

Alpha Resources, Inc.

Certificate Of Analysis

AR 100

RESIDUAL OIL STANDARD

LOT # 100614	LID ID 100614	
Weight Percent Carbon	= 88.0	ASTM D 5291
Expanded Uncertainty	= 1.3	
Weight Percent Hydrogen	= 10.1	ASTM D5291
Expanded Uncertainty	= 0.2	
Weight Percent Nitrogen	= 0.19	ASTM D5762, D4629
Expanded Uncertainty	= 0.05	
Weight Percent Sulfur	= 0.93	ASTM D4294, D2622
Expanded Uncertainty	= 0.06	
Gross BTU/Pound	= 18,408	ASTM D 240, D4809
Expanded Uncertainty	= 127	

This standard was produced gravimetrically using high purity materials, with balances calibrated and checked by precision NIST traceable weights, and verified using the above ASTM methods. The precision value represents the two sigma 95% confidence limit (k=2) derived from analysis. 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 at Alpha Resources. Normal ASTM procedures should be employed when using this standard. This includes using the *reproducibility* and *repeatability* factors for the ASTM method you wish to employ.

Notes:

Before use, the contents of the bottle should be mixed through vigorous shaking. The contents should not be exposed to air for a lengthy period of time. This bottle contains 100ml petroleum distillate to be used as per your test method. Keep sealed this product has an indefinite shelf life. Once opened this certificate is valid for 2 years only. Store under normal laboratory conditions.

This is a Certified Reference Material (CRM), and is verified by the above-mentioned ASTM test standards. For good laboratory practice it is recommended that all standards be verified prior to use. 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.

EXPIRATION DATE

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

July 7, 2014

