

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

80388-28

5 mL Liquid in Flame Sealed Vial

Customer: LLNS/LLNL/For the U.S. DOE/NNSA
P.O. No.: B585301, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , %			Reference Date (12:00 PM EST)
			u_A	u_B	U	
I-125	59.4	9.944E+05	0.2	1.6	3.2	08/13/2009

***Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:

5.14236 grams 0.1M NaOH + 0.006M Na₂SO₃ solution with approximately 30 ug/g I carrier. Gamma impurities - <0.1%.

Source Prepared by: N. E. Kasate
N. E. Kasate, Radiochemist

QA Approved: D. M. Montgomery QA ACT Date: 8/19/09





U.S. DEPARTMENT OF COMMERCE

National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Eckert & Ziegler Analytics Atlanta, Georgia

is a participant for the period January 1, 2009, through December 31, 2009, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with NRMAP Incorporated. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

A handwritten signature in black ink, appearing to read "M P Unterweger".

Michael P. Unterweger, Leader
Radioactivity Group
Physics Laboratory

*As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of Federal Regulations. These regulations may be met if Reports are quoted only in their entirety. Excerpts out of context may be misleading.