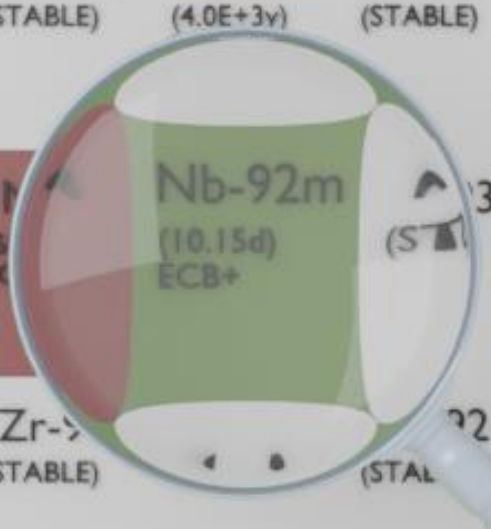




Mo-87 (2.11m) CB+	Mo-90 (5.56h) ECB+	Mo-91 (15.49m) ECB+	Mo-92 (STABLE)	Mo-93 (4.0E+3y) (STABLE)	Mo-94 (STABLE)	Mo-95 (STABLE)	Mo-96 (STABLE)	Mo-97 (STABLE)
Nb-88 (14.5m) CB+	Nb-89 (2.03h) ECB+	Nb-90 (14.60h) ECB+	Nb-91 (6.8h) ECB+	Nb-92m (10.15d) ECB+	Nb-93 (STABLE)	Nb-94 (2.03E+4y) B-	Nb-95 (34.991d) B-	Nb-96 (23.35h) B-
Zr-87 (1.68h) CB+	Zr-88 (83.4d) EC	Zr-89 (78.41h) ECB+	Zr-90 (STABLE)	Zr-91 (STABLE)	Zr-92 (STABLE)	Zr-93 (1.53E+6y) B-	Zr-94 (STABLE)	Zr-95 (64.032d) B-

NIOBIUM-92M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Nb-92m
Atomic number (Z): 41
Mass number (A): 92
Neutron number (N): 51

RADIOACTIVE DECAY

Decay modes: β^+ , Electron capture
Half-life: 10.15 [d]
Decay constant: $7.9040\text{e-}07$ [1/s]
Daughters: Zr-92 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.00647 [MeV]
Mean photon energy: 0.96885 [MeV]
Air kerma rate constant, Γ_{10} : $4.858\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : $4.861\text{e-}17$ [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $1.037\text{e-}15$ [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [Gy $\cdot$ kg/Bq $\cdot$ s]

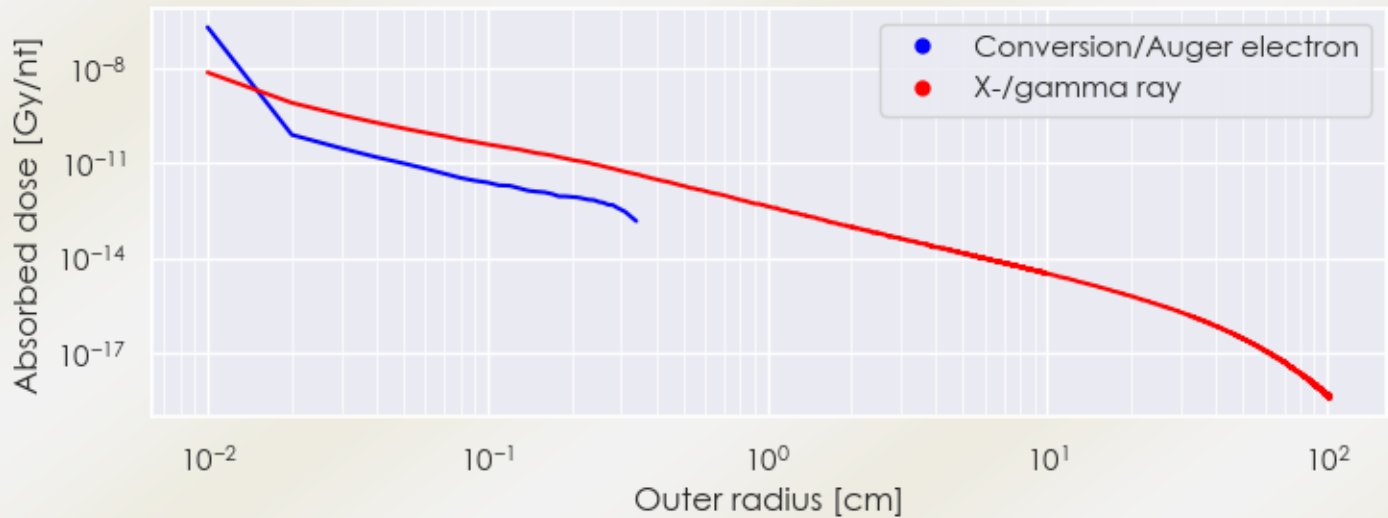
Equilibrium dose constant for betas/electrons, $\Delta_{\beta, \beta^+, e^-}$: 1.037×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 1.552×10^{-13} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

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

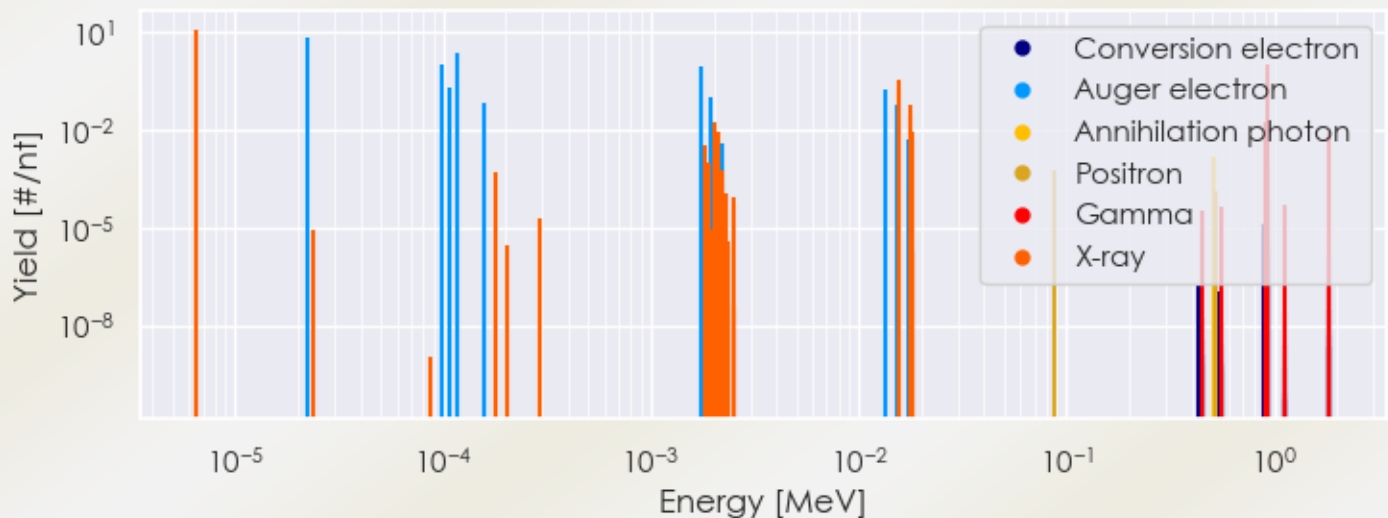
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Nb-92m DPK.csv

SUMMARY SPECTRA (PLOT)

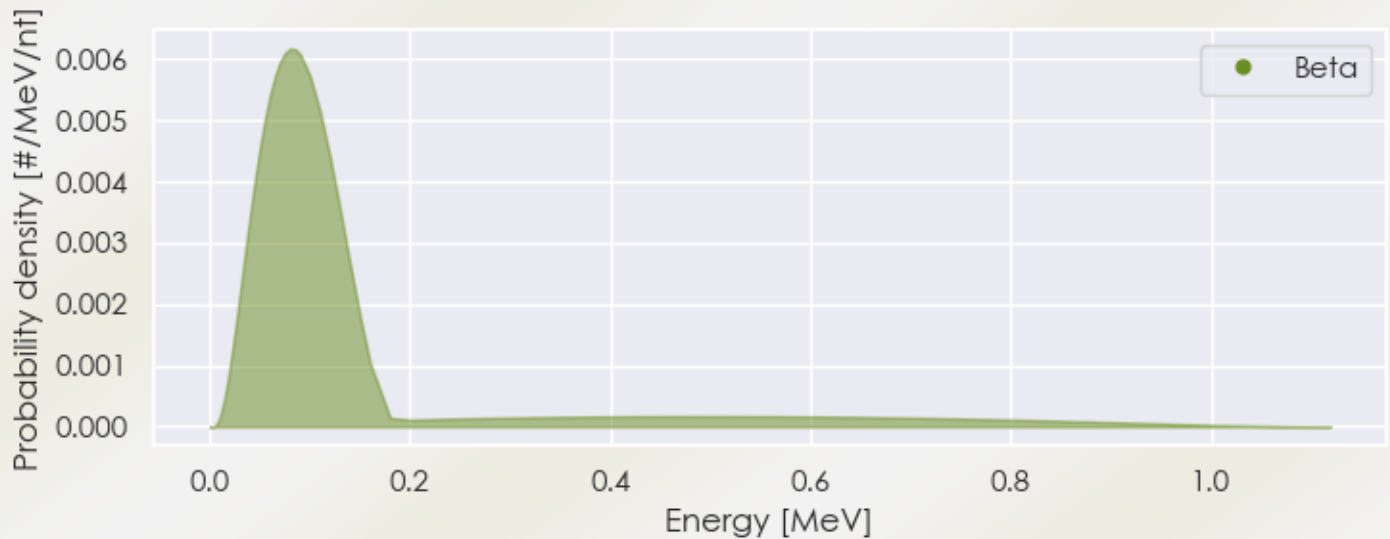
Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Nb-92m 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/Nb-92m 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/Nb-92m Summary Spectrum.csv

Energy [MeV]	Yield [# / nt] if > 0.01	Radiation type
6.52412e-06	1.205e+01	X-ray
2.03430e-03	1.813e-02	X-ray
1.56498e-02	1.842e-01	X-ray
1.57372e-02	3.526e-01	X-ray
1.76171e-02	2.781e-02	X-ray
1.76312e-02	5.415e-02	X-ray
9.12600e-01	1.783e-02	Gamma
9.34440e-01	9.907e-01	Gamma
2.22354e-05	6.392e+00	Auger electron

9.83315e-05	9.561e-01	Auger electron
1.06632e-04	2.039e-01	Auger electron
1.17896e-04	2.189e+00	Auger electron
1.58208e-04	6.464e-02	Auger electron
1.75391e-03	9.064e-01	Auger electron
1.94482e-03	1.017e-01	Auger electron
1.33271e-02	1.711e-01	Auger electron
1.53342e-02	6.094e-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