

Test Tube Sources

Spectrum Techniques



Beta/Gamma

BETA/GAMMA TEST TUBE SOURCES

Beta/Gamma test tube sources are designed for use as reference sources in well type detectors or clinical instruments. Each source is constructed using a capped 12 mm x 75 mm polypropylene tube. The source material is deposited in the bottom of the tube and sealed using epoxy.

All beta/gamma test tube sources have an uncertainty of $\pm 20\%$ of the labeled activity unless calibrated ($\pm 5\%$) for an additional cost. Activities will not exceed the U.S. NRC Exempt Quantity limit.

Beta sources are not available for calibration

AVAILABLE NUCLIDES AND ACTIVITIES

Nuclide	Minimum Activity	Maximum Activity
Barium 133	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)
Cadmium 109	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)
Cesium 137	0.05 μCi (1.85 kBq)	10 μCi (370 kBq)
Cobalt 57	0.1 μCi (3.7 kBq)	100 μCi (3700 kBq)
Cobalt 60	0.05 μCi (1.85 kBq)	1 μCi (37 kBq)
Europium 152	0.1 μCi (3.7 kBq)	1 μCi (37 kBq)
Iodine 125	0.1 μCi (3.7 kBq)	1 μCi (37 kBq)
Manganese 54	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)
Sodium 22	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)
Strontium 90	0.05 μCi (1.85 kBq)	0.1 μCi (3.7 kBq)
Thallium 204	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)
Zinc 65	0.1 μCi (3.7 kBq)	10 μCi (370 kBq)

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Mock Iodine 131

MOCK IODINE 131 TEST TUBE SOURCE

Due to its short half-life, iodine 131 (I-131) is not suitable for routine calibrations of detectors used to measure uptake. A mock iodine source, containing a mixture of cesium 137 and Ba-133, can provide a useful working life as well as a spectrum similar to that of I-131.

Cs-137, which has a gamma energy level at 662 keV, is used to match the 637 keV energy level of I-131. While there is also a gamma peak at 723 keV, most uptake measuring equipment cannot detect the difference between these two peaks. Ba-133, which has a gamma energy level at 356 keV, is used to match the 364 keV energy level of I-131.

Each source is constructed using a capped 12 mm x 75 mm polypropylene tube.

The source material is deposited in the bottom of the tube and sealed using epoxy.

All mock Iodine 131 test tube sources have an uncertainty of $\pm 20\%$ of the labeled activity unless calibrated ($\pm 5\%$) for an additional cost. Activities will not exceed the U.S. NRC Exempt Quantity limit.