

Alpha Resources, Inc.

Certificate Of Analysis

AR-2754
MINERAL ANALYSIS STANDARD
LOT # 754714 LID # 780713

WEIGHT PERCENT MINERAL ANALYSIS OF ASH

SILICON DIOXIDE	=	48.91	± 2.83
ALUMINUM DIOXIDE	=	23.92	± 1.66
TITANIUM DIOXIDE	=	1.20	± 0.06
FERRIC OXIDE	=	18.78	± 0.53
CALCIUM OXIDE	=	1.04	± 0.09
MAGNESIUM OXIDE	=	0.85	± 0.13
POTASSIUM OXIDE	=	2.37	± 0.40
SODIUM OXIDE	=	0.23	± 0.05
SULFUR TRIOXIDE	=	1.28	± 0.27
PHOSPHORUS PENTOXIDE	=	0.22	± 0.03
STRONTIUM OXIDE	=	0.06	± 0.01
BARIUM OXIDE	=	0.09	± 0.02
MANGANESE OXIDE	=	0.04	
UNDETERMINED	=	1.01	

The ash content of the whole coal is 23.69%

Methods

ASTM D 3174

ASTM D 6349

ASTM D 4326

The material used in production of this standard was prepared and sampled in accordance with ARI 031 and ISO Guide 34-2009. The uncertainty values represent the expanded uncertainty (k=2, two sigma, 95% confidence) obtained through analytical testing by the mentioned ASTM methods, and may not reflect your testing capabilities. Normal test procedures should be employed when using this standard; this includes using the *reproducibility* and *repeatability* factors of the method for establishing 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, Technical Manager 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 should be dried or corrected for moisture as per the test method you are using.

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 July 15, 2014

