



IODINE-120M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: I-120m
Atomic number (Z): 53
Mass number (A): 120
Neutron number (N): 67

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 53.0 [m]
Decay constant: 2.1797×10^{-4} [1/s]
Daughters: Te-120 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

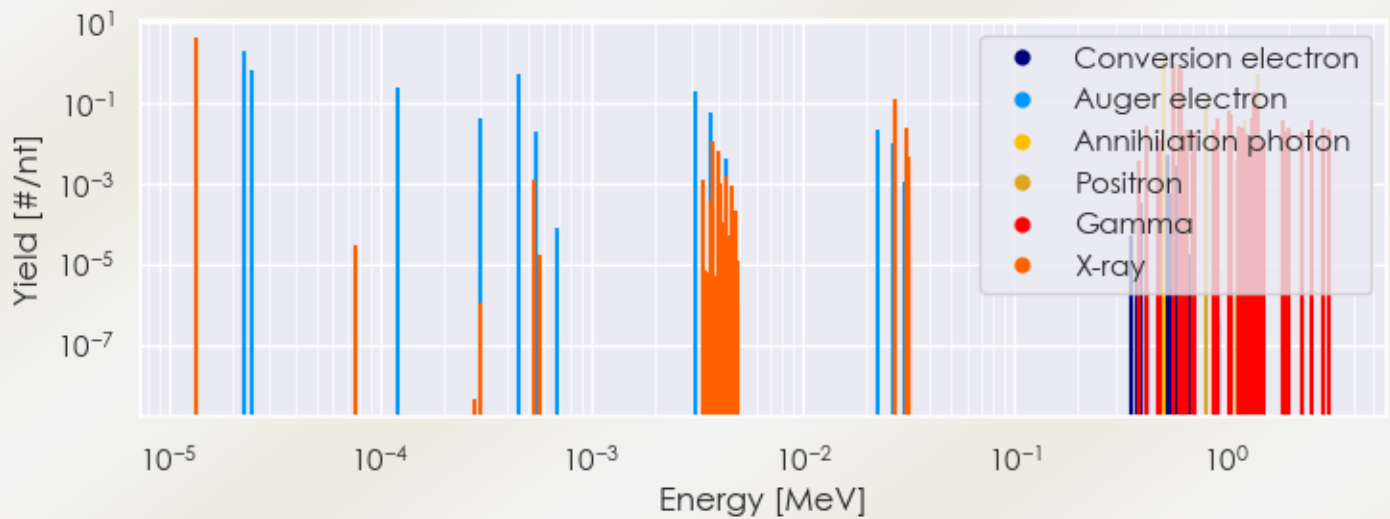
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.90697 [MeV]
Mean photon energy: 3.52483 [MeV]
Air kerma rate constant, Γ_{10} : 1.007×10^{-16} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 1.275×10^{-16} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 1.453×10^{-13} [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, $\Delta_{\beta-, \beta+, e-}$: 1.453×10^{-13} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 5.647×10^{-13} [Gy·kg/Bq·s]

SUMMARY SPECTRA (PLOT)

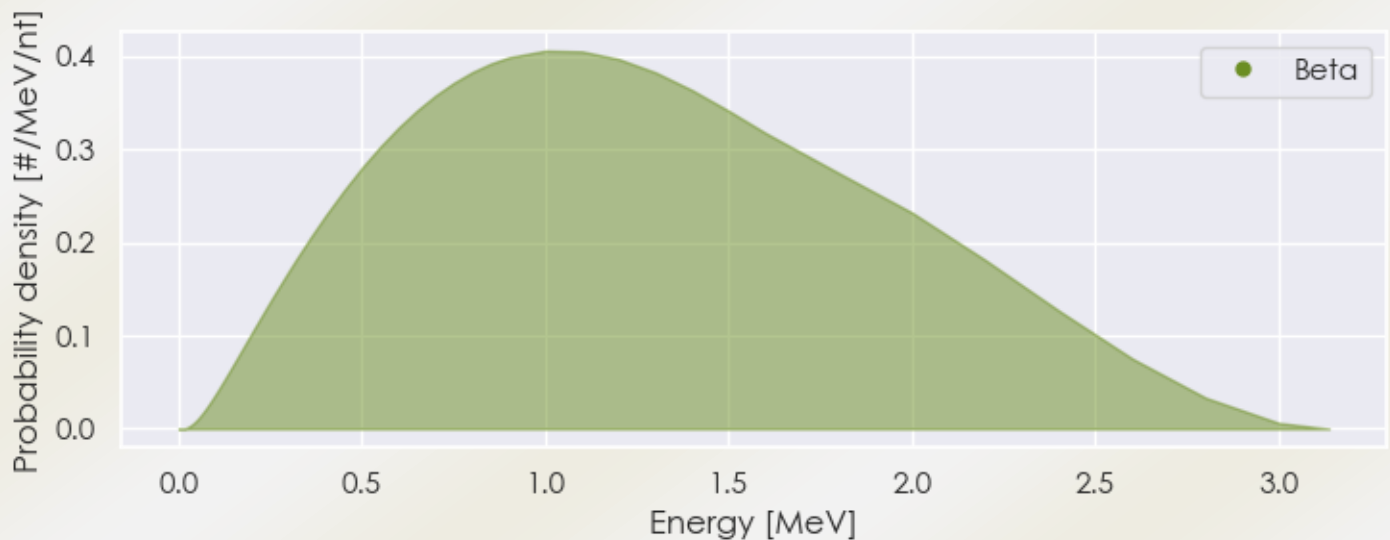
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/I-120m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/I-120m%20Summary%20Spectrum.csv)

BETA SPECTRA (PLOT)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated beta spectra file here: [www.mirdsoft.org/products/MIRDspecs/I-120m Beta Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/I-120m%20Beta%20Spectrum.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/I-120m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/I-120m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
1.36107e-05	4.144e+00	X-ray
3.75695e-03	1.096e-02	X-ray
2.71868e-02	6.991e-02	X-ray
2.74652e-02	1.301e-01	X-ray
3.09378e-02	1.198e-02	X-ray
3.09901e-02	2.324e-02	X-ray
4.25700e-01	2.800e-02	Gamma
4.77900e-01	1.200e-02	Gamma
4.85100e-01	1.200e-02	Gamma
5.11000e-01	1.383e+00	Annihilation photon
5.60400e-01	1.000e+00	Gamma
6.01100e-01	8.700e-01	Gamma
6.14700e-01	3.100e-02	Gamma
6.14700e-01	6.400e-01	Gamma
6.41100e-01	1.500e-02	Gamma
6.54500e-01	2.100e-02	Gamma
7.03900e-01	1.900e-02	Gamma
8.74700e-01	1.000e-02	Gamma
8.81800e-01	2.200e-02	Gamma
9.21300e-01	4.300e-02	Gamma
1.03150e+00	1.500e-02	Gamma
1.03990e+00	6.500e-02	Gamma
1.05920e+00	5.100e-02	Gamma
1.15800e+00	2.700e-02	Gamma
1.19730e+00	2.300e-02	Gamma
1.26130e+00	1.700e-02	Gamma
1.33460e+00	4.400e-02	Gamma
1.34590e+00	1.890e-01	Gamma

1.40500e+00	9.300e-02	Gamma
1.44110e+00	1.300e-02	Gamma
1.52300e+00	1.050e-02	Gamma
1.85140e+00	1.600e-02	Gamma
1.86830e+00	3.800e-02	Gamma
1.92280e+00	2.000e-02	Gamma
1.98820e+00	2.300e-02	Gamma
2.30540e+00	2.000e-02	Gamma
2.56060e+00	3.700e-02	Gamma
2.86430e+00	2.300e-02	Gamma
3.10510e+00	2.100e-02	Gamma
8.02418e-01	1.267e-01	Positron
1.22457e+00	3.553e-02	Positron
1.42275e+00	5.253e-01	Positron
2.29233e-05	2.025e+00	Auger electron
2.49267e-05	6.762e-01	Auger electron
1.21039e-04	2.329e-01	Auger electron
2.95093e-04	4.296e-02	Auger electron
4.49467e-04	5.214e-01	Auger electron
5.41108e-04	2.009e-02	Auger electron
3.08422e-03	2.048e-01	Auger electron
3.67827e-03	5.799e-02	Auger electron
2.26653e-02	2.259e-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/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6