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Certificate of Analysis
Part No. B2320
Ultimate Coal CHNS Standard

RM Doc Number: 731123

Analytical Results

Proximate Analysis		**n=**	**k=**	**ASTM**
% Ash	7.86 ± 0.19	21	2.1	D3174/D7582
% Volatile Matter	39.29±2.46	21	2.1	D3175/D7582
% Fixed Carbon (calculated)	(52.85)	--	--	D3172
% Sulfur	0.62 ± 0.04	28	2.1	D4239
Btu/lb	11829 ± 63	8	2.4	D5865

Ultimate Analysis		**n=**	**k=**	**ASTM**
% Carbon	70.18±0.48	8	2.4	D5373
% Hydrogen	4.19 ± 0.56	8	2.4	D5373
% Nitrogen	0.98 ± 0.16	8	2.4	D5373
% Oxygen (calculated)	(16.17)	--	--	D3176

Mineral Analysis		**n=**	**k=**	**ASTM**
% Silica	36.43±4.57	8	2.4	D4326/D6349
% Alumina	15.90±1.90	8	2.4	D4326/D6349
% Titania	1.40 ± 0.18	8	2.4	D4326/D6349
% Ferric Oxide	6.59 ± 0.72	8	2.4	D4326/D6349
% Calcium Oxide	17.07±1.81	8	2.4	D4326/D6349
% Magnesium Oxide	3.57 ± 0.49	8	2.4	D4326/D6349
% Potassium Oxide	0.51 ± 0.11	8	2.4	D4326/D6349
% Sodium Oxide	0.66 ± 0.10	8	2.4	D4326/D6349
% Sulfur Trioxide	(15.96)	-	-	D4326/D6349
% Phosphorus Pentoxide	0.67 ± 0.05	8	2.4	D4326/D6349
% Strontium Oxide	(0.32)	--	--	D4326/D6349
% Barium Oxide	0.47 ± 0.04	8	2.4	D4326/D6349
% Manganese Oxide	(0.02)	--	--	D4326/D6349

Sulfur Forms		**ASTM**
%Pyritic	(0.05)	D2492
%Organic (calculated)	(0.45)	D2492
% Sulfate	(0.12)	D2492

Ash Fusion Temperature ASTM D1857	**Degrees F Reducing**	**Degrees F Oxidising**
Initial deformation	(2133)	(2230)
Softening	(2202)	(2251)
Hemispherical	(2226)	(2269)
Fluid/Final	(2340)	(2355)

% Chlorine D4208/D6721	(0.0257)
% Fluorine D3761/D5987	(0.0056)

REFERENCES USED: Sulfur - NIST SRM 2682c, 1632d, NCS FC28006j, BTU - NIST 39j (Benzoic Acid); Mineral Analysis – NIST 1635a, 1634a; Chlorine – SRM 1635a, 1632d; Fluorine – SRM 1635a, 1632d.
() Indicates reference or information only value.

**The analytical results above are provided by an accredited reference material manufacturer with a current certification in ISO 17025 and 17034.*

The intended use of this Reference Material (RM) is for the verification of various tests by the above-mentioned methods.

The typical and minimum sample size to perform this intended use is subject to the test method and instrumentation used.

The Period of Validity for this RM is 15 years from the date of certification.

This bottle contains 50g of fine coal powder (-60 mesh) to be used per the test method you follow. Keep sealed tightly and store under normal laboratory conditions. The analytical samples should be dried or corrected for moisture as per the test method you are using.

Refer to your test methods and or manufacturer manual for expanded uncertainties, repeatability/reproducibility factors.

For good laboratory practice, we recommend that all reference materials be verified as fit for purpose prior to use. Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Elemental Microanalysis Ltd. be liable for incidental or consequential damages.

Certified on the 24th of January 2025

Elemental Microanalysis Ltd