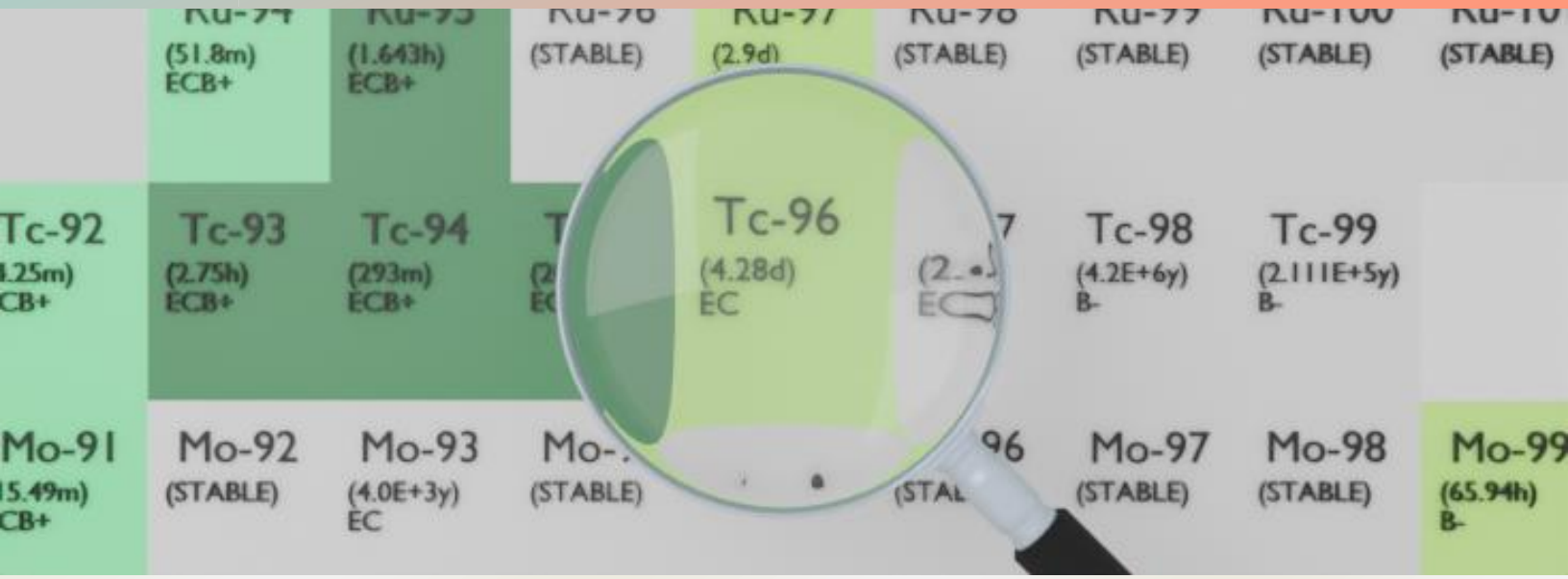


TECHNETIUM-96

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Tc-96
Atomic number (Z): 43
Mass number (A): 96
Neutron number (N): 53

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 4.28 [d]
Decay constant: 1.8744e-06 [1/s]
Daughters: Mo-96 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

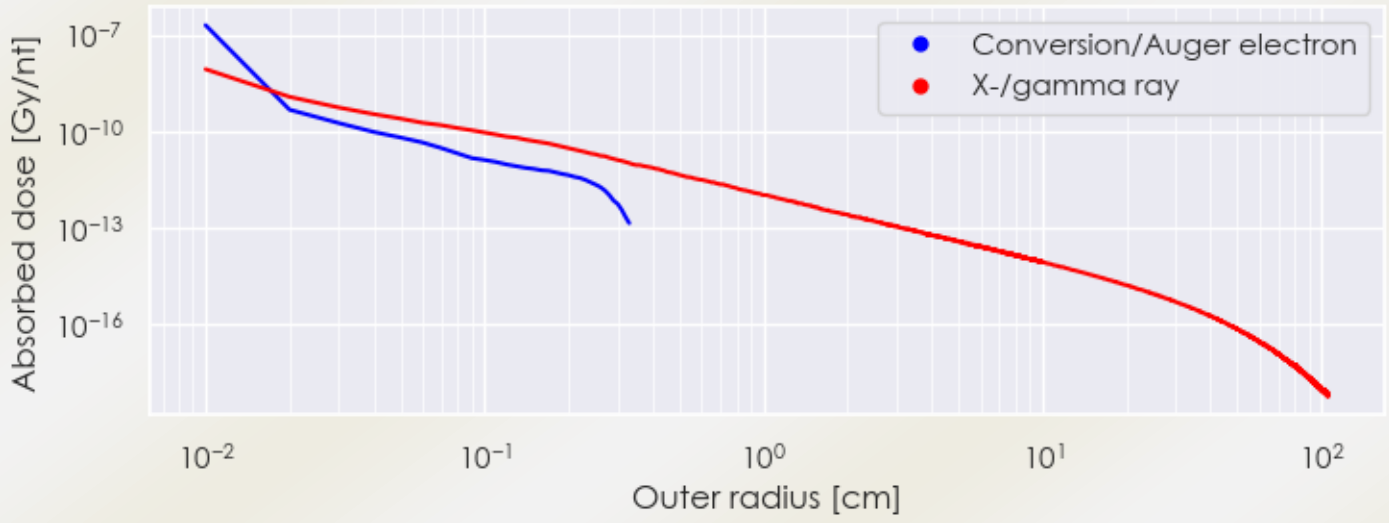
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.00887 [MeV]
Mean photon energy: 2.5032 [MeV]
Air kerma rate constant, Γ_{10}: 1.030e-16 [Gy·m^2/Bq·s]
Air kerma coefficient, K_{air}: 1.030e-16 [Gy·m^2/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}: 1.421e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}: 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 1.421e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 4.011e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

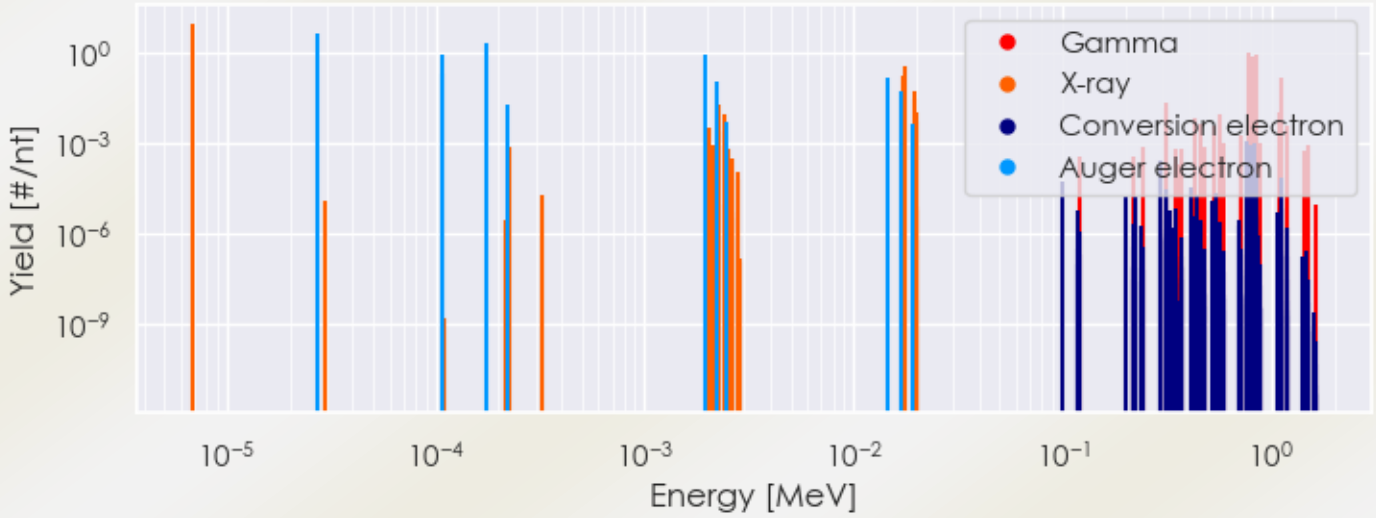
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Tc-96 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/Tc-96 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/Tc-96 Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
6.84800e-06	1.012e+01	X-ray
2.28400e-03	2.086e-02	X-ray
1.73355e-02	1.911e-01	X-ray
1.74440e-02	3.641e-01	X-ray
1.95554e-02	2.967e-02	X-ray
1.95734e-02	5.775e-02	X-ray
1.99225e-02	1.056e-02	X-ray
3.14270e-01	2.434e-02	Gamma
3.16500e-01	1.397e-02	Gamma
7.78220e-01	9.976e-01	Gamma
8.12540e-01	8.200e-01	Gamma
8.49860e-01	9.757e-01	Gamma
1.09130e+00	1.097e-02	Gamma
1.12685e+00	1.516e-01	Gamma
2.73590e-05	4.690e+00	Auger electron
1.06596e-04	8.917e-01	Auger electron
1.07076e-04	2.027e-01	Auger electron
1.76261e-04	2.136e+00	Auger electron
2.18247e-04	2.048e-02	Auger electron
1.95206e-03	8.491e-01	Auger electron
2.20144e-03	1.203e-01	Auger electron
1.47064e-02	1.456e-01	Auger electron
1.69714e-02	5.395e-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