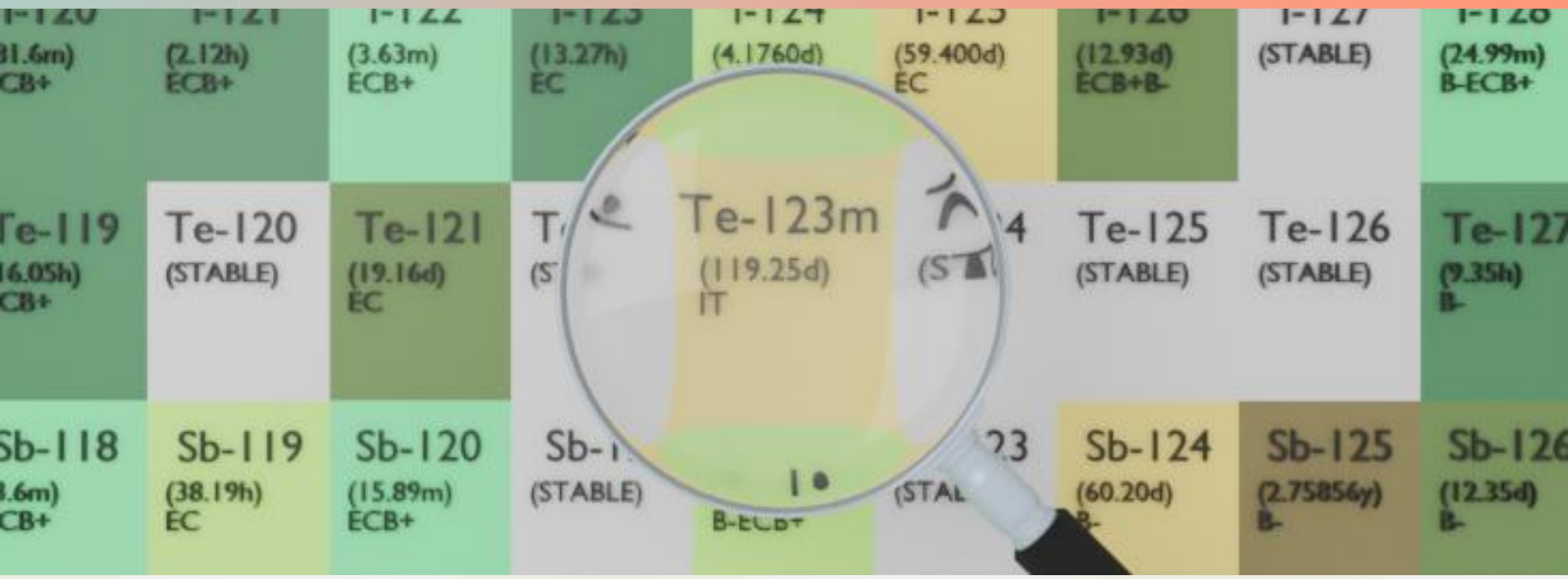



# TELLURIUM-123M

## 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:* 6.7275e-08 [1/s]
*Daughters:* Te-123 (100.0%)
*Radioactive daughters:* Te-123

#### DOSIMETRIC CONSTANTS

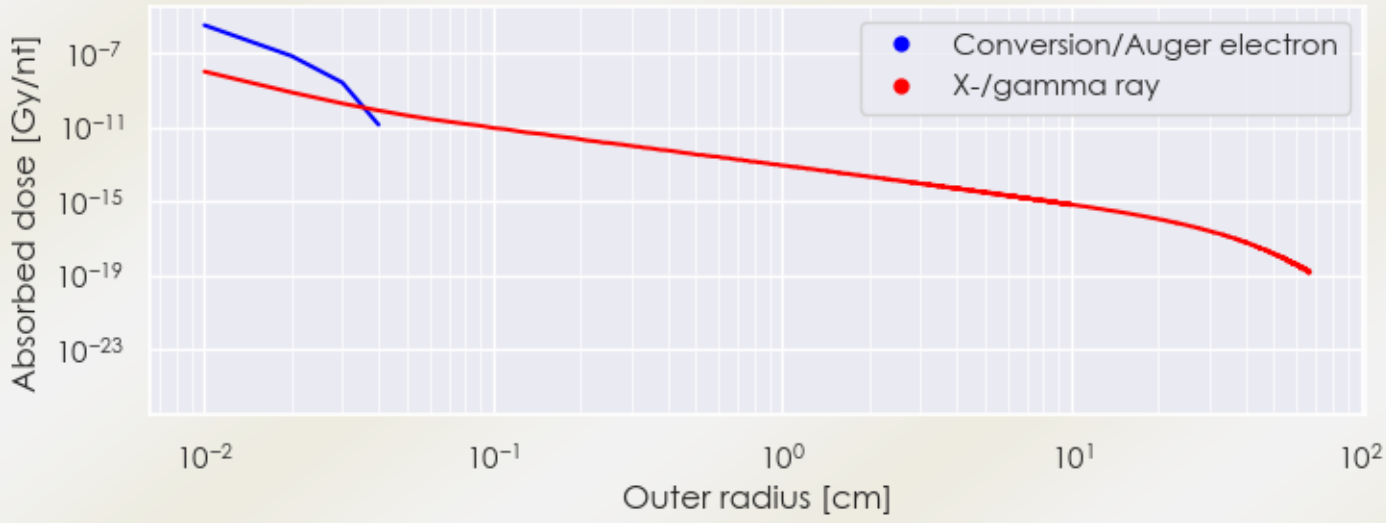
*Mean alpha energy:* 0.0 [MeV]
*Mean electron energy:* 0.09899 [MeV]
*Mean photon energy:* 0.14772 [MeV]
*Air kerma rate constant, $\Gamma_{10}$:* 7.599e-18 [Gy·m$^2$/Bq·s]
*Air kerma coefficient, $K_{air}$:* 7.599e-18 [Gy·m$^2$/Bq·s]
*Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), $\Delta_{wp}$:* 1.586e-14 [Gy·kg/Bq·s]
*Equilibrium dose constant for alphas, $\Delta_{a}$:* 0.000e+00 [Gy·kg/Bq·s]

*Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$:* 1.586e-14 [Gy·kg/Bq·s]
*Equilibrium dose constant for photons, $\Delta_{p}$:* 2.367e-14 [Gy·kg/Bq·s]

## DOSE POINT KERNELS (PLOT)

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

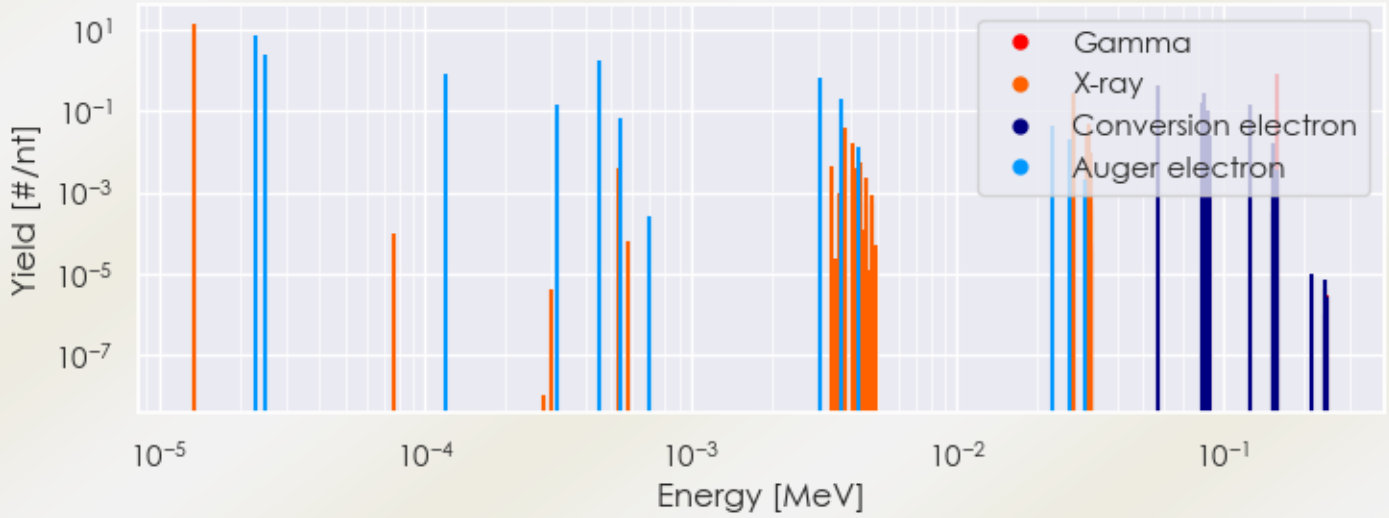
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.




*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

| 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/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6