



Certificate of Analysis

AR 2092, AR2092-250

EDTA CRM

LOT # 520A

Theoretical Values:

Carbon - 41.099%

Hydrogen - 5.519%

Nitrogen - 9.586%

Oxygen - 43.796%

% ANALYSIS

Carbon MEAN = 41.10% ± 0.16%

Hydrogen MEAN = 5.52% ± 0.06%

Nitrogen MEAN = 9.59% ± 0.15%

Oxygen MEAN = 43.79% ± 0.17%

The uncertainty values represent the 95% confidence limit (k=2) where n=37 minimum.

This is High Purity (99%+) EDTA (C10-H16-N2-O8). It is intended for use as a calibration and or QC check for micro or macro analysis of C, H, N, O by high temperature combustion or pyrolysis using GC separation and utilizing TC or IR detection. Other valid test methods may be used with proper validation.

Reference Materials employed for verification:

NIST 143d, 141e

High Purity Sucrose, AR2021-C580693

High Purity Phenacetin, AEB2016-161015

High Purity EDTA, AR2030-Z04D016, AR2092-T15B032, AR2092-C14625, B2033-218909

The mean analytical values were derived by data sets showing validation to the above-mentioned reference materials and reported in mass fraction. Metrological traceability is to the SI derived unit of mass fraction expressed as percent. The precision values are derived using ISO Guide 35, the Guide to Uncertainty Measurement, and ANOVA. Refer to your test method or instrument manufacturer for any additional method derived uncertainty or recommended sample size if needed. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer, Chief Chemist, at Alpha Resources.

This CRM was identified and prepared in accordance with ARI-LAB-672. Analysis sample size and minimum sample size for this data was 2mg nominal. Refer to your instrument manufacturer or test method for the required analysis sample size. This bottle contains 50g (AR2092) or 250g (AR2092-250) of fine powder to be used without additional preparation. Keep sealed tightly and store under normal laboratory conditions. While unable to determine a definite shelf life this reference should be reviewed 10 years from certification.

The samples for round robin testing were selected in accordance with ARI-LAB-625. The above values relate only to the material used to produce this standard. Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event, shall Alpha Resources be liable for incidental or consequential damages. This certificate cannot be reproduced except in its entirety.

This is a Certified Reference Material and is traceable to the above-mentioned references. For good laboratory practice, it is recommended that all standards be verified as fit for purpose prior to use. This reference material was produced in accordance with ISO 17034. Refer to certificate AR-1920.

Certified September 9, 2020

Chief Chemist