Alpha Resources, Inc.
Certificate Of Analysis

AR 676
HIGH OXYGEN & NITROGEN PIN STANDARD
LOT # 514B

% OXYGEN	% NITROGEN
MEAN = 0.0234	MEAN = 0.118
One Sigma Standard Deviation = +/- 0.0022	One Sigma Standard Deviation = +/- 0.007
Expanded Uncertainty = +/- 0.0044	Expanded Uncertainty = +/- 0.014
(k=2, 95% confidence)	(k=2, 95% confidence)

NOTE: The addition of graphite powder was used during analysis. The black/brown color of the pins is normal.

Method of Analysis is ASTM E 1019-11, and ARI 034
Primary (NMI) Standards Employed:

NIST	**346a, 1090, 343a**
JSS	**370-1**
BAM	**O3**
NCS	**NS11034**

(NMI references for this concentration level are limited)

Notes:

The mean analytical values were derived by 4 data sets (n=40) showing traceability to the above mentioned NMI standards, and reported in mass fraction. 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 the expanded method derived uncertainty if needed. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer, Technical Manager, at Alpha Resources.

The material used in production of this standard was sampled 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 50g, 0.5g pins, 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 Alpha Resources be liable for incidental or consequential damages. This certificate cannot be reproduced except in full.

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. These test results are accredited under the Alpha Resources Inc. laboratory's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AC-1200.

Certified August 22, 2014

Technical Manager

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