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Certificate of Analysis Part No. B2312 Coal Standard

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Dried Basis Value

Weight Percent Sulphur = 5.79 Expanded Uncertainty = +/- 0.08

Method: ASTM D 4239-17 and ARI-035

This CRM is traced to N.I.S.T. SRM 2685b, 2685c, NCS FC28143 Alpha – AR2782-782614, AR1712-121208, AR1711-711209, AR1712-712914, AR2782-782118

The intended use of this reference material is for the calibration and quality validation of sulphur by resistance furnace, infra-red detection analysis as specified by ASTM 4239 or other valid test methods. The analytical values were derived by a number of data points (n=40) and reported in mass fraction. The sample size used and minimum sample size is approximately 300-500mg. The precision value represents expanded degree of uncertainty based on errors from analytical assay at a 95% confidence interval (k=2). Formal testing procedures should be followed when using this standard; this includes using the *reproducibility* and *repeatability* factors for establishing overall analytical uncertainty.

The material used in production of this standard was identified in accordance with ARI 041. The samples for round robin 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 per the NMI used or corrected for moisture as per the test method. Keep sealed 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 bottle contains 50g, minus 60 mesh (250 micron) coal powder. While unable to determine a definite shelf life, this reference should be reviewed every 20 years from the date of certification. Once opened, this certificate is valid for two years.

This is a Certified Reference Material (working reference standard), and is traceable to the abovementioned standards. For good laboratory practice it is recommended that all standards be verified fit for purpose prior to use.

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

Elemental Microanalysis Limited

Certified April 13, 2018