

Alpha Resources, Inc.

Certificate Of Analysis

AR-733

PROXIMATE METALLURGICAL COKE STANDARD

LOT #733311 LID # 771311

DRIED BASIS VALUE

| | | |
|---------------------------|---|----------|
| MEAN WEIGHT % SULFUR | = | 0.60 |
| STANDARD DEVIATION | = | +/- 0.02 |
| MEAN WEIGHT % ASH | = | 8.04 |
| STANDARD DEVIATION | = | +/- 0.42 |
| MEAN WEIGHT % VOL. MATTER | = | 0.85 |
| STANDARD DEVIATION | = | +/- 0.36 |
| BTU | = | 13123 |
| STANDARD DEVIATION | = | +/- 106 |
| FIXED CARBON (calculated) | = | 91.11 |

Methods Employed:

| | | |
|-------------|------|---------------|
| SULFUR | ASTM | D 4239 |
| ASH | ASTM | D 3174, D5142 |
| VOL. MATTER | ASTM | D 3175, D5142 |
| BTU | ASTM | D 5865 |

Notes:

The material used in production of this standard was sampled in accordance with ARI 031. The uncertainty values represent the expanded standard deviation (k=2, 95%) obtained through analytical testing, and may not represent your testing abilities. Normal ASTM procedures should be employed when using this standard; this includes using the *reproducibility* and *repeatability* factors for establishing method derived expanded analytical uncertainty 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 at Alpha Resources.

The samples for round robin testing were selected in accordance with ARI 014. The above values relate only to the material used to produce this standard. The analytical samples are recommended to be dried under a nitrogen atmosphere for a minimum of 70 minutes at 107° C +/- 3°C until a steady mass is achieved. Keep tightly sealed and store in a cool dry place.

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 is a Certified Reference Material (CRM). For good laboratory practice it is recommended that all standards be verified prior to use.

EXPIRATION DATE

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

CERTIFIED June 8, 2011



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