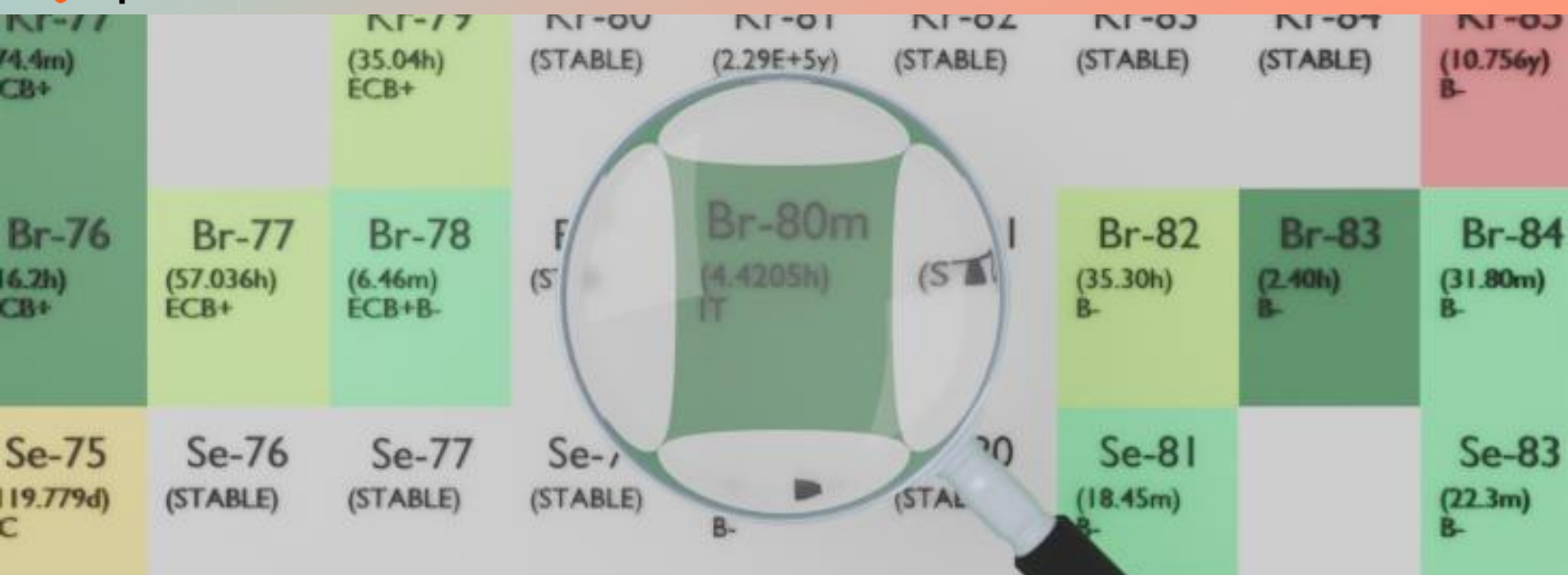




The image shows a periodic table of radionuclides. A magnifying glass is positioned over the entry for Br-80m, which is highlighted in green. The entry for Br-80m shows a half-life of (4.4205h) and a decay mode of IT. Other visible entries include Br-76, Br-77, Br-78, Br-82, Br-83, Br-84, Se-75, Se-76, Se-77, Se-81, and Se-83, each with their respective half-lives and decay modes.

Isotope	Half-life	Decay Mode
Br-76	(16.2h)	ECB+
Br-77	(57.036h)	ECB+
Br-78	(6.46m)	ECB+B-
Br-80m	(4.4205h)	IT
Br-82	(35.30h)	B-
Br-83	(2.40h)	B-
Br-84	(31.80m)	B-
Se-75	(19.779d)	C
Se-76	(STABLE)	
Se-77	(STABLE)	
Se-81	(18.45m)	B-
Se-83	(22.3m)	B-

BROMINE-80M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Br-80m
Atomic number (Z): 35
Mass number (A): 80
Neutron number (N): 45

RADIOACTIVE DECAY

Decay modes: Internal transition
Half-life: 4.42 [h]
Decay constant: 4.3556×10^{-5} [1/s]
Daughters: Br-80 (100.0%)
Radioactive daughters: Br-80

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.06173 [MeV]
Mean photon energy: 0.02416 [MeV]
Air kerma rate constant, Γ_{10} : 3.312×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Air kerma coefficient, K_{air} : 3.312×10^{-17} [Gy $\cdot$ m²/Bq $\cdot$ s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 9.890×10^{-15} [Gy $\cdot$ kg/Bq $\cdot$ s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy $\cdot$ kg/Bq $\cdot$ s]

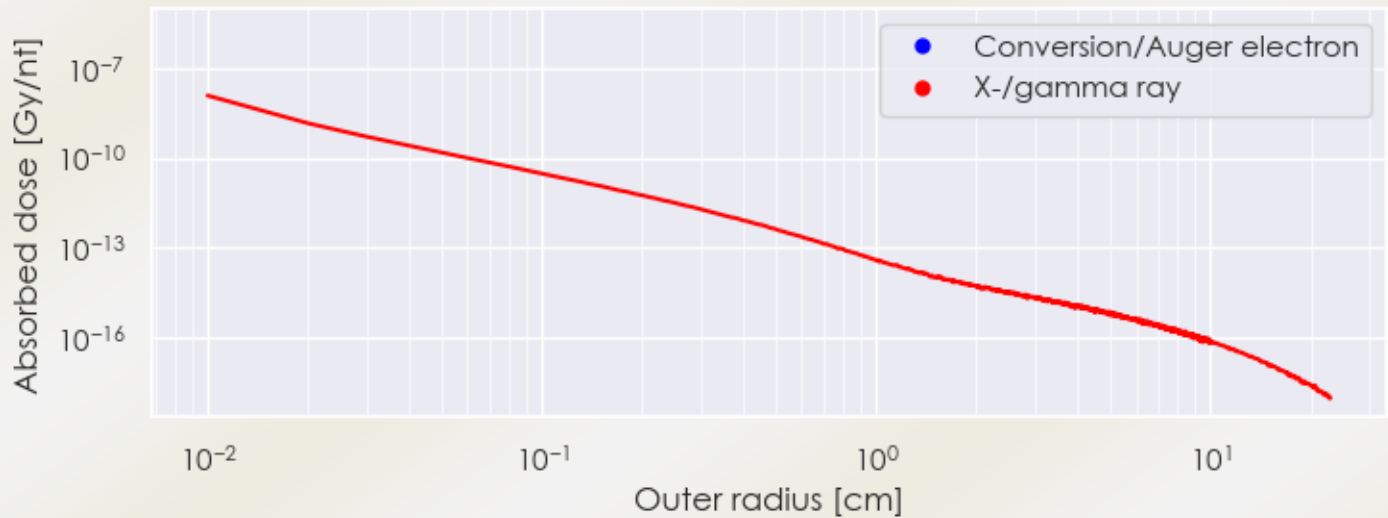
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 9.890×10^{-15} [Gy · kg/Bq · s]

Equilibrium dose constant for photons, Δ_p : 3.871×10^{-15} [Gy · kg/Bq · s]

DOSE POINT KERNELS (PLOT)

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

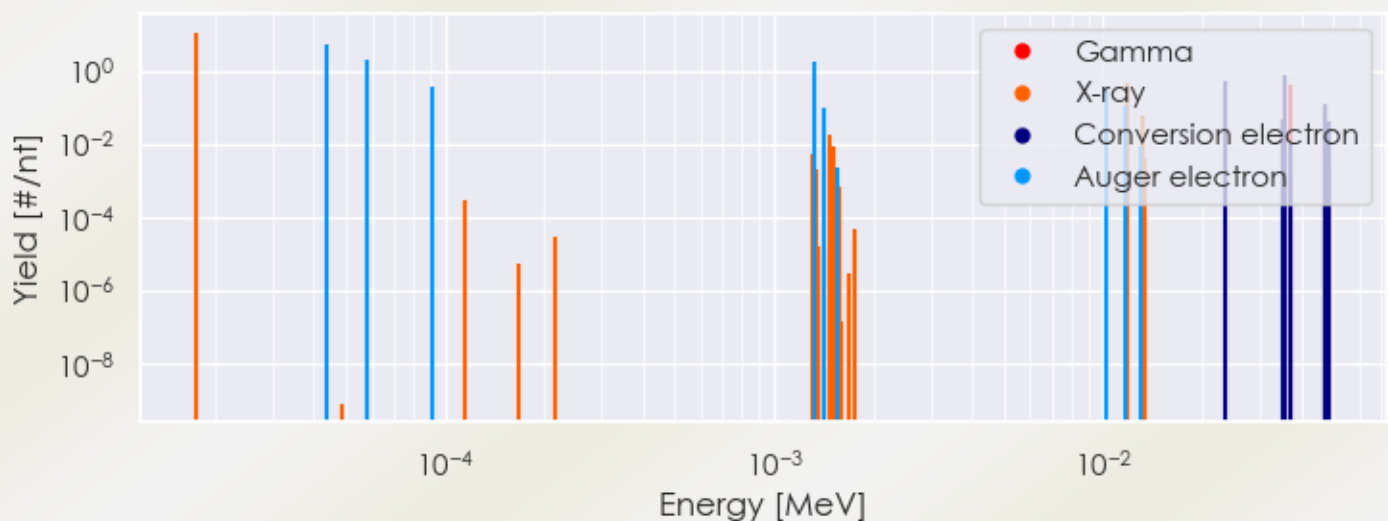
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Br-80m 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/Br-80m Summary 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/Br-80m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Br-80m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
1.75897e-05	1.120e+01	X-ray
1.47515e-03	1.714e-02	X-ray
1.18329e-02	2.291e-01	X-ray
1.18814e-02	4.423e-01	X-ray
1.32432e-02	3.160e-02	X-ray
1.32502e-02	6.165e-02	X-ray
3.70520e-02	3.905e-01	Gamma
4.38569e-05	5.043e+00	Auger electron
5.77057e-05	1.951e+00	Auger electron
9.10348e-05	3.461e-01	Auger electron
1.32052e-03	1.672e+00	Auger electron
1.41147e-03	9.926e-02	Auger electron
1.02029e-02	3.665e-01	Auger electron
1.16354e-02	1.121e-01	Auger electron
2.36170e-02	5.371e-01	Conversion electron
3.52828e-02	4.685e-02	Conversion electron
3.54150e-02	7.210e-01	Conversion electron
4.70808e-02	1.272e-01	Conversion electron
4.72479e-02	1.993e-02	Conversion electron
4.72964e-02	8.459e-02	Conversion electron
4.86652e-02	3.995e-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