-02	Auger electron
1.58155e-03	7.936e-02	Auger electron
1.69901e-03	1.767e-01	Auger electron
1.91108e-03	1.686e-02	Auger electron
6.88296e-03	2.425e-02	Auger electron
7.31955e-03	5.438e-02	Auger electron
9.37192e-03	2.246e-02	Auger electron
2.17342e-01	1.884e-02	Conversion electron
2.29840e-01	1.806e-02	Conversion electron
2.37891e-01	4.445e-02	Conversion electron
3.89454e-01	1.020e-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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6