Certificate of Analysis

Turbidity 4000 NTU CalibrationStandard 500mL

Certified Reference Material

APROVADO
Responsável: Wellington
Padrão: J001A037J
Data: 07/01/2021
Validade: 06/2022

Description

Product ID TURB4000-500ML
Lot LRAC6604
Expiration Date June 2022
Manufacturing Date June 2020
Storage Conditions Refrigerate
Solvent/Matrix DI WATER

Certified Values

Analyte	*Units*	*Certified Value* [1,4]	*Analytical Value* [6]	*Raw Material Lot*
TURBIDITY	NTU	3990 ± 30	3990	LRAC6861

Additional Information:

DESCRIPTION
- The sample is provided as a 500mL whole volume.
- The solvent is water.

SAMPLE PREPARATION
1) Calibrate your instrument as directed by the manufacturer.
2) Ensure that the solution is thoroughly mixed immediately prior to analysis.
3) To mix invert bottle gently several times, do not shake. Shaking adds air to the sample and may cause erroneous results.

1 **Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.
4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. K=2 unless specified. 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. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u^2_{char} + u^2_{hom\ ogeneity} + u^2_{stability}}$$

k: Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

6 Analytical Value- For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

Traceability: The standard was manufactured under an ISO/IEC 17025:2017 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 preformed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Homogeneity: Homogeneity was assessed in accordance with ISO 17034:2016. 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.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH **ISO/IEC 17025:2017 (ANAB Cert AT-1467)** and **ISO 17034:2016 (ANAB Cert AR-1470).**

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

Certification Date June 09, 2020
Version 0-692020

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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