Eckert & Ziegler
Analytics

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CERTIFICATE OF CALIBRATION

Standard Reference Source

101665

I-131 5 mL Liquid in Flame Sealed Vial

Customer: LLNS/LLNL for the U.S. DOE/NNSA
P.O. No.: B615697, Item 2 Product Code: 8131

This standard radionuclide source was prepared gravimetrically from a master solution calibrated with an ionization chamber. The ionization chamber was calibrated by the National Physical Laboratory, Teddington, U.K., and is traceable to national standards. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference 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 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
I-131	8.025E+00	2.142E+06	0.1	0.7	1.4	10/27/2015

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

Comments:
Impurities: γ-impurities<0.1%
5.00710 g 0.1M NaOH + 0.006M Na2SO3 solution with approximately 30 μg/g I carrier.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QC Approved: _____ Date: 21 OCT 15
J. S. Lahr, Spectroscopist

F-CR-32, Rev. 0, 01 Nov 14

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