

**Certificate of Analysis
Part No. B2360
Residual Oil Standard**

Certificate Number 891418
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**Weight Percent Sulphur = 0.125
Expanded Uncertainty = +/- 0.015
(k=2, @ 95% confidence limit)**

Methods used for analysis: ASTM D 4294-16, ARI-078

NMI Standard(s) used: NIST 1619a
Alpha – AR2891-891606, AR2892-892716

The intended use of this standard is for the calibration and or verification of sulphur analysis by XRF or other valid testing methods. This standard was produced gravimetrically using high purity materials, with balances calibrated and checked by precision NIST traceable weights. The above ASTM test method and NMI references listed were used for testing. The uncertainty value represents the 95% confidence limit (k=2) derived from analysis (n=28), and possible errors in weighing. The sample size used for testing was placed into a removable sample cup, equipped with replaceable X-ray plastic film and providing a sample depth of at least 4mm and a diameter of at least 10mm. Normal test procedures should be employed when using this standard. This includes the reproducibility and repeatability uncertainty for the method you wish to employ. The material used in production of this standard was sampled in accordance with ARI 041. The samples used for round robin testing were selected in accordance with ARI 031. The above values relate only to the material used to produce this standard.

Before use, the contents of the bottle should be mixed by vigorous shaking. Any exposure to air and light should be kept to a minimum. Keep sealed and store upright under normal laboratory conditions. This bottle consists of 100ml to be used as per the test method. Sample size and minimum sample size may be contingent upon your test method or instrument manufacturer recommendations. While unable to determine a definite shelf life, this reference should be reviewed every 20 years from certification. Once opened, this certificate is valid for two years.

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 to the above-mentioned standards. 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

Elemental Microanalysis Limited

Certified April 26, 2018