

Alpha Resources, Inc.

Certificate Of Analysis

AR 150

RESIDUAL OIL STANDARD

	LOT # 150809	LID ID 150809	
Weight Percent Carbon	=	88.80	ASTM D 5291
Standard Deviation	=	1.58	
Weight Percent Hydrogen	=	10.33	ASTM D5291
Standard Deviation	=	0.86	
Weight Percent Nitrogen	=	0.024	ASTM D5762
Standard Deviation	=	0.003	
Weight Percent Sulfur	=	0.26	ASTM D4294, D5453
Standard Deviation	=	0.04	D1552, D2622
Gross BTU/Pound	=	18,517	ASTM D 240, D4809
Standard Deviation	=	70	

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 is a Certified Reference Material (CRM), and is verified by the above-mentioned ASTM 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

October 9, 2009

