

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 1648  
OXYGEN & NITROGEN PIN STANDARD  
LOT # 104923A10

PPM OXYGEN  
MEAN = 107  
ONE SIGMA = 4  
TWO SIGMA = 8  
RANGE = 99 to 115

PPM NITROGEN  
MEAN = 61  
ONE SIGMA = 3  
TWO SIGMA = 6  
RANGE = 55 to 67

Method of Analysis is ASTM E 1019-08, ARI 034

Primary Standards Employed:

JSS	GS-5d, 102-6, 3-37
BAM	O2a, 079-1, 028-1, 284-2
NIST	1091a, 368
NCS	NS22007

### Notes:

The mean analytical values were derived by a number of data sets (n=40) following ASTM E1019-08 and ARI 034. The precision values represent the standard deviation, two times the standard deviation (k=2, 95% confidence), and complete range of analysis. 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 standard consist of 100, 1g pins with no expiration date.

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 is a Certified Reference Material (CRM), and is traceable to the above-mentioned standards. For good laboratory practice it is recommended that all standards be verified prior to use.

This calibration standard is accredited and meets the requirements of ISO/IEC 17025 as verified by ACLASS the ANSI-ASQ National Accreditation board. Alpha Resources is an ISO/IEC 17025 accredited laboratory. For more information concerning our scope of accreditation contact Alpha Resources.

Certified December 3, 2010  
Technical Manager



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