

Alpha Resources, Inc. Certificate Of Analysis

AR-2772

ULTIMATE METALLURGICAL COKE STANDARD

LOT # 721009

LID # 721009

DRIED BASIS VALUES

Proximate Analysis	ASTM	Ultimate Analysis	ASTM
% Ash.....	9.57 +/- 0.12 D3174/D5142	% Carbon.....	87.26 +/- 0.98 D5373
% Volatile Matter.....	0.42 +/- 0.06 D3175/D5142	% Hydrogen.....	(0.29) D5373
% Fixed Carbon (calculated)	90.01 D3172	% Nitrogen.....	1.13 +/- 0.05 D5373
% Sulfur.....	0.76 +/- 0.01 D4239	% Oxygen (calculated)	0.99 D5373
Btu.....	12878 D5865	MAF/DAF BTU	14062 D3180
Mineral Analysis	ASTM	Sulfur Forms	ASTM
Silica.....	51.60 +/- 0.69 D4326/D3682	% Pyritic.....	<0.01 D2492
Alumina.....	28.51 +/- 0.35 D4326/D3682	% Organic (calculated).....	0.76 D2492
Titania.....	1.54 +/- 0.02 D4326/D3682	% Sulfate.....	<0.01 D2492
Ferric Oxide.....	11.74 +/- 0.37 D4326/D3682	% Chlorine.....	0.02 D6721
Calcium Oxide.....	1.83 +/- 0.08 D4326/D3682	Ash Fusion Temperature	Degrees F
Magnesium Oxide.....	0.90 +/- 0.01 D4326/D3682	REDUCING/OXIDIZING	ASTM
Potassium Oxide.....	1.91 +/- 0.03 D4326/D3682	Initial deformation...R	2492 D1857
Sodium Oxide.....	0.49 +/- 0.02 D4326/D3682	Softening.....R	2611 D1857
Sulfur Trioxide.....	0.84 +/- 0.10 D4326/D3682	Hemispherical.....R	2660 D1857
Phosphorus Pentoxide.....	0.34 +/- 0.02 D4326/D3682	Fluid/Final.....R	2695 D1857
Strontium Oxide.....	0.11 +/- 0.02 D4326/D3682	Initial deformation...O	2661 D1857
Barium Oxide.....	0.16 +/- 0.01 D4326/D3682	Softening.....O	2700 D1857
Manganese Oxide...	0.10 +/- 0.01 D4326/D3682	Hemispherical.....O	2700 D1857
Undetermined (calculated)	<0.01	Fluid/Final.....O	2700 D1857

Values in brackets are given for reference only.

The material used in production of this standard was sampled in accordance with ARI 031. The precision values represent the normal standard deviation (k=1) 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 of the method for establishing 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.

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

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 January 5, 2010



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