

radioisotope data

I. Gamma Emitters		
A. Calibration Sources		
Isotope	Half Life	Peaks of Interest—Gamma Energy in MeV, X-ray energy in (keV)
²⁴¹ ₉₅ Am (Americium)	432 yr.	0.060
¹³³ ₅₆ Ba (Barium)	10.7 yr.	0.080, 0.276, 0.302, 0.356, 0.382 (32.0)
¹⁰⁹ ₄₈ Cd (Cadmium)	463 d.	0.088 (22.0)
¹³⁷ ₅₅ Cs (Cesium)	30.2 yr.	0.662 (32.0) [Beta]
⁵⁷ ₂₇ Co (Cobalt)	271 d.	0.014, 0.122, 0.136 (6.4)
⁶⁰ ₂₇ Co (Cobalt)	5.27 yr.	1.173, 1.332 [2.505 Sum]
⁵⁵ ₂₆ Fe (Iron)	2.68 yr.	(5.9)
⁸⁵ ₃₆ Kr (Krypton)	10.7 yr.	0.515 [0.670 Beta]
⁵⁴ ₂₅ Mn (Manganese)	312 d.	0.835 (5.4)
²² ₁₁ Na (Sodium)	2.60 yr.	1.275, 0.511 [Positron annihilation]
⁶⁵ ₃₀ Zn (Zinc)	244 d.	1.115, 0.511 [Positron annihilation]
B. Medical Applications		
⁵¹ ₂₄ Cr (Chromium)	27.7 d.	0.322
¹¹³ ₄₉ In (Indium)	1.66 hr.	0.393 (24)
¹³¹ ₅₃ I (Iodine)	8.04 d.	0.364, 0.637 [Others] (30)
¹²⁹ ₅₃ I (Iodine)	1.57 x 10 ⁷ yr.	0.040
¹²⁵ ₅₃ I (Iodine)	60.1 d.	0.035 (27)
⁵⁹ ₂₆ Fe (Iron)	44.5 d.	1.095, 1.292 [Others]
¹⁹⁷ ₈₀ Hg (Mercury)	64.1 hr.	0.0778
⁷⁵ ₃₄ Se (Selenium)	120 d.	0.136, 0.121, 0.265, 0.280, 0.400
²⁴ ₁₁ Na (Sodium)	15.0 hr.	1.369, 2.754
⁹⁹ ₄₃ Tc (Technecium)	6.02 hr.	0.143
¹³³ ₅₄ Xe (Xenon)	5.25 d.	0.081 (31)
C. Geophysical Applications		
⁴⁰ ₁₉ K (Potassium)	1.28 x 10 ⁹ yr.	1.46
²³² ₉₀ Th (Thorium series)	1.41 x 10 ¹⁰ yr.	2.614 [²⁰⁸ ₈₂ Pb ground state and others]
²¹⁴ ₈₃ Bi [Bismuth (Radium 226/88 Ra)]	1.6 x 10 ³ yr.	1.76 [Others]
II. Positron Emitters		
⁷⁴ ₃₃ As (Arsenic)	17.8 d.	0.511, 0.596, 0.635, [1.107 Sum]
⁶⁴ ₂₉ Cu (Copper)	12.7 hr.	0.511, 1.34
⁶⁸ ₃₁ Ga (Gallium)	68.1 min.	0.511, 1.078 [Others]
²² ₁₁ Na (Sodium)	2.60 yr.	0.511, 1.275 [1.786 Sum]
III. Beta Emitters		
A. Chemistry & Health Physics Applications		
¹⁴ ₆ C (Carbon)	5730 yr.	0.155
⁸⁵ ₃₆ Kr (Krypton)	10.7 yr.	0.670 Beta [Bremsstrahlung, 0.515 Gamma Ray]
³² ₁₅ P (Phosphorus)	14.3 d.	1.71
³⁵ ₁₆ S (Sulfur)	87.5 d.	0.167
³ ₁ H (Tritium)	12.3 yr.	0.018
B. Monoenergetic Calibration Sources		
²⁰⁷ ₈₃ Bi (Bismuth)	32.2 yr.	0.481, 0.554, 0.976, 1.048
⁵⁷ ₂₇ Co (Cobalt)	271 d.	0.007, 0.013, 0.115, 0.129
¹¹³ ₅₀ Sn (Tin)	115 d.	0.205, 0.368, 0.389

Note: This information is for reference only. Saint-Gobain Crystals does not supply radioisotope sources.

17900 Great Lakes Parkway, Hiram, Ohio 44234 • USA
Phone: (440) 834-5600 • Fax: (440) 834-7680

Web Site: www.crystals.saint-gobain.com

Saint-Gobain Ceramics & Plastics, Inc.

