

Certificate of Analysis

Product Name: ICP-MS Calibration Standard

Product Number: IMS-102

Lot Issue Date: 14-Jul-2021

Lot Number: 0006617065

Expiration Date: 31-Aug-2025

Description:

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system. The analyte concentration(s) were prepared and verified by an ISO 17034 / ISO 17025 accredited laboratory and compared to calibration standards independently prepared using NIST SRM(s) when available. The certified value and uncertainty value at the 95% confidence level for each analyte is determined gravimetrically.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
aluminum nitrate nonahydrate (ICP grade) (as aluminum)	007784-27-2	RM18137	10.0 ± 0.1 µg/mL
arsenic (III) oxide (ICP grade) (as arsenic)	001327-53-3	RM14463	10.0 ± 0.1 µg/mL
barium nitrate (ICP grade) (as barium)	010022-31-8	RM11168	10.0 ± 0.1 µg/mL
beryllium acetate (ICP grade) (as beryllium)	000543-81-7	RM10258	10.0 ± 0.1 µg/mL
bismuth (ICP grade)	007440-69-9	RM18332	10.0 ± 0.1 µg/mL
cadmium nitrate hydrate (ICP grade) (as cadmium)	010022-68-1	RM07888	10.0 ± 0.1 µg/mL
calcium carbonate (ICP grade) (as calcium)	000471-34-1	RM15103	10.0 ± 0.1 µg/mL
cesium nitrate (ICP grade) (as cesium)	007789-18-6	RM12568	10.0 ± 0.1 µg/mL
chromium (III) nitrate nonahydrate (ICP grade) (as chromium)	007789-02-8	RM14809	10.0 ± 0.1 µg/mL
cobalt nitrate hexahydrate (ICP grade) (as cobalt)	010026-22-9	RM12660	10.0 ± 0.1 µg/mL
copper (II) nitrate hydrate (ICP grade) (as copper)	010031-43-3	RM11059	10.0 ± 0.1 µg/mL
gallium (ICP grade)	007440-55-3	RM15201	10.0 ± 0.1 µg/mL
indium (ICP grade)	007440-74-6	RM16357	10.0 ± 0.1 µg/mL
iron (III) nitrate, ferric nitrate (ICP grade) (as iron)	007782-61-8	RM16294	10.0 ± 0.1 µg/mL
lead (II) nitrate (ICP grade) (as lead)	010099-74-8	RM10723	10.0 ± 0.1 µg/mL
lithium carbonate (ICP grade) (as lithium)	000554-13-2	RM07634	10.0 ± 0.1 µg/mL



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RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

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magnesium nitrate hexahydrate (ICP grade) (as magnesium)	013446-18-9	RM13723	10.0 ± 0.1 µg/mL
manganese (II) nitrate (ICP grade) (as manganese)	010377-66-9	RM13819	10.0 ± 0.1 µg/mL
nickel (II) nitrate hexahydrate (ICP grade) (as nickel)	013478-00-7	RM11144	10.0 ± 0.1 µg/mL
potassium nitrate (ICP grade) (as potassium)	007757-79-1	RM14314	10.0 ± 0.1 µg/mL
rubidium nitrate (ICP grade) (as rubidium)	007440-17-7	RM09802	10.0 ± 0.1 µg/mL
selenium (IV) oxide (ICP grade) (as selenium)	007446-08-4	RM10704	10.0 ± 0.1 µg/mL
silver nitrate (ICP grade) (as silver)	007761-88-8	RM13138	10.0 ± 0.1 µg/mL
sodium nitrate (ICP grade) (as sodium)	007631-99-4	RM10629	10.0 ± 0.1 µg/mL
strontium nitrate (ICP grade) (as strontium)	010042-76-9	RM12874	10.0 ± 0.1 µg/mL
thallium (I) nitrate (ICP grade) (as thallium)	010102-45-1	RM10594	10.0 ± 0.1 µg/mL
uranium nitrate hydrate (ICP grade) (as uranium)	007440-61-1	RM17084	10.0 ± 0.1 µg/mL
ammonium metavanadate (ICP grade) (as vanadium)	007803-55-6	RM12372	10.0 ± 0.1 µg/mL
zinc nitrate hexahydrate (ICP grade) (as zinc)	010196-18-6	RM07777	10.0 ± 0.1 µg/mL

Matrix: 5% nitric acid with trace hydrofluoric acid in water

Storage Conditions: Store at Room Temperature (15° to 30°C). Light Sensitive.

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification. □



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Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative



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