

Se-70 (41.1m) ECB+	Se-71 (4.74m) ECB+	Se-72 (8.40d) EC	Se-73 (7.15h) EC	Se-74 (STABLE)	Se-75 (119.779d) EC	Se-76 (STABLE)	Se-77 (STABLE)	
As-68 (51.6s) CB+	As-69 (15.23m) ECB+	As-70 (52.6m) ECB+	As-71 (6.7h) EC	As-72 (26.0h) ECB+	As-73 (8.0h) EC	As-74 (17.77d) ECB+B-	As-75 (STABLE)	As-76 (1.0778d) B-
Ge-67 (8.9m) CB+	Ge-68 (270.95d) EC	Ge-69 (39.05h) ECB+	Ge-70 (STABLE)	Ge-71 (STABLE)	Ge-72 (STABLE)	Ge-73 (STABLE)	Ge-74 (STABLE)	Ge-75 (82.78m) B-

ARSENIC-72

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: As-72
Atomic number (Z): 33
Mass number (A): 72
Neutron number (N): 39

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 26.0 [h]
Decay constant: 7.4054e-06 [1/s]
Daughters: Ge-72 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.04085 [MeV]
Mean photon energy: 1.78318 [MeV]
Air kerma rate constant, Γ_{10} : 3.177e-17 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 6.580e-17 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 1.668e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

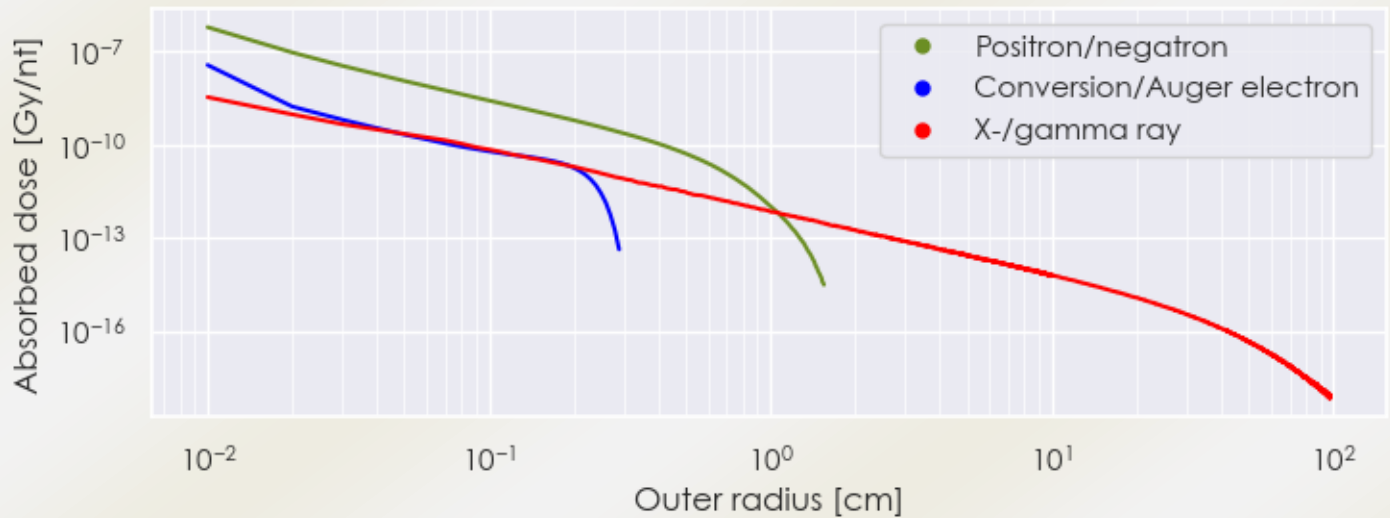
Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 1.668×10^{-13} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 2.857×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

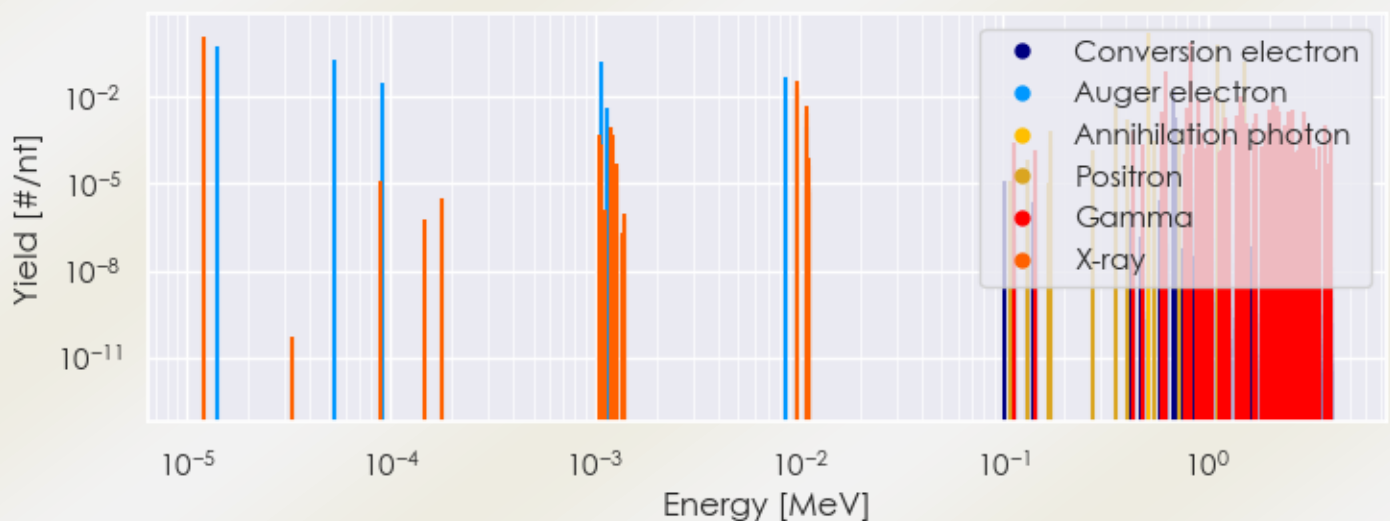
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/As-72 DPK.csv

SUMMARY SPECTRA (PLOT)

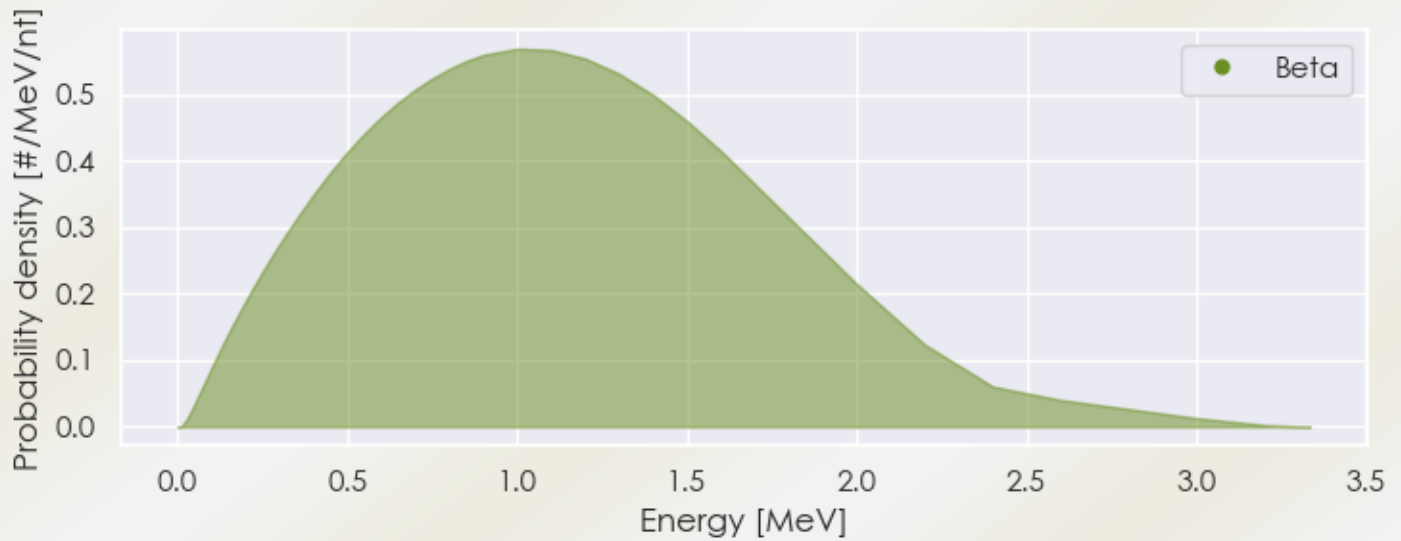
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/As-72 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/As-72 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/As-72 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.21072e-05	1.184e+00	X-ray
9.81159e-03	1.981e-02	X-ray
9.84420e-03	3.844e-02	X-ray
5.11000e-01	1.758e+00	Annihilation photon
6.29920e-01	7.918e-02	Gamma
8.33990e-01	7.950e-01	Gamma
1.46400e+00	1.107e-02	Gamma
8.24135e-01	5.823e-02	Positron
1.11678e+00	6.423e-01	Positron
1.52801e+00	1.631e-01	Positron

1.41918e-05	5.684e-01	Auger electron
5.27745e-05	2.087e-01	Auger electron
9.16906e-05	3.282e-02	Auger electron
1.07870e-03	1.693e-01	Auger electron
8.52330e-03	4.560e-02	Auger electron
9.66388e-03	1.248e-02	Auger electron
6.79933e-01	1.786e-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