



The image shows a portion of a periodic table of radionuclides. A magnifying glass is positioned over the entry for Te-123m, which is highlighted in yellow. The entry for Te-123m shows a half-life of (119.25d) and a decay mode of IT. Other visible entries include Te-119, Te-120, Te-121, Te-124, Te-125, Te-126, Te-127, Te-128, Sb-118, Sb-119, Sb-120, Sb-123, Sb-124, Sb-125, and Sb-126, each with their respective half-lives and decay modes.

Isotope	Half-life	Decay Mode
Te-119	(16.05h)	CB+
Te-120	(STABLE)	
Te-121	(19.16d)	EC
Te-123m	(119.25d)	IT
Te-124	(STABLE)	
Te-125	(STABLE)	
Te-126	(STABLE)	
Te-127	(STABLE)	
Te-128	(24.99m)	B-ECB+
Sb-118	(4.6m)	CB+
Sb-119	(38.19h)	EC
Sb-120	(15.89m)	ECB+
Sb-123	(STABLE)	
Sb-124	(60.20d)	B-
Sb-125	(2.75856y)	B-
Sb-126	(12.35d)	B-

TELLURIUM-123M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Te-123m
Atomic number (Z): 52
Mass number (A): 123
Neutron number (N): 71

RADIOACTIVE DECAY

Decay modes: Internal transition
Half-life: 119.2 [d]
Decay constant: 6.7275×10^{-8} [1/s]
Daughters: Te-123 (100.0%)
Radioactive daughters: Te-123

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.09899 [MeV]
Mean photon energy: 0.14772 [MeV]
Air kerma rate constant, Γ_{10} : 7.599×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 7.599×10^{-18} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 1.586×10^{-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, $\Delta_{\beta, \beta+, e-}$: 1.586×10^{-14} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 2.367×10^{-14} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

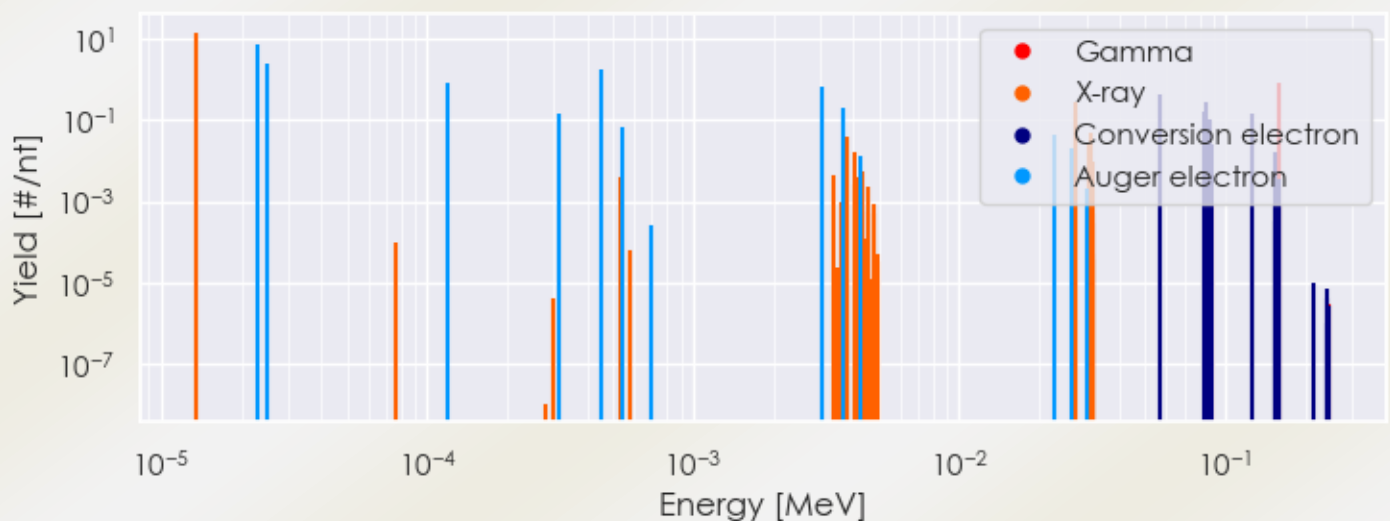
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Te-123m 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-123m 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/Te-123m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Te-123m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.36122e-05	1.409e+01	X-ray
3.75695e-03	3.929e-02	X-ray
4.02446e-03	1.605e-02	X-ray
2.71868e-02	1.393e-01	X-ray
2.74652e-02	2.593e-01	X-ray
3.09378e-02	2.388e-02	X-ray
3.09901e-02	4.631e-02	X-ray
1.58960e-01	8.401e-01	Gamma
2.29185e-05	6.883e+00	Auger electron
2.48588e-05	2.312e+00	Auger electron
1.19876e-04	8.029e-01	Auger electron
3.11758e-04	1.461e-01	Auger electron
4.49739e-04	1.760e+00	Auger electron
5.42077e-04	6.801e-02	Auger electron
3.07515e-03	6.832e-01	Auger electron
3.66931e-03	1.933e-01	Auger electron
4.28602e-03	1.367e-02	Auger electron
2.26653e-02	4.502e-02	Auger electron
2.65056e-02	1.983e-02	Auger electron
5.66550e-02	4.140e-01	Conversion electron
8.35458e-02	1.524e-01	Conversion electron
8.38418e-02	3.474e-02	Conversion electron
8.41203e-02	2.587e-01	Conversion electron
8.76452e-02	1.066e-01	Conversion electron
8.84600e-02	2.430e-02	Conversion electron
1.27155e-01	1.378e-01	Conversion electron
1.54046e-01	1.648e-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