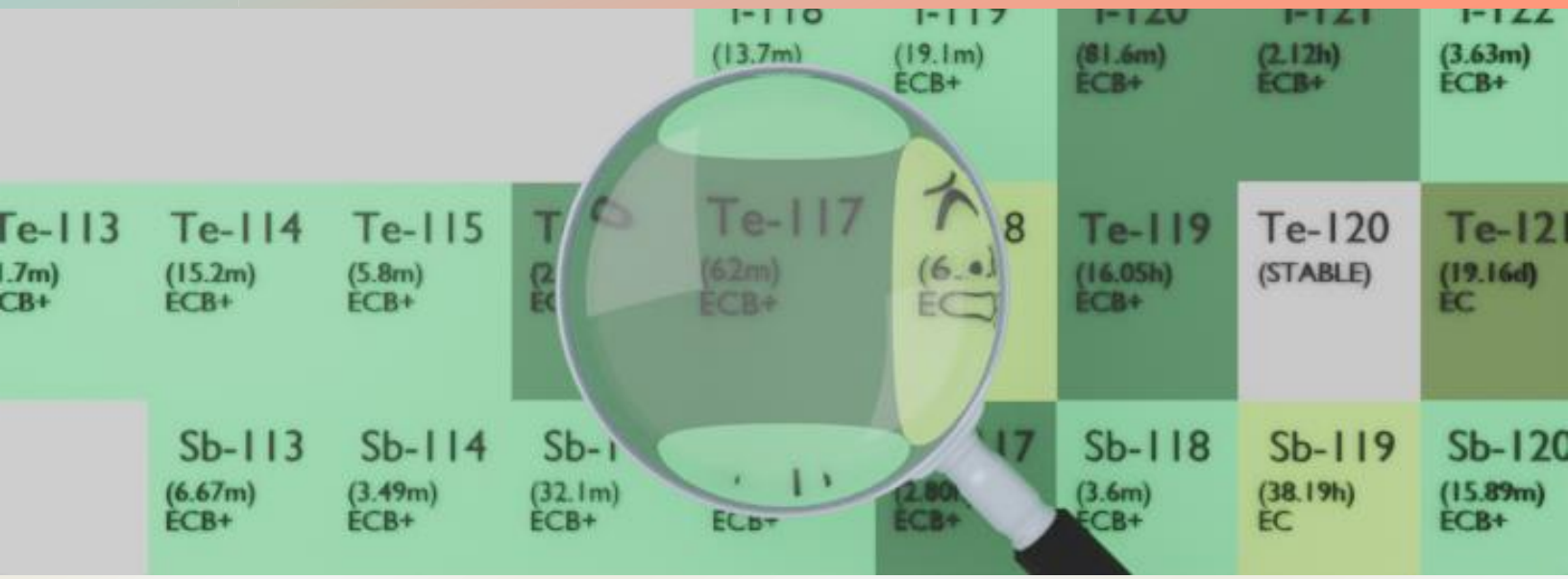


TELLURIUM-117

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Te-117
Atomic number (Z): 52
Mass number (A): 117
Neutron number (N): 65

RADIOACTIVE DECAY

Decay modes: β+, Electron capture
Half-life: 62.0 [m]
Decay constant: 1.8633e-04 [1/s]
Daughters: Sb-117 (100.0%)
Radioactive daughters: Sb-117

DOSIMETRIC CONSTANTS

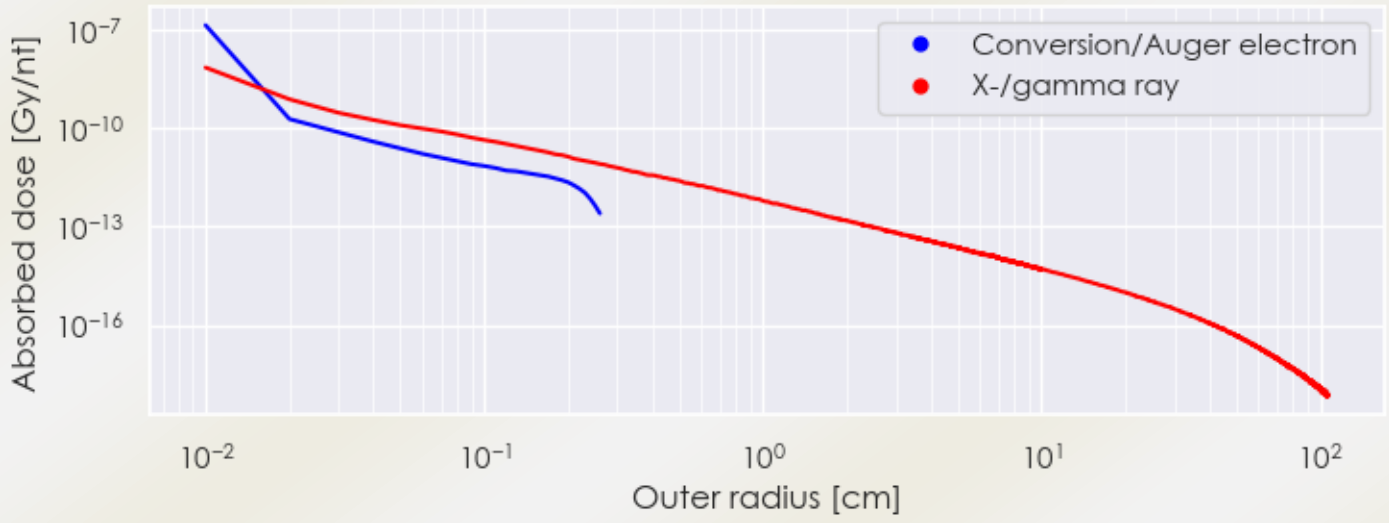
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.21387 [MeV]
Mean photon energy: 1.54921 [MeV]
Air kerma rate constant, Γ_{10}*:* 4.655e-17 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}*:* 5.692e-17 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}*:* 3.427e-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, $\Delta_{\beta-,\beta+,e-}$: 3.427e-14 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 2.482e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

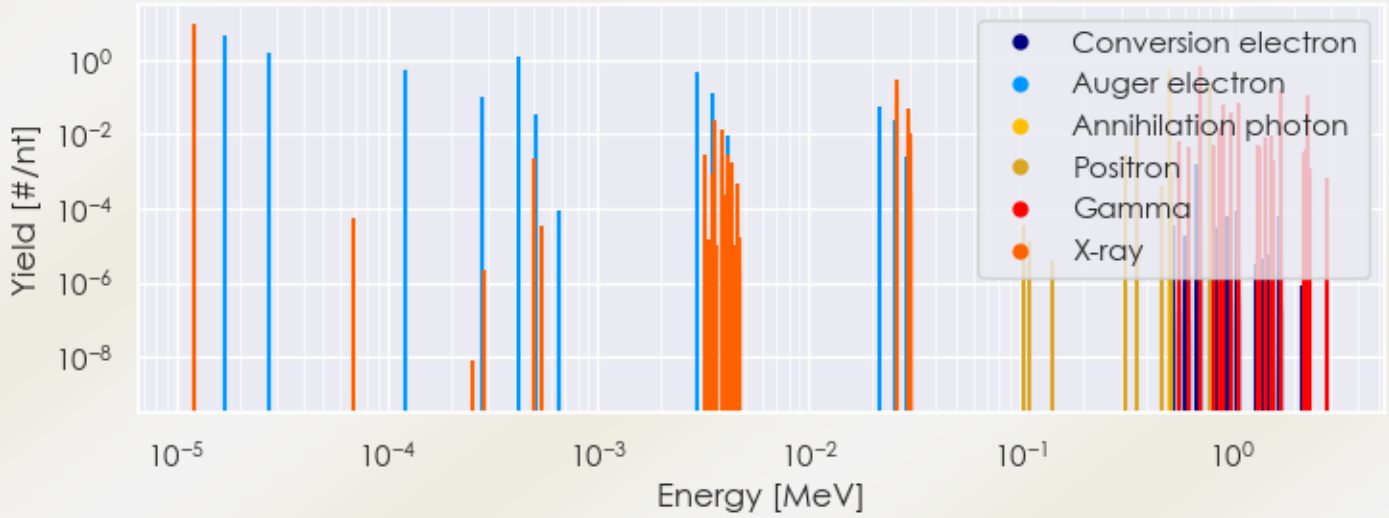
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Te-117 DPK.csv

SUMMARY SPECTRA (PLOT)

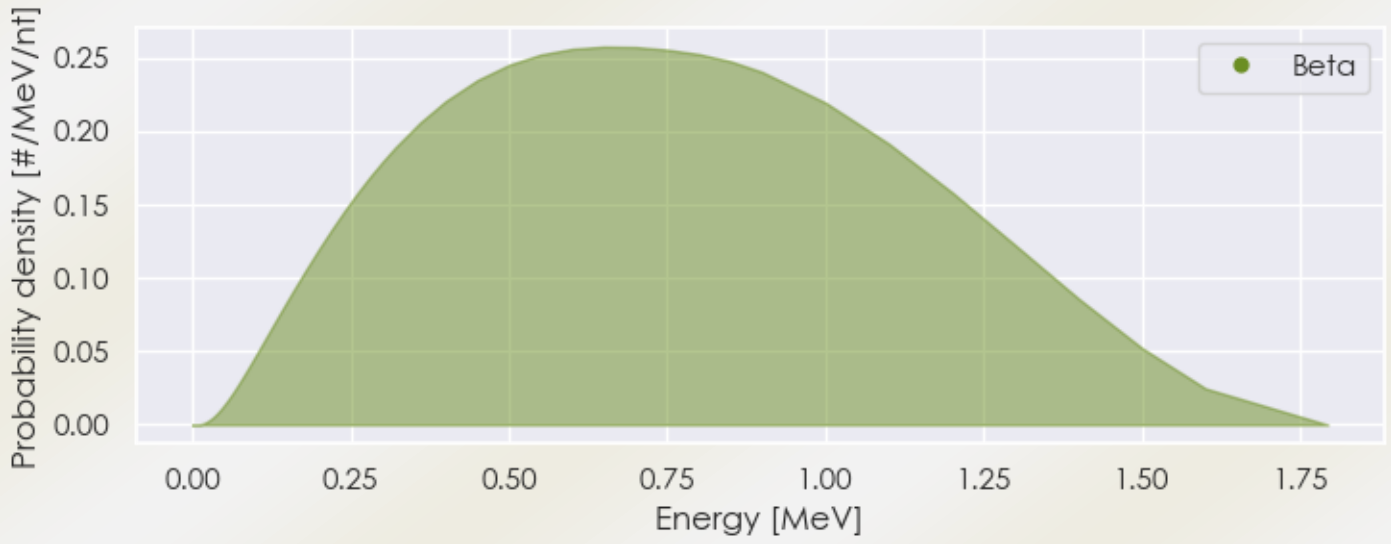
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Te-117 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/Te-117 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/Te-117 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.22327e-05	9.737e+00	X-ray
3.59266e-03	2.354e-02	X-ray
3.83820e-03	1.345e-02	X-ray
2.60930e-02	1.576e-01	X-ray
2.63486e-02	2.942e-01	X-ray
2.96698e-02	2.682e-02	X-ray
2.97173e-02	5.204e-02	X-ray
3.03709e-02	1.082e-02	X-ray
5.11000e-01	5.360e-01	Annihilation photon
7.19700e-01	6.470e-01	Gamma

8.86700e-01	1.488e-02	Gamma
9.23900e-01	6.211e-02	Gamma
9.96700e-01	3.947e-02	Gamma
1.09070e+00	6.858e-02	Gamma
1.71640e+00	1.585e-01	Gamma
2.30000e+00	1.119e-01	Gamma
3.59314e-01	1.009e-02	Positron
7.10728e-01	1.598e-02	Positron
8.02941e-01	2.377e-01	Positron
1.68962e-05	4.793e+00	Auger electron
2.73576e-05	1.618e+00	Auger electron
1.21998e-04	5.420e-01	Auger electron
2.83627e-04	9.844e-02	Auger electron
4.22556e-04	1.213e+00	Auger electron
5.04974e-04	3.674e-02	Auger electron
2.96529e-03	4.776e-01	Auger electron
3.52013e-03	1.293e-01	Auger electron
2.17904e-02	5.497e-02	Auger electron
2.54497e-02	2.381e-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