

**Certificate of Analysis
Part No. B2410
Steel Pin Standard**

Certificate Number 717C
Page 1 of 1

% Oxygen
Mean = 0.0013
Standard Deviation = +/-0.0002
Expanded Uncertainty = +/-0.0005
(k=2, @ 95% confidence, n=60)

% Nitrogen
Mean = 0.0771
Standard Deviation = +/-0.0007
Expanded Uncertainty = +/-0.0015
(k=2, @ 95% confidence, n=49)

Method of analysis is ASTM E 1019-11 and ARI 034

Primary (NMI) Standards Employed

NIST	1096, 1095, 343a, 1098, 1754
BAM	291-1
JSS	384-1
JK	36
NCS	NS21007

ALPHA - AR654-914G, AR661-412B, AR655-914D, AR662-215A, AR668-1014B,
AR663-1015D, AR667-315B, AR662-517B

Notes

This pin standard is intended to be a calibration or QC validation of Oxygen and Nitrogen on inert gas fusion analysers utilizing infrared and thermal conductivity detection as described in ASTM E1019. The analytical sample and minimum size used for testing was 1 pin (1.0g nominal). The precision values represent the estimated mean, standard deviation and expanded uncertainty derived from the data sets. Refer to your test method and or your instrument manufacturer for the expanded method derived uncertainty.

The material used in production of this standard was sampled in accordance with ARI 032. The samples used 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 consists of 50g, 0.5g pins (nominal), to be used directly from the bottle with no preparation. While unable to determine a definite shelf life, this reference should be reviewed every 25 years from the date of certification. 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 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.

Certified Feb 23, 2018

Elemental Microanalysis Limited