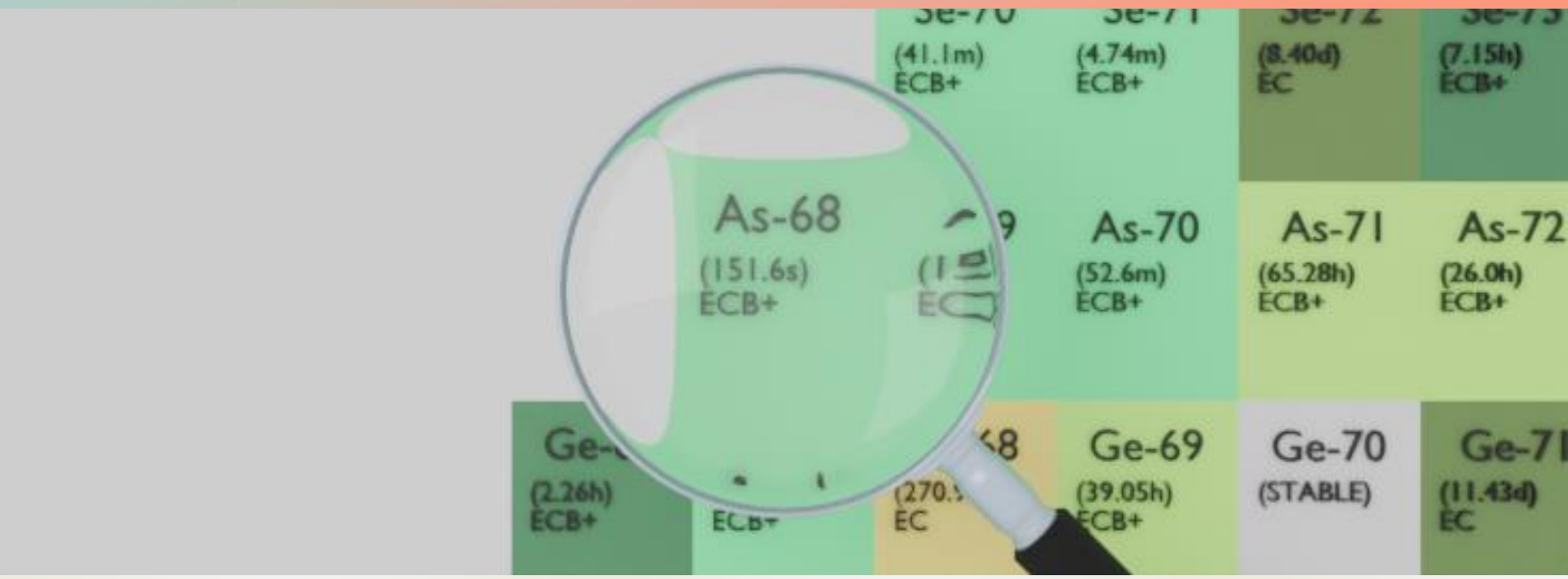


ARSENIC-68

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: As-68
Atomic number (Z): 33
Mass number (A): 68
Neutron number (N): 35

RADIOACTIVE DECAY

Decay modes: β+, Electron capture
Half-life: 151.6 [s]
Decay constant: 4.5722e-03 [1/s]
Daughters: Ge-68 (100.0%)
Radioactive daughters: Ge-68

DOSIMETRIC CONSTANTS

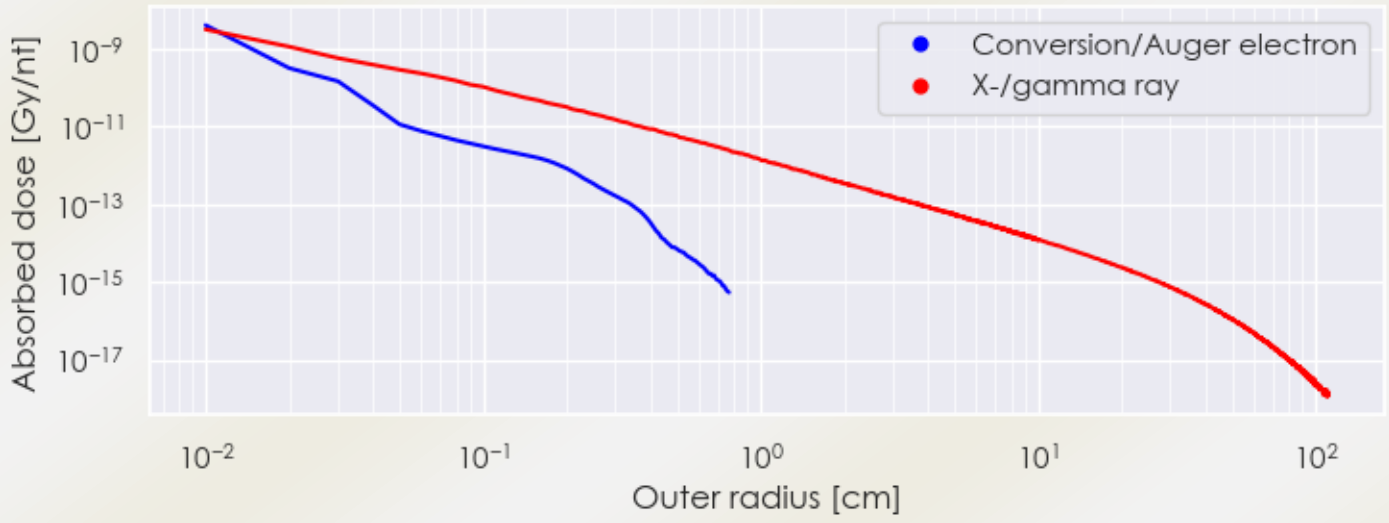
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.99847 [MeV]
Mean photon energy: 3.71125 [MeV]
Air kerma rate constant, Γ_{10}*:* 9.075e-17 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air}*:* 1.290e-16 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}*:* 3.202e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}*:* 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 3.202e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 5.946e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

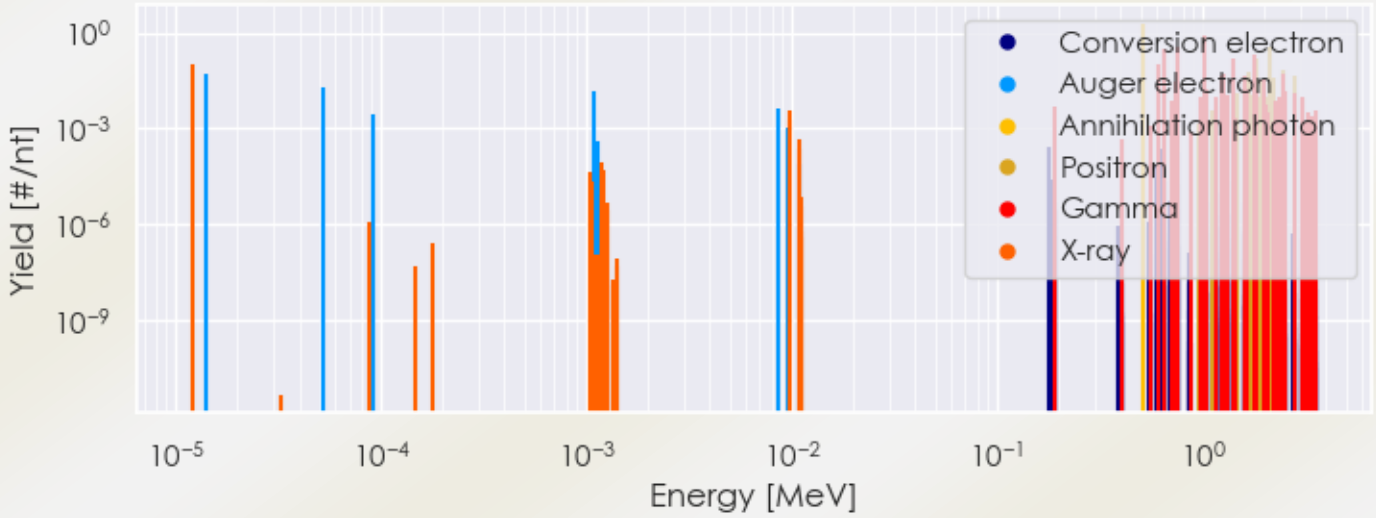
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/As-68 DPK.csv

SUMMARY SPECTRA (PLOT)

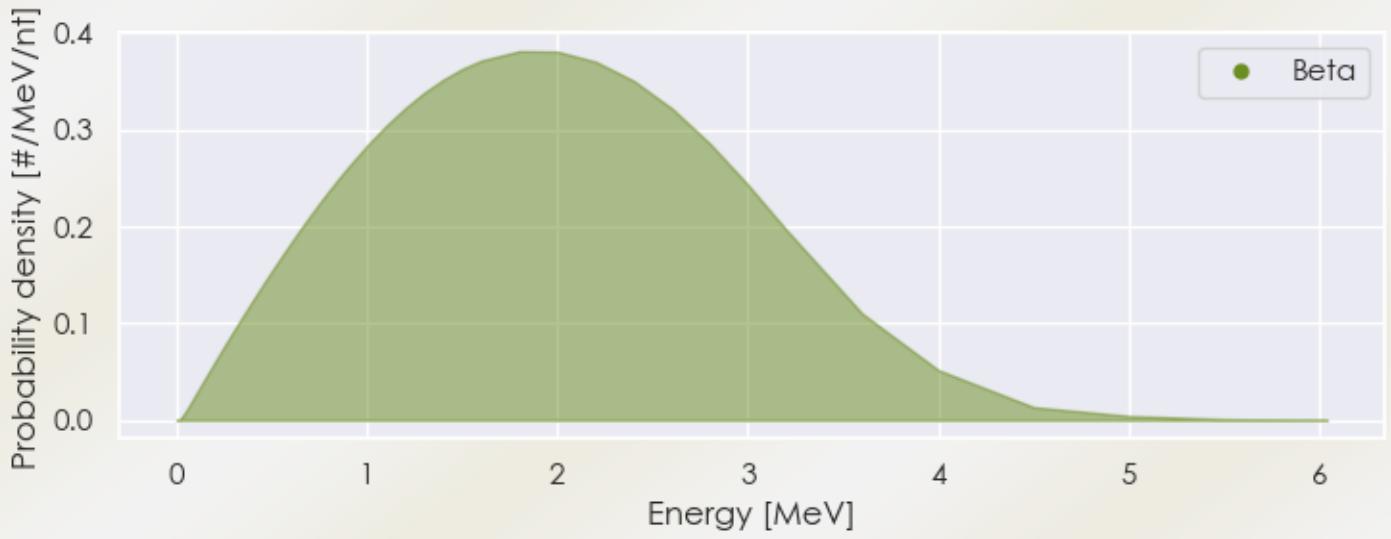
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/As-68 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-68 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-68 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.21072e-05	1.073e-01	X-ray
5.11000e-01	1.977e+00	Annihilation photon
6.12000e-01	9.688e-02	Gamma
6.51200e-01	3.193e-01	Gamma
7.38400e-01	3.022e-02	Gamma
7.61800e-01	3.356e-01	Gamma
9.88300e-01	1.008e-02	Gamma
1.01610e+00	7.750e-01	Gamma
1.05270e+00	1.783e-02	Gamma
1.25240e+00	4.495e-02	Gamma

1.26340e+00	5.115e-02	Gamma
1.33280e+00	1.162e-02	Gamma
1.41330e+00	1.519e-01	Gamma
1.62250e+00	4.185e-02	Gamma
1.63320e+00	1.008e-02	Gamma
1.63990e+00	1.705e-02	Gamma
1.64590e+00	1.008e-02	Gamma
1.77810e+00	1.999e-01	Gamma
1.81470e+00	1.395e-02	Gamma
2.00740e+00	3.565e-02	Gamma
2.45760e+00	1.008e-02	Gamma
2.45880e+00	5.038e-02	Gamma
2.50620e+00	1.395e-02	Gamma
2.79340e+00	1.240e-02	Gamma
3.08830e+00	1.008e-02	Gamma
1.47049e+00	1.211e-02	Positron
1.60756e+00	1.360e-02	Positron
1.65767e+00	2.660e-02	Positron
1.66474e+00	4.962e-02	Positron
1.68021e+00	6.252e-02	Positron
1.73356e+00	1.062e-02	Positron
1.82845e+00	2.977e-02	Positron
1.83783e+00	1.508e-01	Positron
1.84645e+00	3.969e-02	Positron
1.93916e+00	3.305e-02	Positron
2.11975e+00	2.382e-02	Positron
2.13350e+00	3.602e-01	Positron
2.21156e+00	3.870e-02	Positron
2.44989e+00	6.947e-02	Positron
2.82188e+00	4.267e-02	Positron
1.41918e-05	5.151e-02	Auger electron
5.27750e-05	1.891e-02	Auger electron
1.07870e-03	1.535e-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