

Elemental Microanalysis Limited

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Certificate of Analysis

Part No. B2320

Ultimate Coal Standard

Certificate Number 751215
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Dried Basis Values**Proximate Analysis**

% Ash	6.80 +/-0.43
% Volatile Matter	42.12 +/-0.94
% Fixed Carbon (calculated)	51.08
% Sulphur	0.39 +/-0.02
BTU	11713 +/-76

Ultimate Analysis

% Carbon	69.38 +/-1.71
% Hydrogen	4.59 +/-0.19
% Nitrogen	0.93 +/-0.16
% Oxygen (calculated)	17.91
MAF/DAF BTU	12567 +/-78

%Mineral Analysis

Silica	28.88 +/-2.91
Alumina	14.78 +/-1.83
Titania	1.29 +/-0.29
Ferric Oxide	5.06 +/-0.85
Calcium Oxide	(22.61+/-4.13)
Magnesium Oxide	5.68 +/-0.90
Potassium Oxide	0.22 +/-0.03
Sodium Oxide	1.61 +/- 0.29
Sulphur Trioxide	(13.68+/-2.01)
Phosphorus Pentoxide	0.77 +/-0.20
Strontium Oxide	0.39 +/-0.09
Barium Oxide	0.63 +/-0.11
Manganese Dioxide	(0.05)
Undetermined (calculated)	(4.17)

Sulphur Forms

% Pyritic	(0.01)
% Organic (calculated)	0.37+/-0.03
% Sulphate	(0.01)

Ash Fusion Temperature

	Degrees F Reducing	Degrees F Oxidising
Initial Deformation	2146	2170
Softening-	2170	2198
Hemispherical	2180	2207
Fluid/Final	2206	2241
% Chlorine	(0.004)	

REFERENCES USED: Sulphur NIST SRM 2682b, 2693; BTU - Benzoic Acid.

Brackets () indicates reference-only value.

Notes:

The material used in production of this standard was prepared and sampled in accordance with ARI 041 and ISO Guide 34. The uncertainty values represent the expanded uncertainty (k=2, 95% confidence) obtained through analytical testing 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 method expanded analytical uncertainty, if needed.

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 corrected for moisture as per the test method you are using. This bottle contains 50g, fine coal powder (-60 mesh). Kept sealed this product has an indefinite shelf life. Once opened, this certificate is valid for two years. Keep sealed tight 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 Elemental Microanalysis Ltd be liable for incidental or consequential damages.

This is a Certified Reference Material (Working Standard), and is traceable (Sulphur) to the above mentioned NMI references. For good laboratory practice it is recommended that all standards be verified prior to use.

This CRM is valid for two years from the date of opening.

Certified November 15, 2016

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