

**% Carbon**  
Mean = 7.58  
Expanded Uncertainty =  $\pm 0.31$   
(k=2, @95% confidence) (n=59)

**% Sulphur**  
Mean = 3.27  
Expanded Uncertainty =  $\pm 0.13$   
(k=2, @95% confidence) (n=46)

The intended use is for Carbon and Sulphur determination in ore or other similar matrix materials using induction and resistance type oxygen combustion furnaces with infrared detection systems. Accelerants like Tungsten Trioxide (WO<sub>3</sub>) were used in the resistance furnace. Tungsten metal and iron chip accelerators were used in the induction analysis.

Method of analysis: ASTM E1915-13 and ARI-LAB-621.

Reference Materials Employed for traceability and validation:

NCS – DC28091, DC28234b, DC70010, DC60119, DC73326, DC73005, DC70019

ECRM – 701-1

NIST – SRM 1d

ALPHA – AR4007-1203, AR4007-418B, AR4022-101102, AR4006-121702, AR4006-119B

The mean analytical values were derived by data sets showing traceability to the above-mentioned reference standards and reported in mass fraction. The mean and uncertainty values are derived under the guidance of ISO Guide 35, the Guide to Uncertainty Measurement, and ANOVA. Metrological traceability is to the SI derived unit of mass fraction expressed as percent. Your test method may not meet the listed uncertainty refer to your test method or instrument manufacturer for the expanded method derived uncertainty if needed. When necessary, professional judgment is applied toward consideration of data and statistical information.

Sample size and minimum sample size used for this data was 150-250mg nominal. Refer to your instrument manufacturer for typical sample analysis size. This bottle contains 30g of fine powder to be used directly from the bottle without preparation. Keep tightly sealed and store under normal laboratory conditions. While unable to determine a definite shelf life this reference should be reviewed 20 years from certification.

The material used in production of this standard was sampled in accordance with ARI-LAB-603. The samples for round robin testing were selected in accordance with ARI-LAB-625. The above values relate only to the material used to produce this standard. 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 certificate cannot be reproduced except in its entirety.

This Reference Material (RM) is traceable to the above-mentioned standards. For good laboratory practice it is recommended that all standards be verified as fit for purpose prior to use.

Certified on the 14<sup>th</sup> of September 2022

Elemental Microanalysis Ltd