



**Certificate of Analysis**  
**Part No. B2500**  
**Carbon & Sulphur Ring Standard**

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**% Carbon**  
**Mean = 0.027**  
**One Sigma Standard Deviation =  $\pm 0.002$**   
**Expanded Uncertainty =  $\pm 0.005$**   
**( $k=2.5$ , 95% confidence limit)( $n=48$ )**

**%Sulphur**  
**Mean = 0.0249**  
**One Sigma Standard Deviation =  $\pm 0.0018$**   
**Expanded Uncertainty =  $\pm 0.0036$**   
**( $k=2$ , 95% confidence limit)( $n=48$ )**

Method of analysis is ASTM E 1019-11 and ARI 033

Primary (NMI) Standards Employed:

NIST SRM	125b, 248a, 337a, 152a, 123c
JSS	652-15
BAM/BCS	284-2, 231-2, 289-1, 183-1
NCS	NS13013

**Notes**

The intended use of this reference standard is for the calibration and verification of induction combustion Carbon/Sulphur analysis by infra-red detection as described by ASTM E-1019. The mean analytical values were derived by 5 data sets showing traceability to the above mentioned NMI standards, and reported in mass fraction. The minimum and typical size for testing was 1g (1 ring) per ASTM E1019. The precision values represent the estimated uncertainty derived from the data sets and may not represent your testing capabilities. Refer to your test method for additional uncertainty information. When necessary, professional judgment is applied toward consideration of data and statistical information.

The material used in production of this standard was identified in accordance with ARI 032. 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. This bottle contains 454g, 1g rings (nominal weight), to be used directly from the bottle with no preparation needed. This standard has an indefinite shelf life. 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 certificate cannot be reproduced except in full.

This Reference Material (working standard) is traceable to the above-mentioned standards. For good laboratory practice, it is recommended that all standards be verified prior to use.

Certified April 13, 2017

For and on behalf of  
Elemental Microanalysis Limited