Certificate of Analysis

Turbidity 1 NTU CalibrationStandard Formazin 500ML

Description

Product ID	TURB1-500ML
Lot	LRAC5408
Expiration Date	January 2022
Manufacturing Date	January 2020
Storage Conditions	Refrigerate
Solvent/Matrix	DI WATER

APROVADO

Responsável: RENATO
Padrão: I001A03TU
Data: 21/09/2020
Validade: 30/01/2022

Certified Values

Analyte	Units	Certified [1,4] Value	Raw Material Purity,%	Analytical [6] Value	Raw Material Lot
TURBIDITY	NTU	1.00 ± 0.05	100	1.01	LRAC4739

Additional Information:

PREPARATION INSTRUCTIONS

Calibrate your instrument as directed by the manufacturer.

Ensure that the solution is thoroughly mixed immediately prior to analysis. To mix invert bottle gently several times, do not shake. This product is a suspension that may coalesce over time. Shaking, stirring or sonication for 30 minutes prior to use is recommended.

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. 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:

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

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	January 30, 2020
Version	0-1302020

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED TESTING LABORATORY