

Alpha Resources, LLC

Certificate Of Analysis

AR-1720

PROXIMATE COAL STANDARD

LOT # 201215 LID # 751215
DRIED BASIS VALUE

MEAN WEIGHT % SULFUR	=	0.39
EXPANDED UNCERTAINTY	=	0.02
MEAN WEIGHT % ASH	=	6.80
EXPANDED UNCERTAINTY	=	0.43
MEAN WEIGHT % VOL. MATTER	=	42.12
EXPANDED UNCERTAINTY	=	0.94
BTU/lb	=	11713
EXPANDED UNCERTAINTY	=	76
FIXED CARBON (calculated)	=	51.08

Methods Employed:

SULFUR	ASTM	D 4239
ASH	ASTM	D 3174, D7582
VOL. MATTER	ASTM	D 3175, D7582
BTU	ASTM	D 5865

References used: Sulfur – NIST SRM 2682b, 2693; BTU- Benzoic Acid

The intended use of this standard is for the validation of various test methods as described above. Typical analytical sample size and minimum sample size is subject to the test method used. Refer to your test method or instrument manufacturer for necessary requirements. The precision values represent the expanded uncertainty (k=2, 95% confidence limit) obtained through analytical testing. Normal testing procedures should be employed when using this standard, this includes using the *reproducibility* and *repeatability* factors of the method for establishing method based 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 at Alpha Resources. This reference standard was produced in accordance to ISO Guide 31 and ISO Guide 34.

The material used in production of this standard was evaluated and 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. The analytical samples were dried or calculated for moisture as defined by the test method. This bottle contains 50g fine mesh (-250 μ) coal powder. Kept sealed this bottle has an indefinite shelf life. Once opened this certificate is valid for 2 years only. This certificate cannot be reproduced except in full. Keep closed and store under normal laboratory conditions.

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 (Working Standard), 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 November 15, 2016

