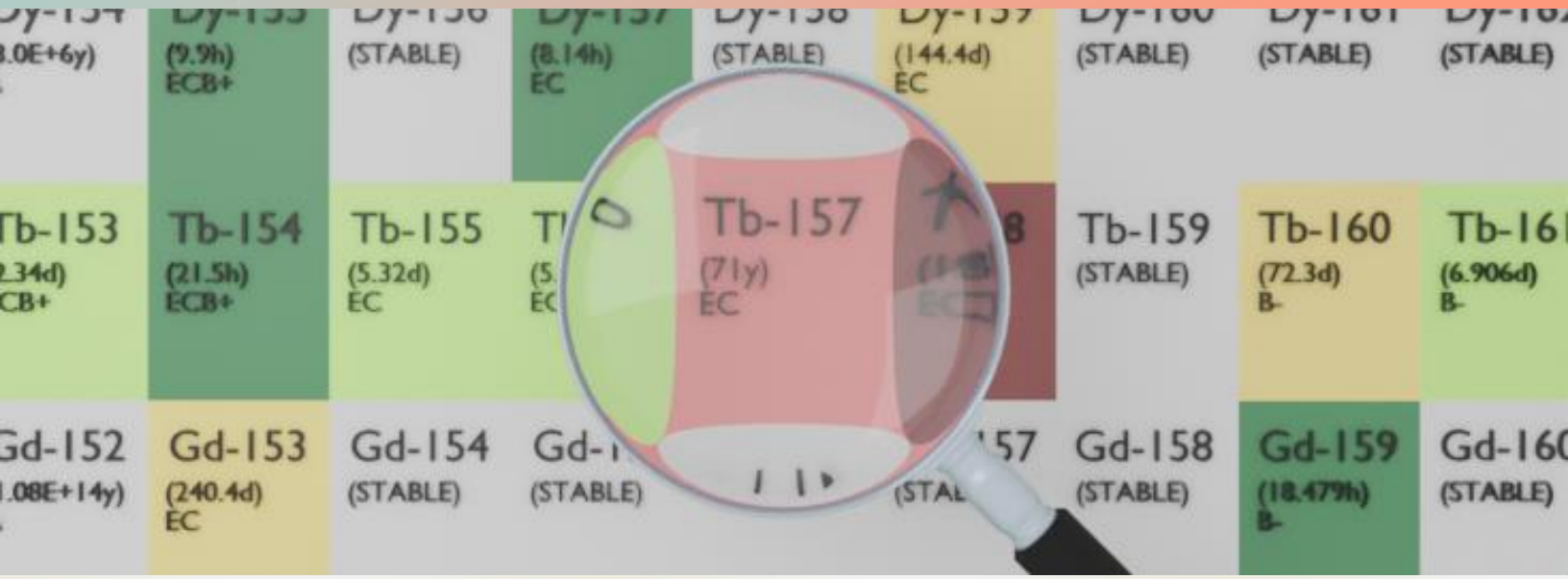


TERBIUM-157

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Tb-157
Atomic number (Z): 65
Mass number (A): 157
Neutron number (N): 92

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 71.0 [y]
Decay constant: 3.0937e-10 [1/s]
Daughters: Gd-157 (100.0%)
Radioactive daughters: None

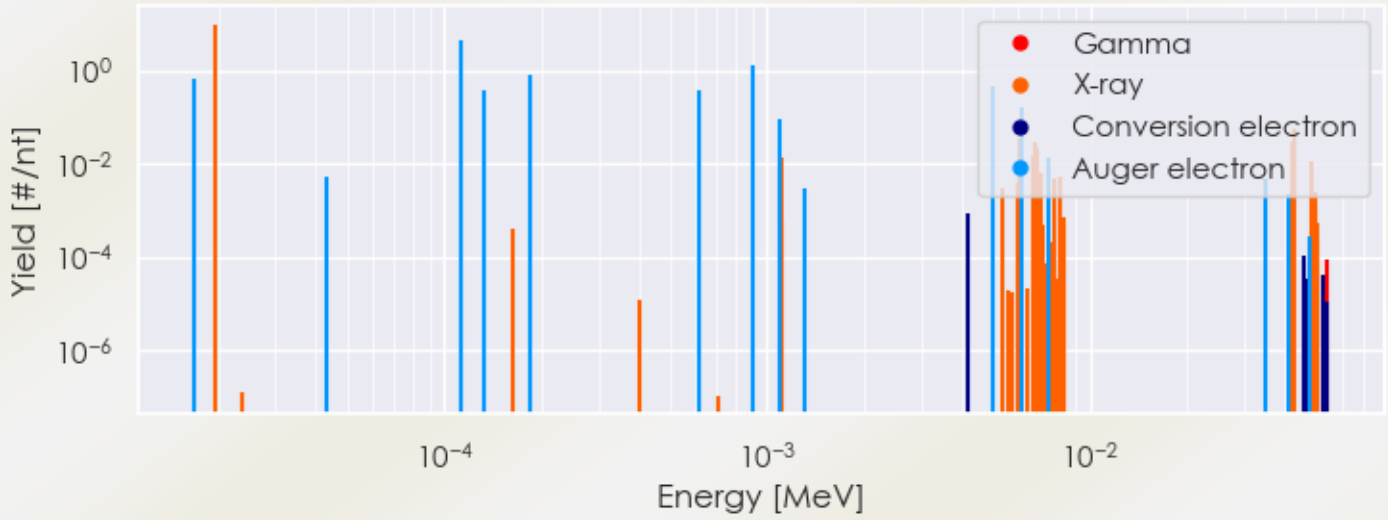
DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.00573 [MeV]
Mean photon energy: 0.00565 [MeV]
Air kerma rate constant, Γ_{10}: 3.179e-19 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 3.179e-19 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 9.180e-16 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta^-,\beta^+,e^-}$: 9.180e-16 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_p: 9.052e-16 [Gy·kg/Bq·s]

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/Tb-157 Summary 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/Tb-157 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.94941e-05	9.650e+00	X-ray
1.10719e-03	1.280e-02	X-ray
6.04290e-03	3.543e-02	X-ray
6.66291e-03	1.498e-02	X-ray
6.71540e-03	2.776e-02	X-ray
6.80799e-03	2.137e-02	X-ray

4.23559e-02	2.982e-02	X-ray
4.30603e-02	5.362e-02	X-ray
4.87612e-02	1.054e-02	X-ray
1.68638e-05	6.819e-01	Auger electron
1.12893e-04	4.377e+00	Auger electron
1.32216e-04	3.668e-01	Auger electron
1.84163e-04	8.268e-01	Auger electron
6.11362e-04	3.781e-01	Auger electron
9.07973e-04	1.255e+00	Auger electron
1.10005e-03	8.783e-02	Auger electron
4.98389e-03	4.421e-01	Auger electron
6.16354e-03	1.569e-01	Auger electron
7.38996e-03	1.390e-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