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Certificate of Analysis

Metals in Soil QC CRM

Catalog Number: SQCI-001
Lot Number: S0822
Manufacture Date: 08/08/22
Certified Date: 09/22/22

Expiration: 08/31/2024
Matrix: Solid
Hazards: Irritant, Toxic

Analyte	Study Mean (mg/kg)	Certified Concentration (mg/kg)	Acceptance Limits (mg/kg)
Aluminum	7149	6190 ± 57.6	3740 - 10800
Antimony	129	285 ± 2.65	28.5 - 323
Arsenic	189	275 ± 2.56	131 - 303
Barium	343	521 ± 4.85	257 - 573
Beryllium	140	200 ± 1.86	105 - 220
Boron	187	368 ± 3.43	112 - 405
Cadmium	45.9	75.0 ± 0.698	33.6 - 82.5
Calcium	6424	9360 ± 87.1	4750 - 10300
Chromium	232	300 ± 2.79	163 - 330
Cobalt	177	270 ± 2.51	133 - 297
Copper	96.4	135 ± 1.26	63.3 - 148
Iron	5684	7530 ± 70.1	753 - 12100
Lead	164	285 ± 2.65	122 - 314
Lithium	974	1580 ± 14.7	879 - 1740
Magnesium	5877	9480 ± 88.3	4270 - 10400
Manganese	1121	1680 ± 15.6	886 - 1850
Mercury	10.3	27.0 ± 0.251	6.17 - 29.7
Molybdenum	69.2	106 ± 0.987	47.9 - 117
Nickel	292	420 ± 3.91	198 - 462
Potassium	9833	15100 ± 141	7510 - 16600
Selenium	71.1	94.0 ± 0.875	36.5 - 103
Silver	55.4	96.0 ± 0.894	38.9 - 105
Sodium	5652	8130 ± 75.7	3840 - 8940
Strontium	68.3	100 ± 0.931	48.1 - 110
Thallium	176	269 ± 2.50	125 - 296
Tin	90.7	142 ± 1.32	50.7 - 156
Titanium	35.4	0	3.47 - 106
Vanadium	73.7	92.0 ± 0.857	46.0 - 101
Zinc	588	900 ± 8.38	412 - 990

This certified reference material (CRM) was manufactured by NSI Lab Solutions following quality procedures meeting the requirements of ISO 9001, ISO 17025, and ISO 17034. Acceptance limits are set at current NELAC standards. The certified concentration is the gravimetric true value determined during manufacture, masses traceable to NIST. The study mean is set at the robust mean of an interlaboratory proficiency testing study with outlier rejection. This CRM is intended to be used to validate analytical methods, for detection limit studies, and analyst proficiency testing.

ANAB ACCREDITED
ISO 17034
REFERENCE MATERIAL PRODUCER

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Storage & Instructions For Use

Store this sample at 2-8°C.
Perform the sample digestion on an appropriate amount of sample according to the selected digestion procedure. The recommended minimum sampling size is 0.5 g.
Mix the sample by shaking gently. Open the sample in the fume hood to prevent exposure to dust.
Determination of the percent moisture content of the material is not required. Assume the sample is 100% solids.

Traceability Information

Analyte Source Materials: The highest purity analyte source materials are used in the manufacture of this CRM. Analyte source material purity and associated uncertainty has been analytically verified against appropriate NIST SRMs, where available.

Balance: All analytical balances are calibrated on a semiannual basis by an ISO 17025 accredited calibration laboratory and are traceable to NIST. Traceable Calibration Certificate available upon request.
All balances are checked daily by an in-house standard operating procedure. The weights used for this daily verification are calibrated annually by an ISO 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calibration and Traceability available upon request.

Thermometer: All thermometers are NIST traceable through thermometers that are calibrated annually by an ISO 17025 accredited calibration laboratory.

Glassware: All glassware used in the manufacture of our CRMs is Class A. An in-house standard operating procedure is used to verify all glassware prior to it being placed into service. Volumetric pipetors are calibrated every four months by an ISO 17025 accredited calibration laboratory.

Homogeneity/Stability/Expiration

This CRM was thoroughly mixed in production. Batch homogeneity was established through analyses of samples chosen at random. The stability of this CRM is based on short-term and long-term monitoring of the certified concentration. The expiration date is guaranteed to be valid from the manufacture date and is based on results of long-term monitoring.

Ewart Morris
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Ewart Morris, Inorganics Technical Manager