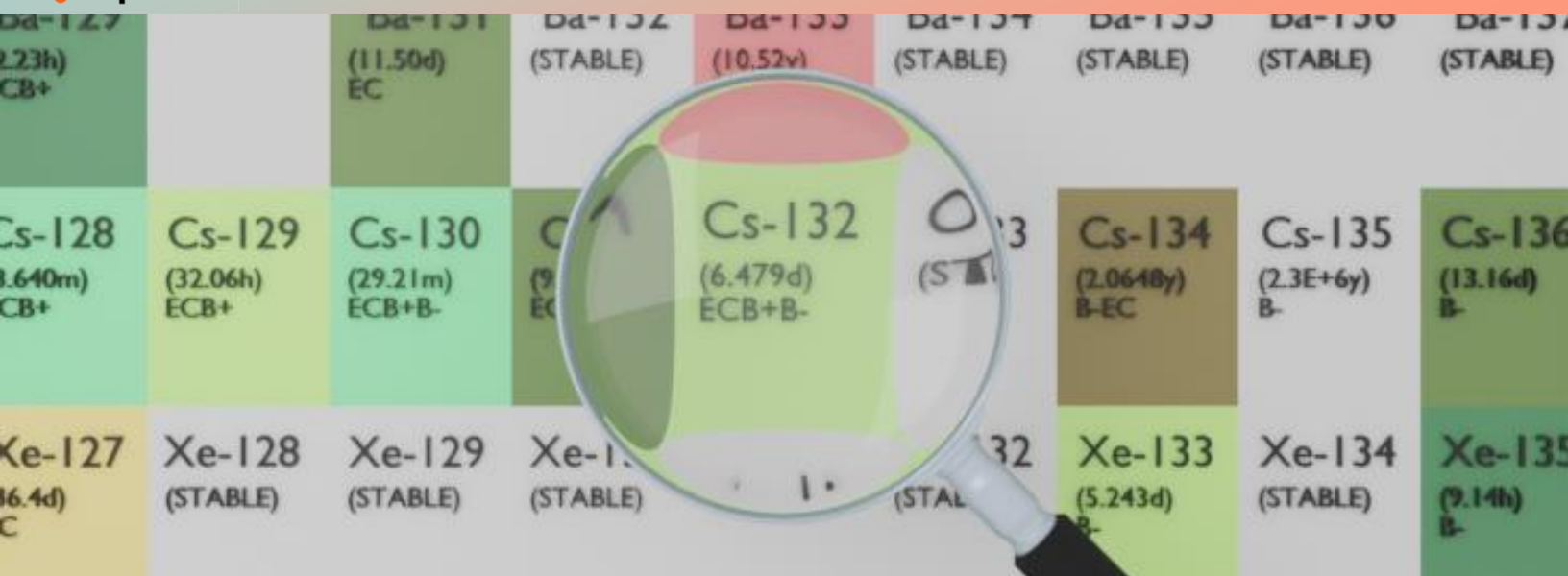




Ba-127 (2.23h) CB+		Ba-131 (11.50d) EC	Ba-132 (STABLE)	Ba-133 (10.52y) EC	Ba-134 (STABLE)	Ba-135 (STABLE)	Ba-136 (STABLE)	Ba-137 (STABLE)
Cs-128 (3.640m) CB+	Cs-129 (32.06h) ECB+	Cs-130 (29.21m) ECB+B-	Cs-131 (9.7d) EC	Cs-132 (6.479d) ECB+B-	Cs-133 (STABLE)	Cs-134 (2.0648y) B-EC	Cs-135 (2.3E+6y) B-	Cs-136 (13.16d) B-
Xe-127 (36.4d) C	Xe-128 (STABLE)	Xe-129 (STABLE)	Xe-130 (STABLE)	Xe-131 (STABLE)	Xe-132 (STABLE)	Xe-133 (5.243d) B-	Xe-134 (STABLE)	Xe-135 (9.14h) B-

CESIUM-132

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Cs-132
Atomic number (Z): 55
Mass number (A): 132
Neutron number (N): 77

RADIOACTIVE DECAY

Decay modes: β^- , β^+ , Electron capture
Half-life: 6.479 [d]
Decay constant: $1.2382\text{e-}06$ [1/s]
Daughters: Xe-132 (98.1%), Ba-132 (1.87%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.0143 [MeV]
Mean photon energy: 0.71512 [MeV]
Air kerma rate constant, Γ_{10} : $3.000\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $3.017\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $2.291\text{e-}15$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [Gy $\cdot$ kg/Bq $\cdot$ s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta,\beta^+,e^-}$: 2.291×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.146×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

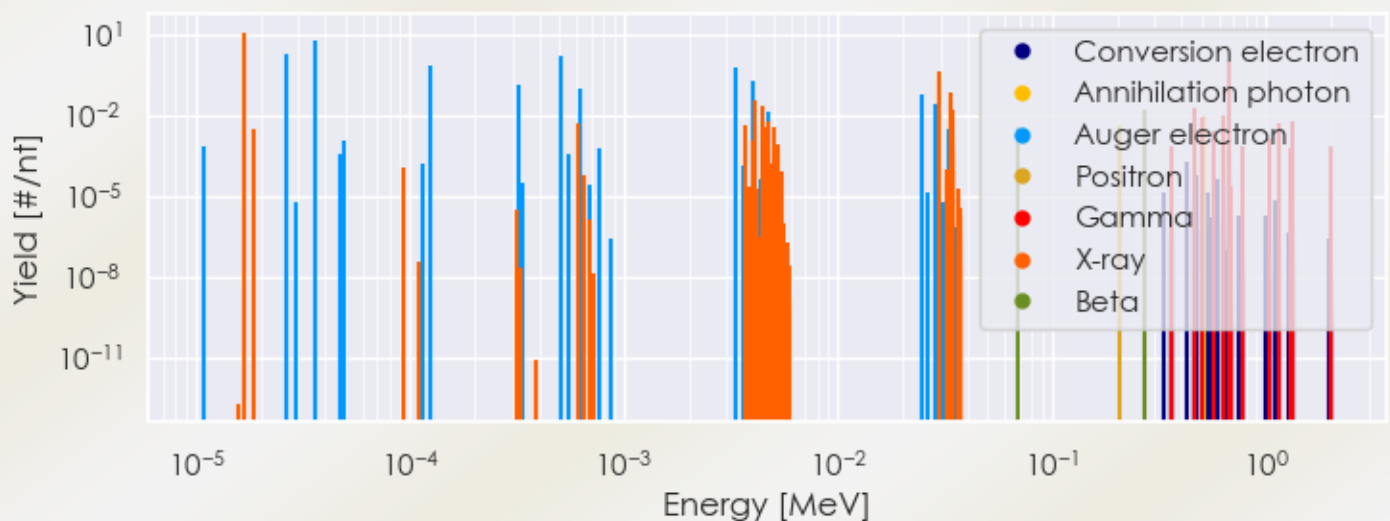
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Cs-132 DPK.csv

SUMMARY SPECTRA (PLOT)

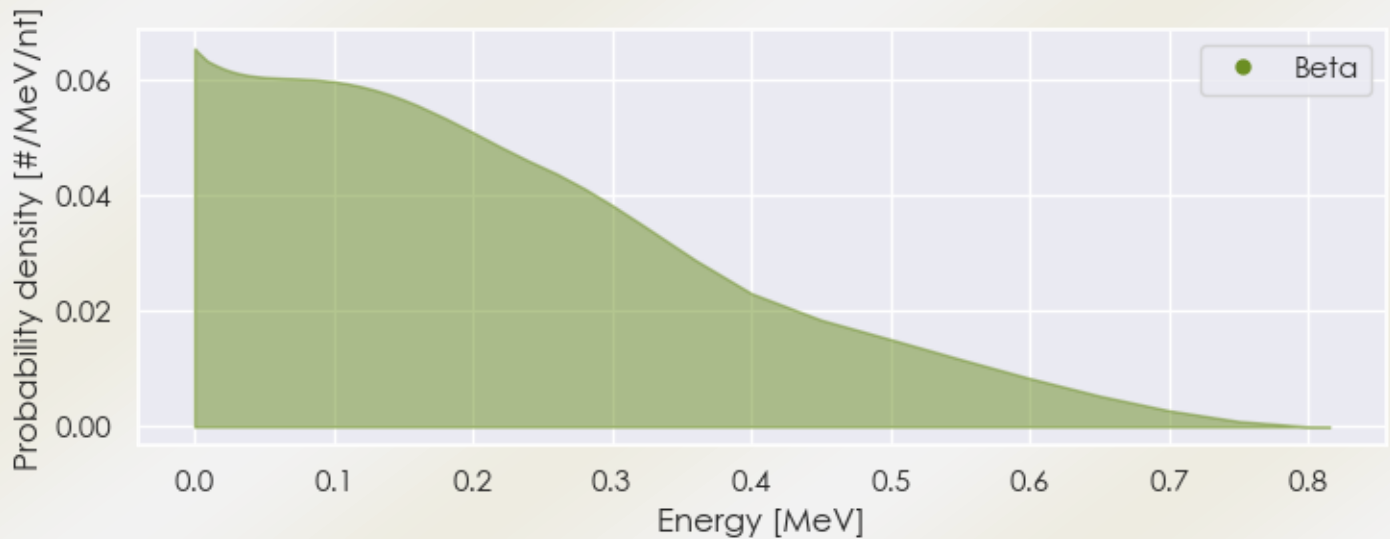
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Cs-132 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/Cs-132 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/Cs-132 Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
1.66177e-05	1.163e+01	X-ray
4.09719e-03	3.712e-02	X-ray
4.41300e-03	2.153e-02	X-ray
2.94521e-02	2.137e-01	X-ray
2.97812e-02	3.958e-01	X-ray
3.35665e-02	3.716e-02	X-ray
3.36295e-02	7.204e-02	X-ray
3.44080e-02	1.520e-02	X-ray
4.64470e-01	1.726e-02	Gamma
6.67718e-01	9.752e-01	Gamma

2.70293e-01	1.510e-02	Beta
2.61975e-05	1.815e+00	Auger electron
3.62454e-05	5.531e+00	Auger electron
1.23738e-04	6.831e-01	Auger electron
3.22790e-04	1.323e-01	Auger electron
5.05211e-04	1.514e+00	Auger electron
6.17556e-04	8.667e-02	Auger electron
3.32604e-03	5.965e-01	Auger electron
4.00345e-03	1.770e-01	Auger electron
4.70792e-03	1.345e-02	Auger electron
2.44715e-02	6.009e-02	Auger electron
2.86854e-02	2.688e-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