



Eckert & Ziegler

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Isotope Products

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CERTIFICATE OF CALIBRATION GAMMA STANDARD SOURCE

Radionuclide:	Co-60	Customer:	CABRERA SERVICES, INC.
Half-life:	5.272 ± 0.001 years	P.O. No.:	12-0217
Catalog No.:	GF-060-D	Reference Date:	15-May-12 12:00 PST
Source No.:	1592-30-3	Contained Radioactivity:	1.047 µCi 38.74 kBq

Physical Description:

- | | |
|------------------------------|------------------------------|
| A. Capsule type: | D (25.4 mm OD x 6.35 mm THK) |
| B. Nature of active deposit: | Evaporated metallic salt |
| C. Active diameter/volume: | 5 mm |
| D. Backing: | Epoxy |
| E. Cover: | Acrylic |

Radioimpurities:

None detected

Method of Calibration:

This source was assayed using gamma ray spectrometry.

Peak energy used for integration: 1173, 1333 keV
 Branching ratio used: 0.9986, 0.9998 gammas per decay

Uncertainty of Measurement:

- | | |
|---|---------|
| A. Type A (random) uncertainty: | ± 0.5 % |
| B. Type B (systematic) uncertainty: | ± 3.0 % |
| C. Uncertainty in aliquot weighing: | ± 0.0 % |
| D. Total uncertainty at the 99% confidence level: | ± 3.0 % |

Notes:

- See reverse side for leak test(s) performed on this source.
- EZIP participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA-TECDOC-619, 1991.
- This source has a working life of 5 years.

David James Van Dorem
 Quality Control

16-APR-12
 Date

EZIP Ref. No.: 1592-30

ISO 9001 CERTIFIED