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7212 ACC Blvd. | Raleigh, NC 27617 | 800.234.7837

Certificate of Analysis

Product Name: Total Chlorine Accuracy Check - 1.00 mg/L
Catalog Number: QCI-123
Lot Number: 230106
Manufacture Date: 01/06/23
Certified Date: 01/09/23

Expiration: 04/30/2024
Matrix: Water
Hazards: Irritant
(See MSDS)

Analyte	True Concentration (mg/L)	Certified Concentration (mg/L)	Acceptance Limits (mg/L)
Total Residual Chlorine	1.00 ± 0.005	0.974	0.746 - 1.20
Residual Free Chlorine	0.943 ± 0.005	0.943	0.726 - 1.16

This certified reference material (CRM) was manufactured and certified by NSI Lab Solutions following quality procedures meeting the requirements of ISO/IEC 17034:2016 and ISO/IEC 17025:2017. Our certificates and scopes of accreditation may be viewed at www.anab.org. True concentration is determined in our laboratory by analysis using DPD with n=10. Certified concentration is the concentration expected for a pool of laboratories using EPA approved methods of analysis. Acceptance limits are set at current NELAC limits.

Storage & Instructions For Use

This product must be stored at 2-8°C. Prepare for use while still cold. Keep away from light.
Add about 10-15 mL of reagent water to a 25 mL flask or cuvette. Hold teflon tube vertically and tap to make sure all solution is in the lower part of the tube. Open the tube by snipping off the top with a sharp pair of scissors. Hold tube into the flask or cuvette and aqueeze the bottom of the tube. The solution will release into the vessel. Bring to volume and mix by inversion 3-6 times. Proceed directly to analysis. Analysis should be completed as quickly as possible. See demonstration video at www.nsilabsolutions.com.

Traceability Information

Analyte Source Materials: All analytes and matrix materials are obtained and verified by NSI from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of NSI CRMs are tracked and documented.

Bulk Number	Description	CAS Number	Purity
W-1418-31	Sodium hypochlorite solution	7681-52-9	100%

Method of Preparation: This CRM was verified analytically. Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use as per ISO/IEC 17025 requirements.

Balance: All analytical balances are calibrated on a semiannual basis by an ISO/IEC 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 ISOIEC 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calbration and Traceability available upon request.

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

Intended Uses

- Calibration of analytical instruments
- Validation of analytical methods
- Preparation of working level reference materials, i.e. "check standards"
- Detection limit studies

Uncertainty

The ± uncertainty associated with the gravimetric concentration is the expanded uncertainty at 95% confidence interval (CI) with K=2. This expanded uncertainty incorporates contributions from manufacturing, homogeneity, shipping and long-term stability.

Homogeneity

This CRM was thoroughly mixed in production. Batch homogeneity was established through analysis of ten samples chosen at random. A minimum 0.1 mL sample size is recommended.

Stability/Expiration

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

Ewart Morris, Inorganics Technical Manager

Quentisha Forrester

Quentisha Forrester, Quality Lead