

INORGANIC VENTURES is an ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" and ISO 9001 registered manufacturer. Our manufacturing laboratory is accredited to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories."



CONDUCTIVITY REFERENCE MATERIAL 1413 µmhos/cm at 25°C

Catalog No: CON1413-25

Lot Number: F2-MEB427128

STABILITY AND STORAGE INFORMATION - This Reference Material can be stored at room temperature before opening. Exposure to air will affect the conductivity. Keep container tightly sealed.

CERTIFIED VALUES:

Temperature °C	Certified Value
20	1276 ± 4 µmhos/cm
25	1411 ± 5 µmhos/cm

This standard is traceable to NIST SRM 999b.

SPECIFICATIONS AND TRACEABILITY:

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\sum x_i}{n}$ (\bar{x}) = mean
 x_i = individual results
 n = number of measurements

Uncertainty $(\pm) = 2 [\sum (s_i)^2]^{1/2}$ 2 = the coverage factor
 $[\sum (s_i)^2]^{1/2}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

ANALYZED DENSITY OF SOLUTION (measured at 20 ± 1 °C): 0.999 g/mL

BALANCE CALIBRATION

All analytical balances are calibrated yearly by an A2LA accredited calibration laboratory and are traceable to a class E 2 analytical weight set with NIST Traceability. All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST).

THERMOMETER CALIBRATION

All thermometers are NIST traceable through thermometers that are calibrated by an A2LA accredited calibration laboratory.

GLASSWARE CALIBRATION

An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM's.

INTENDED USE

For calibration

HAZARDOUS INFORMATION

Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

HOMOGENEITY

This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Inorganic Ventures homogeneity data indicate that the end user should take a minimum sample size of 0.2mL to assure homogeneity.

QUALITY STANDARD DOCUMENTATION

- 1. ISO 9001 Quality Management System Registration**
- QMI File Number 010105
- 2. ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration"**
- Chemical Testing - Accredited A2LA Certificate Number 883.01
- 3. ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"**
- Reference Materials Production - Accredited A2LA Certificate Number 883.02
- 4. 10CFR50 Appendix B - Nuclear Regulatory Commission Facilities**
- Domestic Licensing of Production and Utilization Facilities
- 5. 10CFR21 - Nuclear Regulatory Commission**
- Reporting Defects and Non-Compliance

Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability. Transpiration studies of chemically-stable solutions performed at the manufacturer's facility show a CRM shelf-life of twenty one months for solutions packaged in 125-mL low density polyethylene bottles. When stored under special conditions that minimize transpiration and instability, the shelf life can be extended past this limit.

Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date

Chemical Stability - Studies have been conducted on this or similar CRMs and it has been demonstrated that this CRM is chemically stable for a period of not less than two years provided the "Stability and Storage information" is followed.

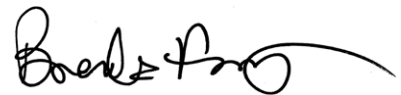
DATE OF CERTIFICATION AND PERIOD VALIDITY

Certification Date: July 12, 2012

Expiration Date:

NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Brenda Francis, Product Documentation Technician



Certificate Approved By: Brian Alexander, PhD., Quality Control Supervisor



Certifying Officer: Paul Gaines, PhD., Senior Technical Director

