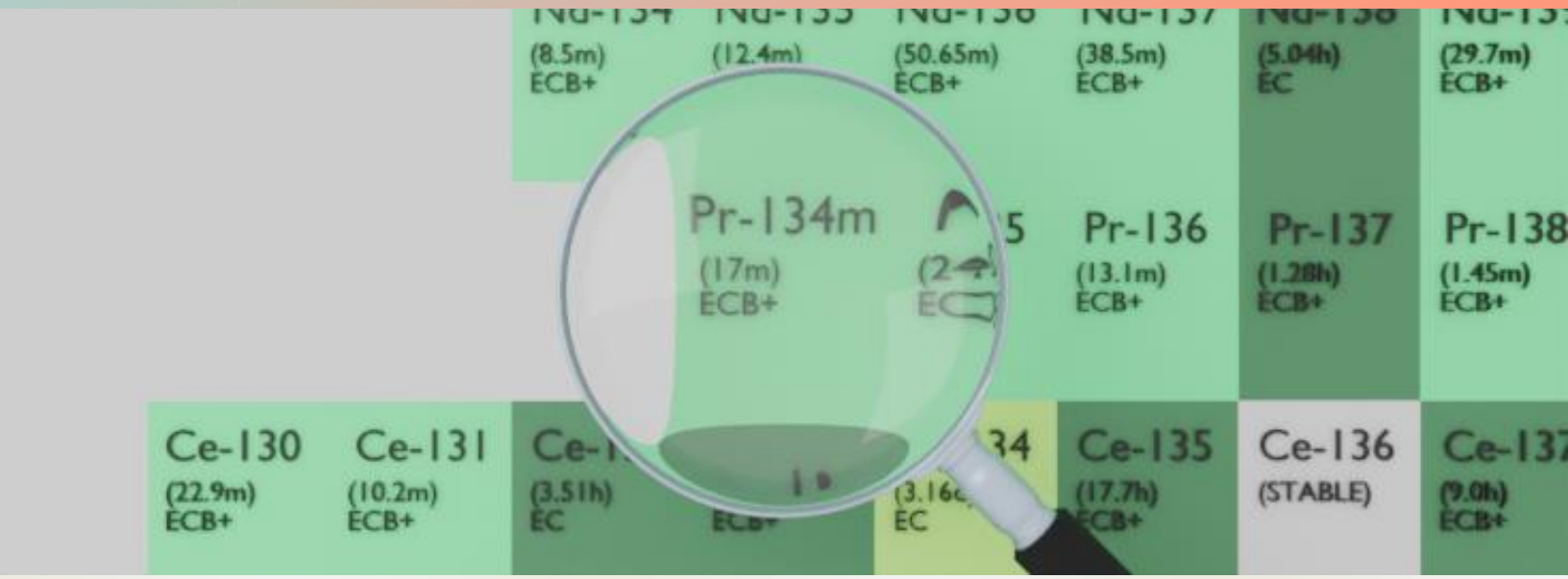


PRASEODYMIUM-134M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Pr-134m
Atomic number (Z): 59
Mass number (A): 134
Neutron number (N): 75

RADIOACTIVE DECAY

Decay modes: β+, Electron capture
Half-life: 17.0 [m]
Decay constant: 6.7956e-04 [1/s]
Daughters: Ce-134 (100.0%)
Radioactive daughters: Ce-134

DOSIMETRIC CONSTANTS

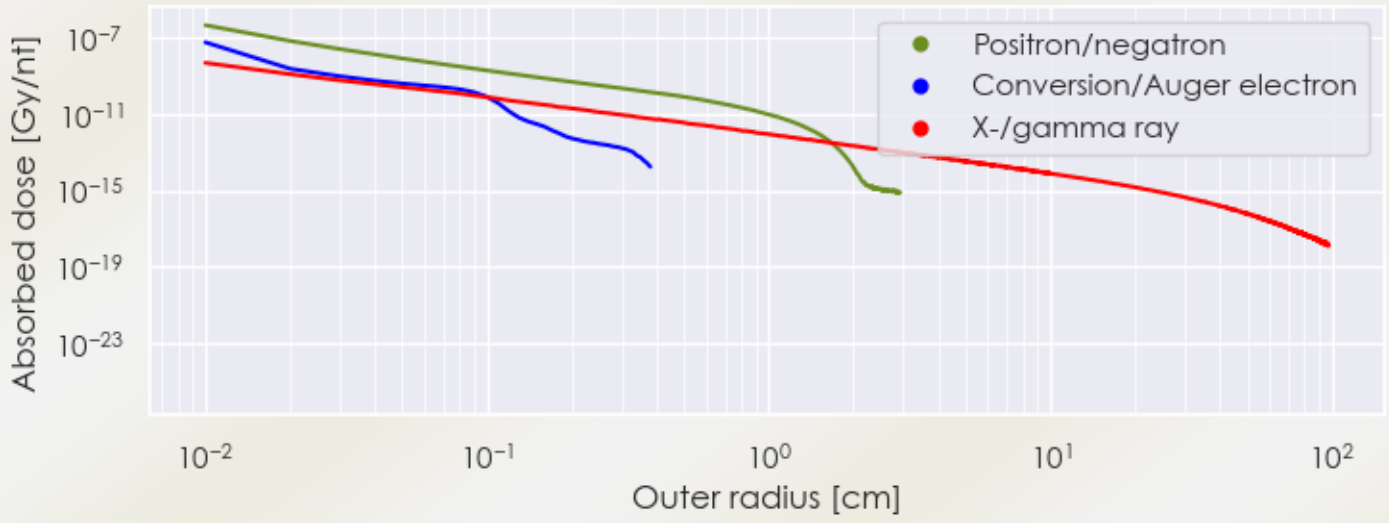
Mean alpha energy: 0.0 [MeV]
Mean electron energy: 1.52736 [MeV]
Mean photon energy: 2.31011 [MeV]
Air kerma rate constant, Γ_{10}*:* 5.068e-17 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air}*:* 8.194e-17 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (a and/or electrons), Δ_{wp}*:* 2.447e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{a}*:* 0.000e+00 [Gy·kg/Bq·s]

Equilibrium dose constant for betas/electrons, $\Delta_{\beta-,\beta+,e-}$: 2.447e-13 [Gy·kg/Bq·s]
Equilibrium dose constant for photons, Δ_{p}: 3.701e-13 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

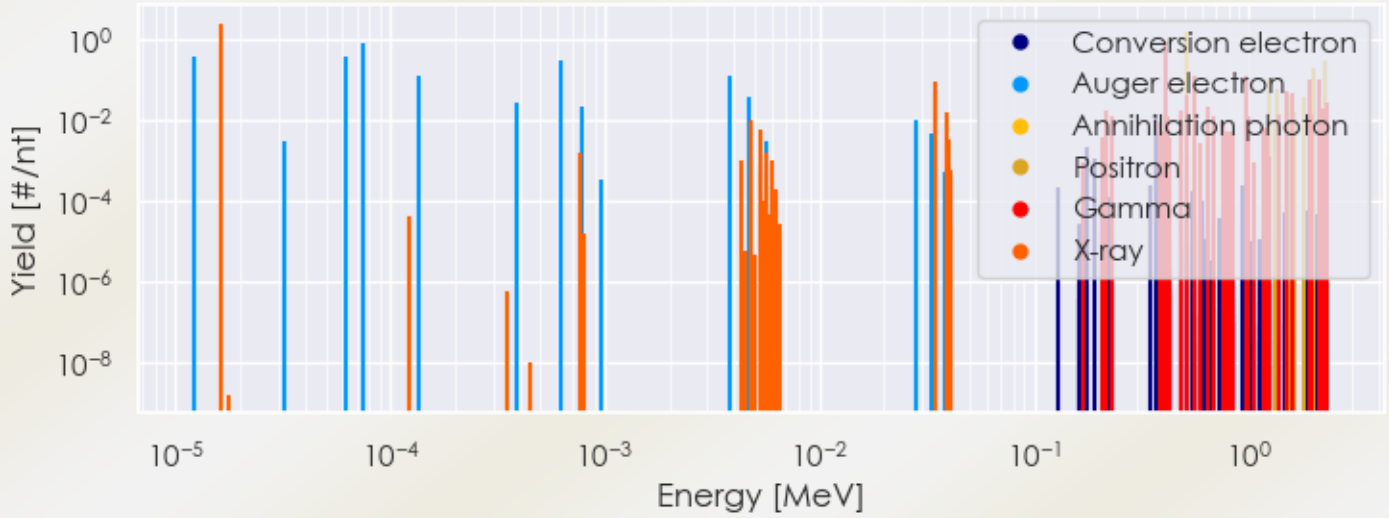
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Pr-134m DPK.csv

SUMMARY SPECTRA (PLOT)

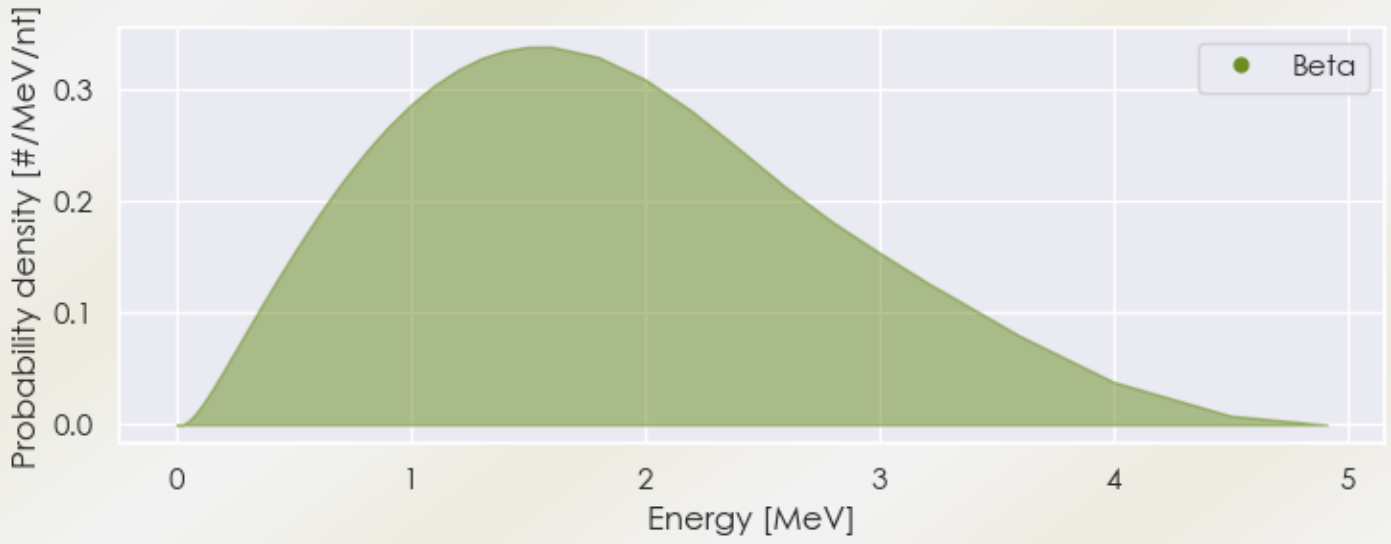
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Pr-134m 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/Pr-134m 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/Pr-134m Summary Spectrum.csv

Energy [MeV]	Yield [#/nt] if > 0.01	Radiation type
1.61263e-05	2.545e+00	X-ray
4.82666e-03	1.019e-02	X-ray
3.42907e-02	4.821e-02	X-ray
3.47432e-02	8.828e-02	X-ray
3.92855e-02	1.663e-02	X-ray
2.15300e-01	1.742e-02	Gamma
2.31300e-01	1.340e-02	Gamma
4.09200e-01	8.710e-01	Gamma
4.17200e-01	1.340e-02	Gamma

4.80400e-01	1.742e-02	Gamma
5.11000e-01	1.615e+00	Annihilation photon
5.18100e-01	4.154e-02	Gamma
5.56000e-01	1.313e-01	Gamma
6.39600e-01	2.144e-02	Gamma
6.85700e-01	1.340e-02	Gamma
9.65500e-01	1.313e-01	Gamma
9.73900e-01	4.824e-02	Gamma
9.78700e-01	1.072e-02	Gamma
1.00000e+00	1.340e-02	Gamma
1.36570e+00	1.474e-02	Gamma
1.49460e+00	5.360e-02	Gamma
1.57990e+00	4.690e-02	Gamma
1.90430e+00	9.916e-02	Gamma
1.96410e+00	1.474e-02	Gamma
2.13600e+00	1.072e-01	Gamma
2.23300e+00	2.010e-02	Gamma
2.33100e+00	2.814e-02	Gamma
1.25623e+00	1.096e-01	Positron
1.36336e+00	5.881e-02	Positron
1.51430e+00	3.488e-02	Positron
1.55410e+00	4.087e-02	Positron
1.61435e+00	1.595e-02	Positron
1.79825e+00	3.887e-02	Positron
1.99525e+00	1.993e-01	Positron
2.25913e+00	2.990e-01	Positron
1.22653e-05	3.616e-01	Auger electron
6.25378e-05	3.929e-01	Auger electron
7.40126e-05	8.548e-01	Auger electron
1.35135e-04	1.335e-01	Auger electron
3.88344e-04	2.832e-02	Auger electron
6.26785e-04	3.143e-01	Auger electron
7.79346e-04	2.278e-02	Auger electron
3.85038e-03	1.214e-01	Auger electron
4.70689e-03	3.998e-02	Auger electron
2.83189e-02	1.042e-02	Auger electron
3.68744e-01	1.365e-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