

# Alpha Resources, Inc.

## Certificate Of Analysis

AR-1712  
SULFUR IN COAL STANDARD

LOT # 712914 LID ID # 712914

### DRIED BASIS VALUE

WEIGHT PERCENT SULFUR = 5.88  
EXPANDED UNCERTAINTY = 0.16

### METHOD:

ASTM D 4239-12 AND ARI-035

This CRM is traced to N.I.S.T. SRM 2685b, 2684b, NCS FC28143

The analytical values were derived by (n=40) data points, and reported in mass fraction. The precision value represents the expanded degree of uncertainty based on errors from analytical assay at a 95% confidence level (k=2), and may not fit within your testing capabilities. Formal testing procedures should be followed when using this standard; this includes minimum sample size and using the *reproducibility* and *repeatability* factors of the method for establishing overall analytical uncertainty. 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, Technical Manager, at Alpha Resources.

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. The analytical samples were dried per the NMI used or corrected for moisture as per the test method. This standard was produced in accordance to ISO Guide 34 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. The above values relate only to the material used to produce this standard. This certificate cannot be reproduced except in full. This bottle contains 50g, minus 60 mesh (250 micron) coal powder. When kept stored and sealed properly this product has an indefinite shelf life. Once opened this certificate is valid for two years.


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 prior to use. These test results are accredited under the Alpha Resources Inc. laboratory's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AC-1200.

This standard was produced in accordance to Guide 34 at the time of certification. These same methods for producing reference materials have now been reviewed by an accreditation body. As of February 2015 our facility has become accredited under the ISO Guide 34:2009 for RMP issued by ANSI-ASQ National Accreditation Board, certificate AR1920.

### EXPIRATION DATE

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

Certified October 21, 2014



Technical Manager