



Certificate of Analysis

AR3151

NITROGEN IN VACUUM GAS OIL

LOT # 151697

LID ID 151697

WEIGHT PERCENT NITROGEN	= 0.000143	(1.43µg/g)
METHOD REPEATABILITY	= ±0.000022	(0.22µg/g)
METHOD REPRODUCIBILITY	= ±0.000097	(0.97µg/g)

Method used for analysis: ASTM D 4629-12

The intended use of this standard is for the calibration and or verification of Nitrogen analysis in petroleum distillate by ASTM D4629 or other valid testing methods. This standard was produced gravimetrically using high purity materials, with balances calibrated and checked by precision NIST traceable weights. The uncertainty value represents the calculated Repeatability (r) and Reproducibility (R) as described in ASTM D4629-12 section 15. 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. Normal test procedures should be employed when using this standard. This includes using the *reproducibility* and *repeatability* uncertainty for the test method you wish to employ. The material used in production of this standard was identified in accordance with ARI 041. The samples for round robin testing were selected in accordance with ARI 031. The above values relate only to the material used to produce this standard.

Before use, the contents of the bottle should be mixed by vigorous shaking. Any exposure to air and light should be kept to a minimum. Keep sealed and store upright under normal laboratory conditions. This bottle contains 100ml to be used as per the test method. Sample size and minimum sample size may be contingent upon your test method or instrumentation manufacturer recommendations. While unable to provide a definite shelf life, unopened and stored properly this product should be reverified every 20 years from certification. Once opened this certificate is valid for two years. This certified reference material was produced in accordance to ISO 17034(non-scope) and ISO Guide 31.

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 full.

This is a Certified Reference Material (working standard) and is traceable to the above-mentioned standards. For good laboratory practice, it is recommended that all standards be verified fit for purpose prior to use.

EXPIRATION DATE

THIS CRM IS VALID FOR TWO YEARS FROM THE DATE OF OPENING

Certified September 18, 2018

Chief Chemist