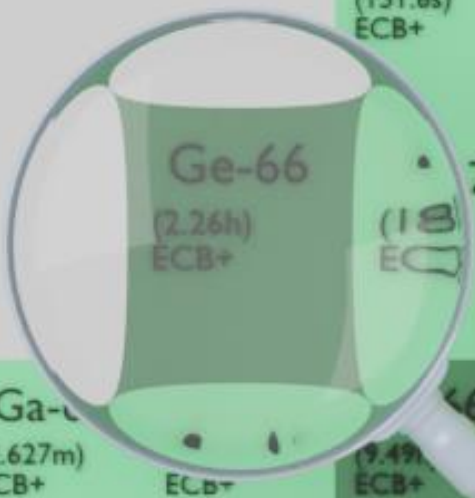




As-66 (151.6s) ECB+	As-67 (15.23m) ECB+	As-70 (52.6m) ECB+	As-71 (65.28h) ECB+	
Ge-66 (2.26h) ECB+	Ge-67 (18.7d) EC	Ge-68 (270.95d) EC	Ge-69 (39.05h) ECB+	Ge-70 (STABLE)
Ga-66 (2.627m) ECB+	Ga-67 (3.2612d) EC	Ga-68 (67.71m) ECB+	Ga-69 (STABLE)	Ga-70 (STABLE)

GERMANIUM-66

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Ge-66
Atomic number (Z): 32
Mass number (A): 66
Neutron number (N): 34

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 2.26 [h]
Decay constant: 8.5195×10^{-5} [1/s]
Daughters: Ga-66 (100.0%)
Radioactive daughters: Ga-66

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.09835 [MeV]
Mean photon energy: 0.67803 [MeV]
Air kerma rate constant, Γ_{10} : 1.956×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 2.864×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 1.576×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000×10^0 [Gy $\cdot$ kg/Bq $\cdot$ s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 1.576×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.086×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

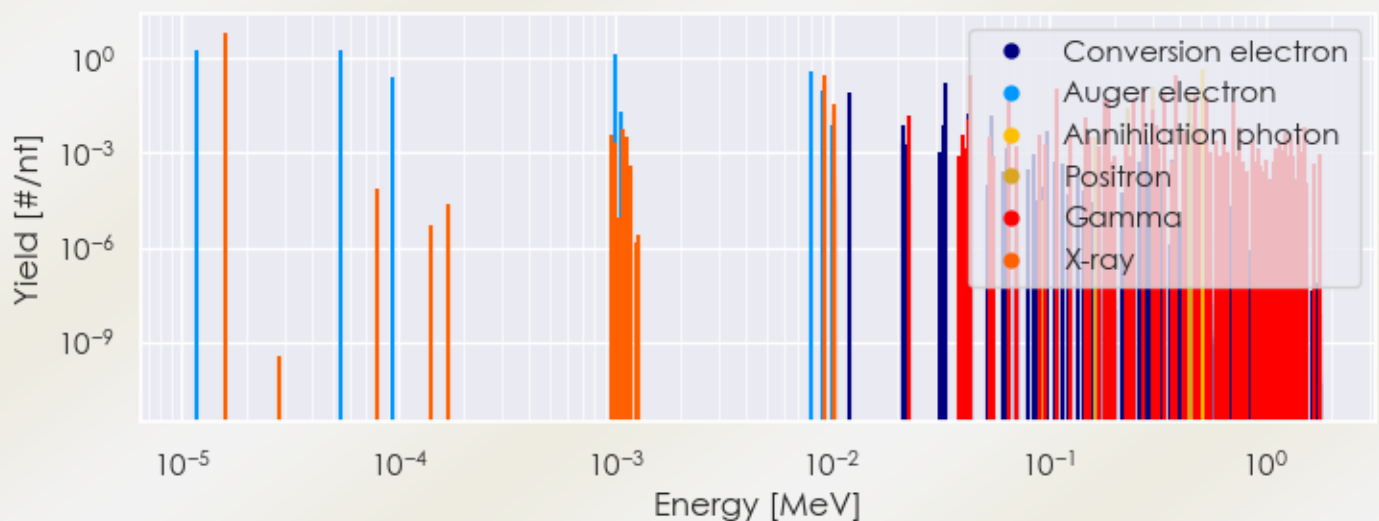
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Ge-66 DPK.csv

SUMMARY SPECTRA (PLOT)

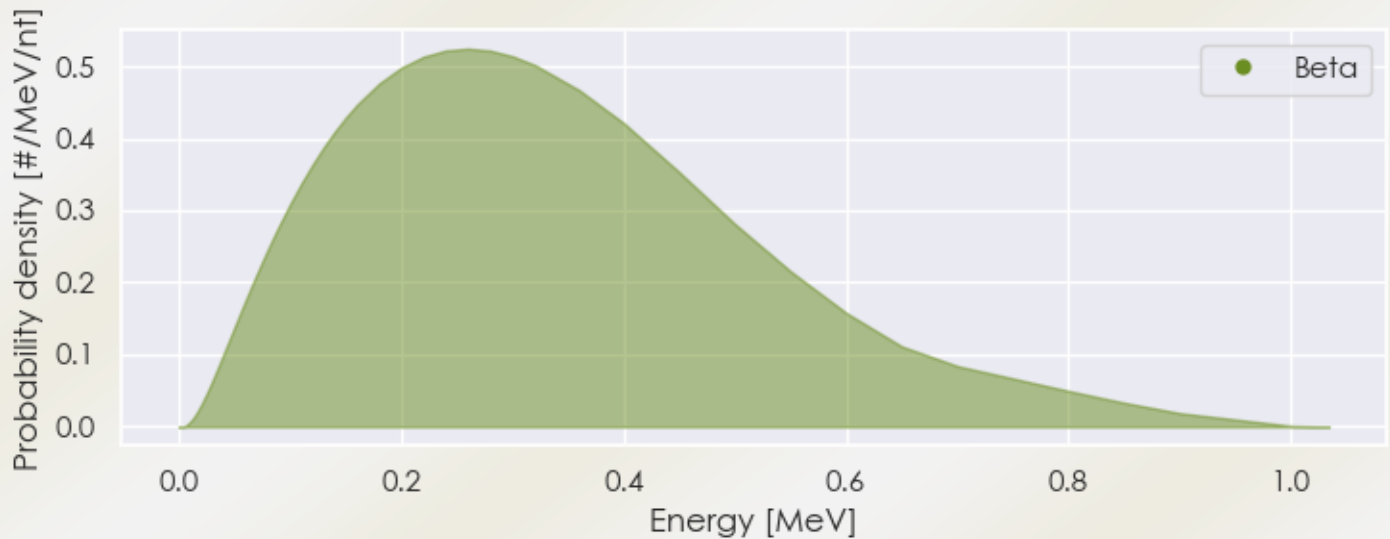
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Ge-66 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/Ge-66 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/Ge-66 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.57856e-05	6.849e+00	X-ray
9.18060e-03	1.458e-01	X-ray
9.20900e-03	2.834e-01	X-ray
1.02200e-02	1.842e-02	X-ray
1.02237e-02	3.600e-02	X-ray
2.24300e-02	1.562e-02	Gamma
4.28300e-02	1.116e-02	Gamma
4.38900e-02	2.874e-01	Gamma
6.51200e-02	7.087e-02	Gamma
1.08850e-01	1.043e-01	Gamma

1.47790e-01	1.283e-02	Gamma
1.82030e-01	5.636e-02	Gamma
1.90200e-01	5.664e-02	Gamma
2.45710e-01	5.357e-02	Gamma
2.72970e-01	1.043e-01	Gamma
3.02520e-01	2.483e-02	Gamma
3.38050e-01	8.649e-02	Gamma
3.81850e-01	2.790e-01	Gamma
4.70620e-01	7.366e-02	Gamma
4.72000e-01	3.236e-02	Gamma
5.11000e-01	4.691e-01	Annihilation photon
5.36740e-01	6.110e-02	Gamma
7.05940e-01	4.241e-02	Gamma
2.33326e-01	2.670e-02	Positron
2.99323e-01	1.196e-01	Positron
4.46390e-01	7.218e-02	Positron
1.17411e-05	1.883e+00	Auger electron
5.44369e-05	1.726e+00	Auger electron
9.43818e-05	2.576e-01	Auger electron
1.00287e-03	1.367e+00	Auger electron
1.05258e-03	2.117e-02	Auger electron
7.99646e-03	3.814e-01	Auger electron
9.04875e-03	1.007e-01	Auger electron
1.20969e-02	7.931e-02	Conversion electron
3.35569e-02	1.801e-01	Conversion electron
4.25993e-02	1.819e-02	Conversion electron
5.47869e-02	1.487e-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