



Te-114 (5.2m) CB+	Te-115 (5.8m) ECB+	Te-116 (2.49h) ECB+	Te-117 (62m) ECB+	Te-118 (6.00d)	Te-119 (16.05h) ECB+	Te-120 (STABLE)	Te-121 (19.16d) EC	Te-122 (STABLE)
Sb-113 (5.67m) CB+	Sb-114 (3.49m) ECB+	Sb-115 (32.1m) ECB+	Sb-117 (2.80h) ECB+	Sb-118 (3.1h) EC	Sb-119 (38.19h) EC	Sb-120 (15.89m) ECB+	Sb-121 (STABLE)	Sb-122 (STABLE)
Sn-112 (STABLE)	Sn-113 (115.09d) EC	Sn-114 (STABLE)	Sn-115 (STABLE)	Sn-116 (STABLE)	Sn-117 (STABLE)	Sn-118 (STABLE)	Sn-119 (STABLE)	Sn-120 (STABLE)

ANTIMONY-117

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sb-117
Atomic number (Z): 51
Mass number (A): 117
Neutron number (N): 66

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 2.8 [h]
Decay constant: 6.8765e-05 [1/s]
Daughters: Sn-117 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.02981 [MeV]
Mean photon energy: 0.18642 [MeV]
Air kerma rate constant, Γ_{10} : 1.142e-17 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 1.213e-17 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 4.776e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 4.776e-15 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 2.987e-14 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

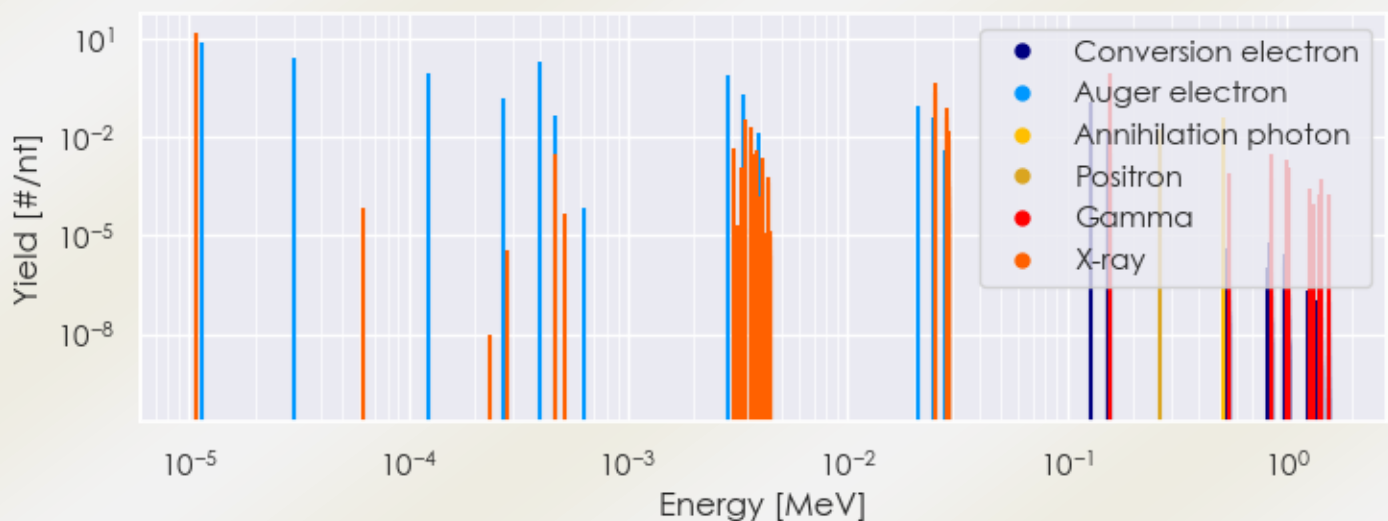
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Sb-117 DPK.csv

SUMMARY SPECTRA (PLOT)

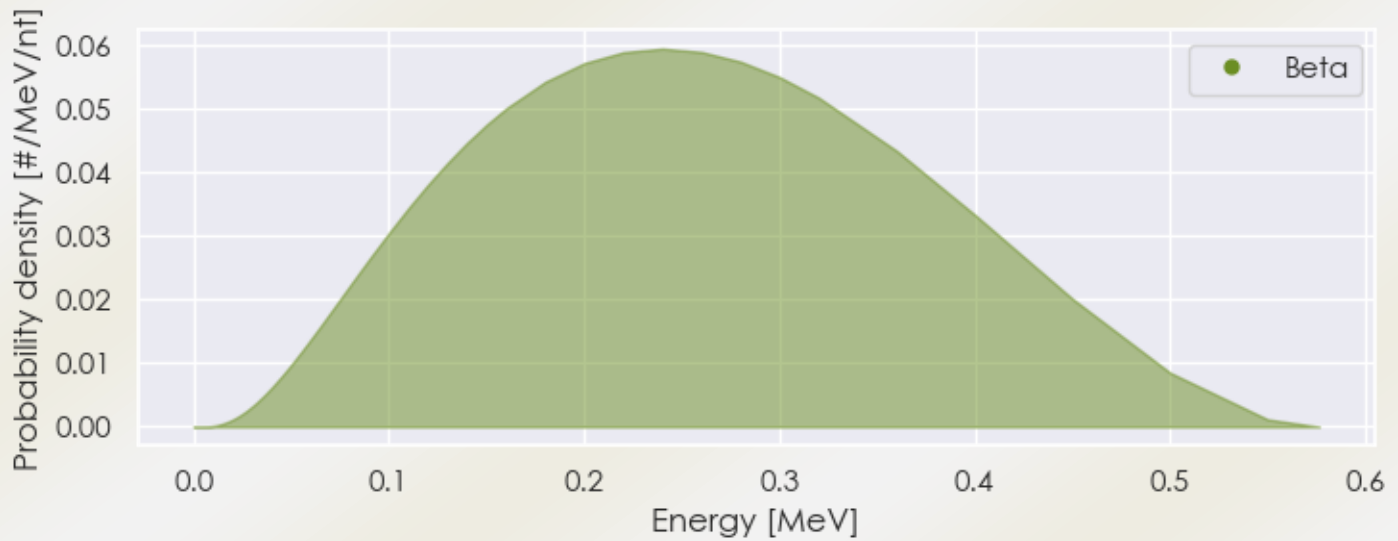
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Sb-117 Summary Spectrum.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/Sb-117 Beta 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/Sb-117 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.08543e-05	1.528e+01	X-ray
3.43219e-03	3.385e-02	X-ray
3.65722e-03	1.925e-02	X-ray
2.50232e-02	2.382e-01	X-ray
2.52572e-02	4.457e-01	X-ray
2.84307e-02	4.021e-02	X-ray
2.84736e-02	7.808e-02	X-ray
2.90882e-02	1.609e-02	X-ray
1.58562e-01	8.590e-01	Gamma
5.11000e-01	3.679e-02	Annihilation photon

2.62785e-01	1.839e-02	Positron
1.13311e-05	7.555e+00	Auger electron
3.03628e-05	2.600e+00	Auger electron
1.23885e-04	8.394e-01	Auger electron
2.72353e-04	1.499e-01	Auger electron
3.96293e-04	1.891e+00	Auger electron
4.70168e-04	4.310e-02	Auger electron
2.84852e-03	7.466e-01	Auger electron
3.36539e-03	1.924e-01	Auger electron
3.90163e-03	1.276e-02	Auger electron
2.09334e-02	8.982e-02	Auger electron
2.44171e-02	3.825e-02	Auger electron
1.29378e-01	1.180e-01	Conversion electron
1.54122e-01	1.387e-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