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**Certificate of Analysis**  
**Part No. B2419**  
**Steel Pin Standard**

RM Doc Number: 250217  
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**Analytical Results**

**% Oxygen**

Value = 0.0008  
Expanded Uncertainty =  $\pm 0.0003$   
 $k \approx 2$  (95% confidence)

**% Nitrogen**

Value = 0.0040  
Expanded Uncertainty =  $\pm 0.0006$   
 $k \approx 2$  (95% confidence)

**Methods Employed:**

JCGM 100:2008; Evaluation of Measurement Data – Guide to the Expression of Uncertainty in Measurement; (GUM 1995 with Minor Corrections), Joint Committee for Guides in Metrology (JCGM) (2008); available at [https://www.bipm.org/utils/common/documents/jcgm/JCGM\\_100\\_2008\\_E.pdf](https://www.bipm.org/utils/common/documents/jcgm/JCGM_100_2008_E.pdf) (accessed February 2025).

JCGM 101:2008; Evaluation of Measurement Data – Supplement 1 to the Guide for the Expression of Uncertainty in Measurement; Propagation Distributions Using a Monte Carlo Method; Joint Committee for guides in Metrology (JCGM) (2008); available at [https://www.bipm.org/utils/common/documents/jcgm/JCGM\\_100\\_2008.pdf](https://www.bipm.org/utils/common/documents/jcgm/JCGM_100_2008.pdf) (accessed February 2025).

*\*The analytical results above are provided by an accredited reference material manufacturer with a current certification in ISO 17025 and 17034.*

The intended use of this Reference Material (RM) is for the verification and calibration of inert gas fusion for the determination of Oxygen and Nitrogen.

The minimum sample size to perform this intended use is 1 Pin.

The Period of Validity for this RM is 20 years after opening, if the RM is handled and stored in accordance with the instructions given in this certificate.

This bottle contains 100g of Steel Pins and pins are of nominal 1.0g mass, to be used per the test method you follow. Keep sealed tightly and store under normal laboratory conditions.

Pins should be rinsed in acetone and dried before use.

Refer to your test methods and or manufacturer manual for expanded uncertainties, repeatability/reproducibility factors.

For good laboratory practice, we recommend that all reference materials be verified as fit for purpose prior to use. 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.

Certified on the 6<sup>th</sup> of October 2025.

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