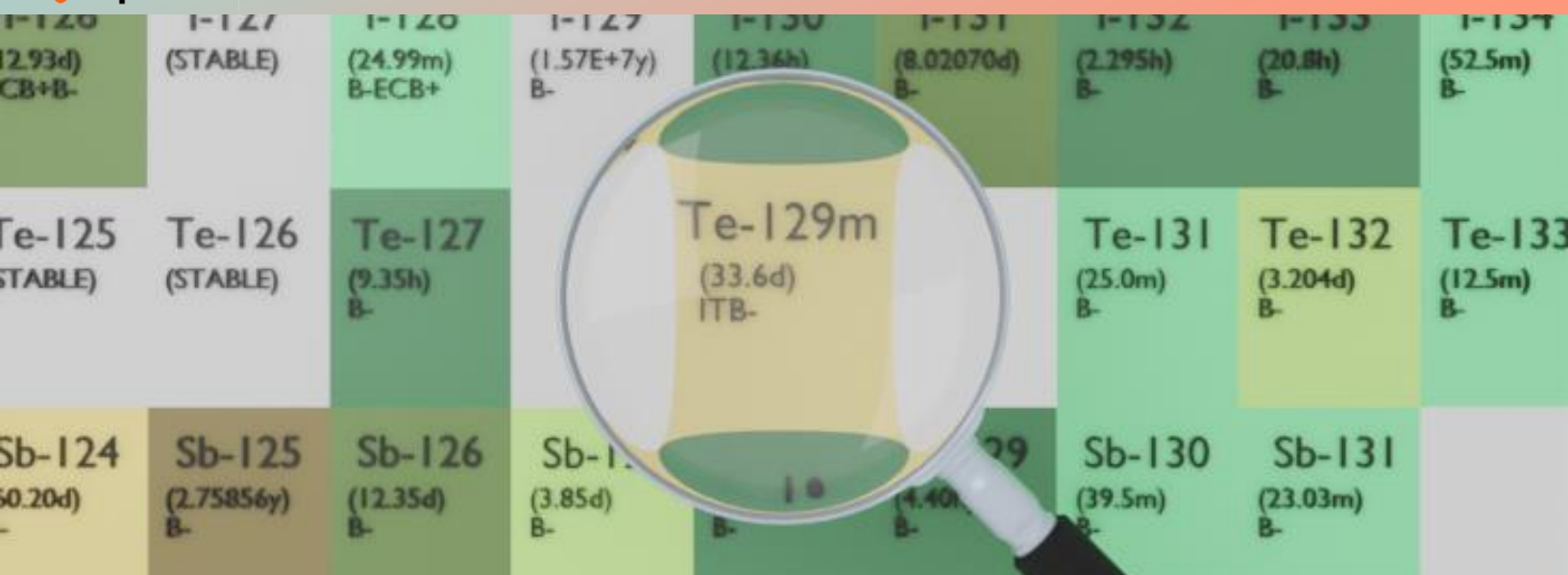




TELLURIUM-129M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Te-129m
Atomic number (Z): 52
Mass number (A): 129
Neutron number (N): 77

RADIOACTIVE DECAY

Decay modes: β^- , Internal transition
Half-life: 33.6 [d]
Decay constant: 2.3877×10^{-7} [1/s]
Daughters: Te-129 (63.0%), I-129 (37.0%)
Radioactive daughters: Te-129, I-129

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.27088 [MeV]
Mean photon energy: 0.03757 [MeV]
Air kerma rate constant, Γ_{10} : 2.968×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 2.968×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 4.340×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

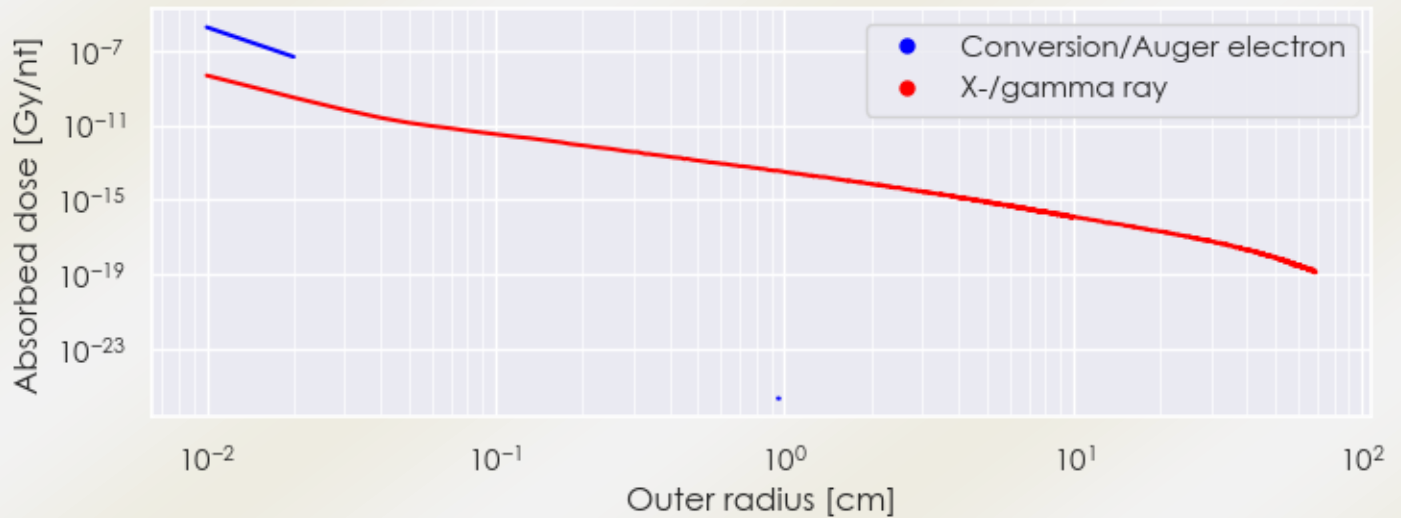
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 4.340e-14 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 6.019e-15 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

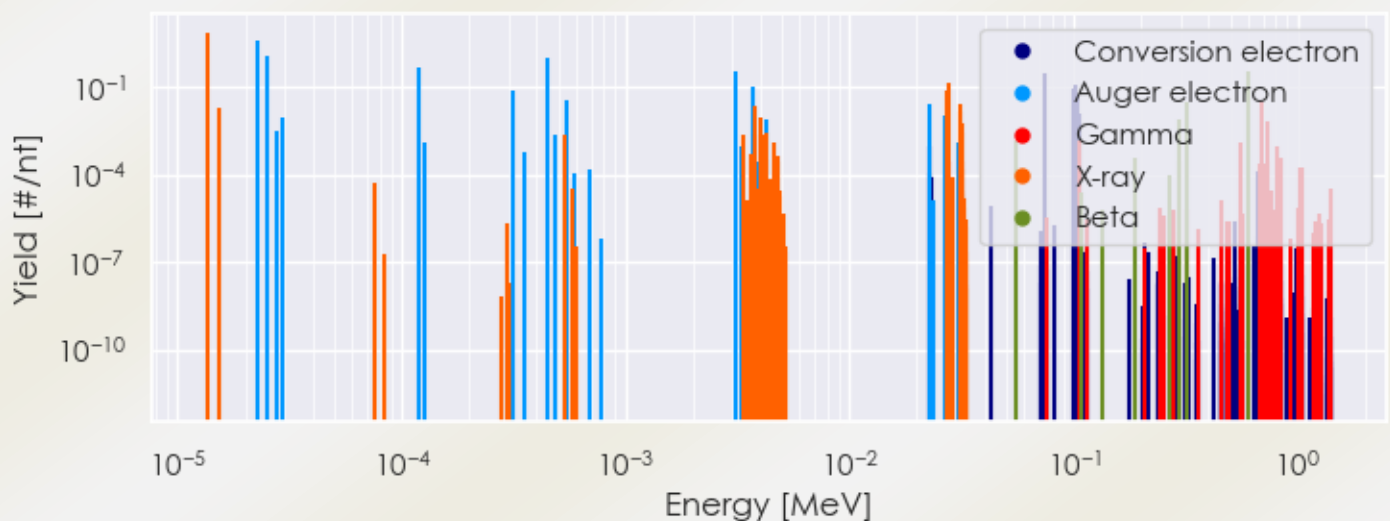
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Te-129m DPK.csv

SUMMARY SPECTRA (PLOT)

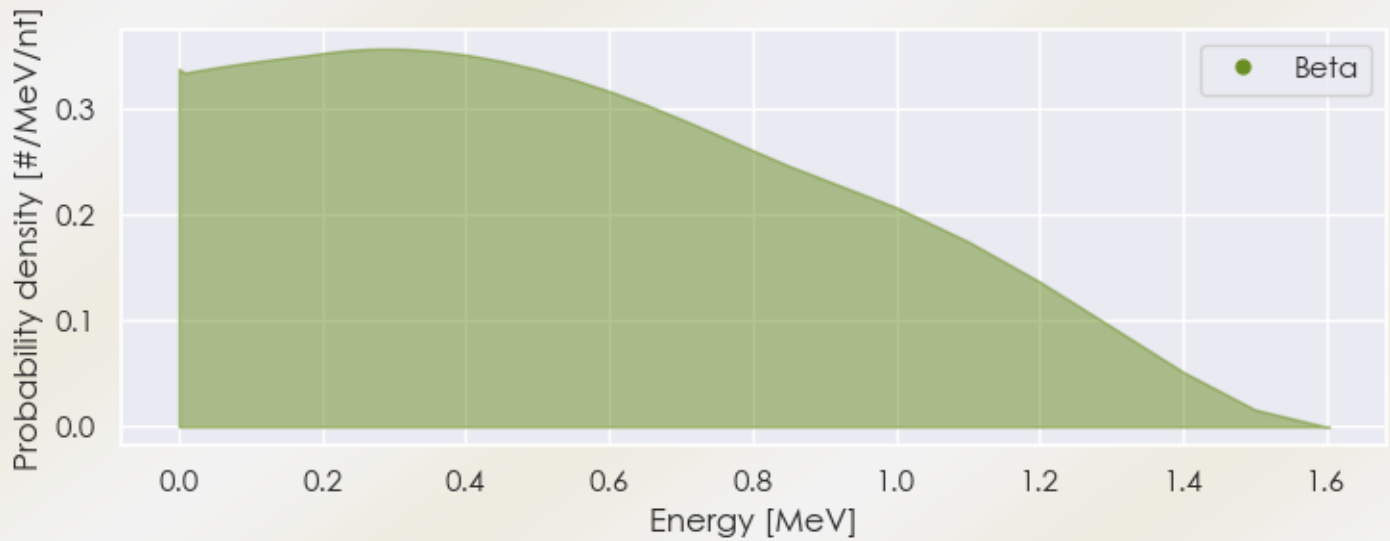
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Te-129m 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-129m Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Te-129m%20Beta%20Spectrum.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-129m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Te-129m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.36119e-05	7.728e+00	X-ray
1.52508e-05	2.023e-02	X-ray
3.75695e-03	2.123e-02	X-ray
2.71868e-02	7.894e-02	X-ray
2.74652e-02	1.469e-01	X-ray
3.09378e-02	1.353e-02	X-ray
3.09901e-02	2.624e-02	X-ray
6.95880e-01	3.071e-02	Gamma
3.22731e-01	3.102e-02	Beta

6.07149e-01	3.293e-01	Beta
2.29207e-05	3.776e+00	Auger electron
2.48672e-05	1.269e+00	Auger electron
1.19996e-04	4.407e-01	Auger electron
3.11012e-04	8.233e-02	Auger electron
4.49791e-04	9.645e-01	Auger electron
5.42198e-04	3.727e-02	Auger electron
3.07809e-03	3.748e-01	Auger electron
3.67246e-03	1.061e-01	Auger electron
2.26653e-02	2.551e-02	Auger electron
2.65056e-02	1.124e-02	Auger electron
7.36950e-02	3.127e-01	Conversion electron
1.00586e-01	9.433e-02	Conversion electron
1.00882e-01	2.181e-02	Conversion electron
1.01160e-01	1.291e-01	Conversion electron
1.04685e-01	5.744e-02	Conversion electron
1.05500e-01	1.315e-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