ISO 17034

Agilent
Trusted Answers

Certified Reference Material Certificate

Product Name	Custom Inorg Std - 15 at var. conc. (980mL)	**Lot Number:**	0006704193
Product Number	ICUS-0000304	**Lot Issue Date:**	07-Oct-2022
Storage Conditions:	Store at Room Temperature (15° to 30°C). (Protect from light.)	**Expiration Date:**	31-Oct-2024

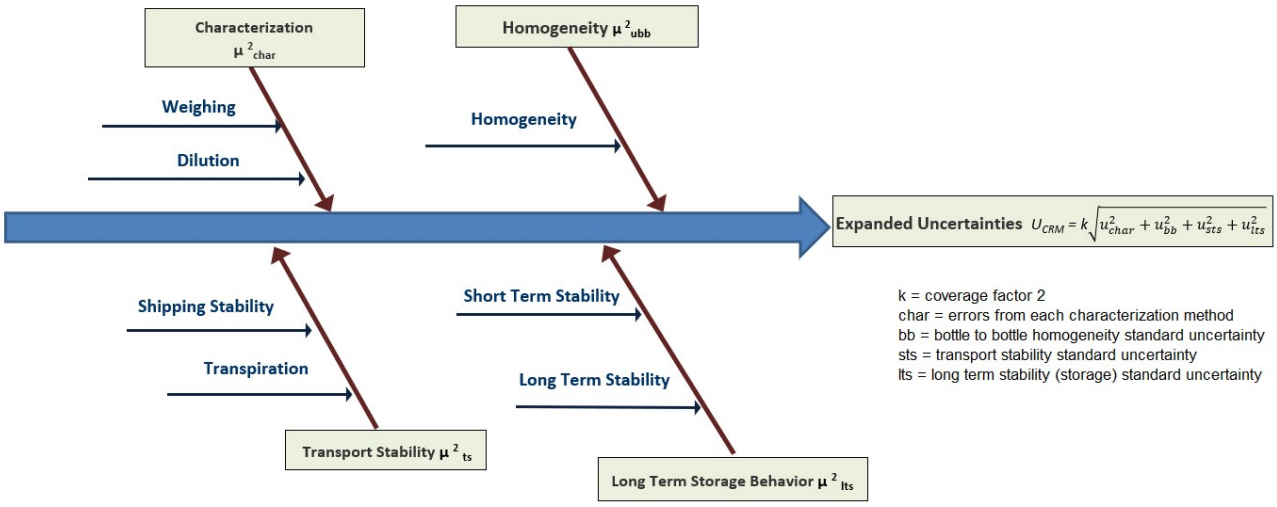
Analyte	Certified Value	CAS#	Verification	NIST SRM
copper (II) nitrate hydrate (ICP grade) (as copper)	1996 ± 9 µg/mL	010031-43-3	ICP-OES	3114
iron (III) nitrate, ferric nitrate (ICP grade) (as iron)	2.00 ± 0.01 µg/mL	007782-61-8	ICP-OES	3126a
lead (II) nitrate (ICP grade) (as lead)	2.00 ± 0.01 µg/mL	010099-74-8	ICP-OES	3128
zinc nitrate hexahydrate (ICP grade) (as zinc)	2.00 ± 0.01 µg/mL	010196-18-6	ICP-OES	3168a
nickel (II) nitrate hexahydrate (ICP grade) (as nickel)	2.00 ± 0.01 µg/mL	013478-00-7	ICP-OES	3136
silver nitrate (ICP grade) (as silver)	2.00 ± 0.01 µg/mL	007761-88-8	ICP-OES	3151
chromium (III) nitrate nonahydrate (ICP grade) (as chromium)	2.00 ± 0.01 µg/mL	007789-02-8	ICP-OES	3112a
arsenic (III) oxide (ICP grade) (as arsenic)	2.00 ± 0.02 µg/mL	001327-53-3	ICP-OES	3103a
cadmium nitrate hydrate (ICP grade) (as cadmium)	2.00 ± 0.01 µg/mL	010022-68-1	ICP-OES	3108
calcium carbonate (ICP grade) (as calcium)	2.00 ± 0.01 µg/mL	000471-34-1	ICP-OES	3109a
sodium nitrate (ICP grade) (as sodium)	2.00 ± 0.02 µg/mL	007631-99-4	ICP-OES	3152a
cobalt nitrate hexahydrate (ICP grade) (as cobalt)	2.00 ± 0.01 µg/mL	010026-22-9	ICP-OES	3113
ammonium hexafluorostannate (IV) (ICP grade) (as tin)	2.00 ± 0.03 µg/mL	016919-24-7	ICP-OES	3161a
magnesium nitrate hexahydrate (ICP grade) (as magnesium)	2.00 ± 0.01 µg/mL	013446-18-9	ICP-OES	3131a
aluminum nitrate nonahydrate (ICP grade) (as aluminum)	2.00 ± 0.01 µg/mL	007784-27-2	ICP-OES	3101a

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

Description:
This document was prepared in accordance with ISO 17034 and Guide 31. This Certified Reference Material is intended for use as a calibration standard for the quantitative determination of the analyte listed. The CRM was manufactured and verified in accordance with the ISO 9001 registered Quality Management System. The certified concentration value reported for the analyte is based upon the gravimetric and volumetric measurements made during the preparation of the standard. The analyte concentrations were verified by the accredited ISO 17025 laboratory using an appropriate analytical technique.

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, 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.

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using the coverage factor of k=2.



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

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

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

Intended Use:
This analytical standard 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.

Expiration of Certification:
The certification of this standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material 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