

Certificate of Analysis

Certified Reference Material

TOC 100 mg/L Calibration Standard



Number TOC100-500ML

Lot LRAA6838

Solvent (Matrix) Water

Hazard Irritant

Storage & Handling Store at 4°C.

Expiration Date December 31, 2017

Certification Date 11/21/2014

Certified By:

Christopher Rucinski - QA Director

Analyte	Certified Value ^{1,2}	Units	K ³
Total organic carbon (TOC) 2040	100 ± 1.53	mg/L	2.00

Additional Information

Description

The certified concentration is based upon gravimetric procedures. The uncertainty associated with the certified value is +/- 0.53% relative, which is the sum of the estimated errors due to the purity of the raw material, the gravimetric preparation of the solution, and losses due to packaging.

1. Certified value - based on a prepared to value and analytically verified by RTC with associated uncertainties from the preparation and analytical procedures.
2. Expanded Uncertainty - Uncertainty values in this document are expressed as Expanded Uncertainty (U_{cr}m) corresponding to the 95% confidence interval. U_{cr}m is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies.
3. k: Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. **Confidence interval = 95%**

Traceability: The standard was manufactured under an ISO/IEC 17025:2005 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available or other certified reference material as specified by each analyte.

Homogeneity: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH ISO/IEC 17025:2005 (A Class Cert AT-1467) and ISO GUIDE 34:2009 (A Class Cert AR-1470).



REFERENCE MATERIAL PRODUCER



TESTING

SIGMA-ALDRICH

2931 Soldier Springs Rd. Laramie, Wyoming 82070 USA

1 307-742-5452

rtctechgroup@sial.com

www.sigma-aldrich.com

