



TERBIUM-156N

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Tb-156n
Atomic number (Z): 65
Mass number (A): 156
Neutron number (N): 91

RADIOACTIVE DECAY

Decay modes: Internal transition
Half-life: 5.3 [h]
Decay constant: 3.6328×10^{-5} [1/s]
Daughters: Tb-156 (100.0%)
Radioactive daughters: Tb-156

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.08738 [MeV]
Mean photon energy: 0.00476 [MeV]
Air kerma rate constant, Γ_{10} : 1.961×10^{-19} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 1.961×10^{-19} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 1.400×10^{-14} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000 \times 10^{+00}$ [Gy $\cdot$ kg/Bq $\cdot$ s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 1.400×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 7.626×10^{-16} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

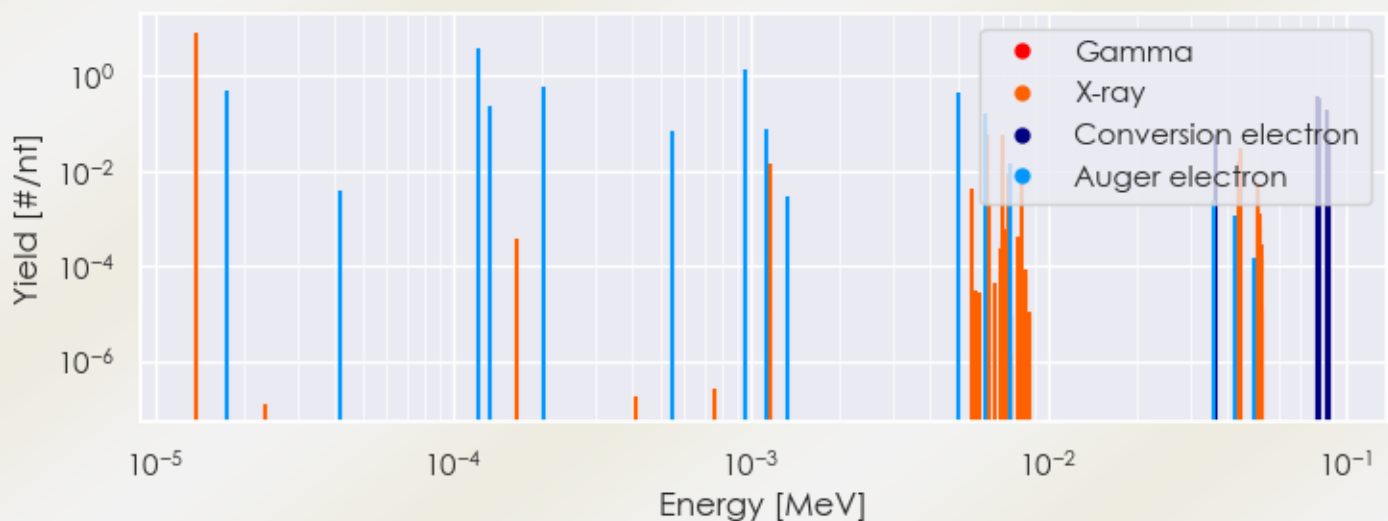
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Tb-156n 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/Tb-156n 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-156n Summary Spectrum.csv

Energy [MeV]	Yield [# /n _t] if > 0.01	Radiation type
1.38078e-05	8.311e+00	X-ray
1.15978e-03	1.446e-02	X-ray
6.26069e-03	5.578e-02	X-ray
6.98190e-03	5.998e-02	X-ray
8.10032e-03	1.047e-02	X-ray
4.37992e-02	1.626e-02	X-ray
4.45546e-02	2.914e-02	X-ray
8.84000e-02	1.170e-02	Gamma
1.73725e-05	4.874e-01	Auger electron
1.21989e-04	3.795e+00	Auger electron
1.32551e-04	2.377e-01	Auger electron
2.01492e-04	5.953e-01	Auger electron
5.45700e-04	6.893e-02	Auger electron
9.61394e-04	1.314e+00	Auger electron
1.13560e-03	7.451e-02	Auger electron
4.97374e-03	4.598e-01	Auger electron
6.17870e-03	1.608e-01	Auger electron
7.41657e-03	1.413e-02	Auger electron
3.63400e-02	6.040e-02	Conversion electron
8.01391e-02	3.761e-01	Conversion electron
8.08947e-02	3.511e-01	Conversion electron
8.68032e-02	1.862e-01	Conversion electron
8.84000e-02	4.893e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6