Certified Reference Material

Certificate of Traceability

U.S. Department of Energy
Radiological and Environmental Sciences Laboratory
1955 Fremont Avenue, MS 2112
Idaho Falls, Idaho 83415
(208) 526-8031

CRM ID: MAPEP 13-RdF29

This Certified Reference Material (CRM) contains a known quantity of analyte(s) in a stable and homogeneous matrix. This material is intended for the calibration of instruments and for the verification of the accuracy and precision of analytical measurements. The reference value listed for each analyte is mathematically derived from a certified value traceable to a national or international standard. The traceability of the CRM is maintained through an unbroken chain of comparisons, all having stated uncertainties, calculated according to ISO and NIST Guidelines.

This CRM was prepared and the reference value(s) were verified by the Radiological and Environmental Sciences Laboratory (RESL). RESL maintains direct traceability to the United States National Institute of Standards and Technology (NIST) through successful participation in the NIST/RESL Radiological Traceability Program. RESL is accredited to ISO 17043 (2377.02) as a Performance Testing Provider, ISO 17025 (2377.01) as a Chemical Testing Laboratory, and ISO G34 (2377.03) as a Reference Material Producer by The American Association for Laboratory Accreditation.

David S. Sill
Senior Technical Manager - Chemistry

ISO/IEC GUIDE 34:2009

ACCREDITED

REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 2377.03

RESL CRM
Certified Reference Material

USDOE-RESL CRM ATTACHMENT

CRM ID: MAPEP 13-RdF29 **Matrix: Filter**

Reference Date: 8/1/2013

Radionuclide	Reference Value*
Co-57	9.1 +/- 0.2 E1 pCi
Co-60	6.21 +/- 0.10 E1 pCi
Cs-137	7.36 +/- 0.13 E1 pCi
Mn-54	9.4 +/- 0.2 E1 pCi
Pu-238	3.35 +/- 0.06 E0 pCi
Pu-239	2.49 +/- 0.05 E0 pCi
Sr-90	4.90 +/- 0.11 E1 pCi
U-234	7.15 +/- 0.16 E-1 pCi
U-235	7.25 +/- 0.19 E-2 pCi
U-236	2.56 +/- 0.09 E-2 pCi
U-238	5.43 +/- 0.12 E0 pCi
Zn-65	7.26 +/- 0.18 E1 pCi

*Uncertainties are reported with a coverage factor of k=1.

Special Instructions for the Proper Use of the CRM

The CRM filter packet contains a spiked air filter sandwiched between upper and lower non-spiked filters. The spiked side of the middle filter is placed in the packet facing "up" toward the label. The entire sample must be taken for analysis, including the non-spiked filters, and should not be subdivided.

Storage and Handling of CRM

This CRM should be maintained in its original packaging until use. There are no specific restrictions for storage of this CRM. This CRM should be stable under normal laboratory conditions until the date listed in the Expiration Date. If the validity of the CRM becomes questionable or technical assistance is needed please contact RESL.

Verification of Certified Reference Activity

The analyte(s) in this CRM have been verified by alpha spectrometry, liquid scintillation counting and high resolution gamma spectrometry against an independent source(s) which are traceable to the National Institute of Standards and Technology.

Hazards

The below link takes you to the MSDS for this material. Please select Air Filter.
http://www.inl.gov/resl/mapep/describe.html

Preparation Date: 8/1/2013
Certificate Issue Date: 2/11/2014
Expiration Date: 8/1/2020

END OF CERTIFICATE