

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 646  
OXYGEN & NITROGEN PIN STANDARD  
LOT # A9247H909

PPM OXYGEN  
MEAN = 53  
ONE SIGMA = 2  
TWO SIGMA = 4  
RANGE = 49 to 57

PPM NITROGEN  
MEAN = 667  
ONE SIGMA = 7  
TWO SIGMA = 14  
RANGE = 653 to 681

Method of Analysis is ASTM E 1019-08 and ARI 034  
Primary Standards Employed:

JSS	GS-3c, GS-1d
NIST	1099, 343a, 367
BAM	238-1, 284-2, 227-1

#### Notes:

The mean analytical values were derived by a number of data sets (n=40) by various instrumentation meeting ASTM E1019-03. The precision/uncertainty values represent the standard deviation, two times the standard deviation (expanded uncertainty k=2, 95% confidence), and complete range of analysis data. 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 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.

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 February 1, 2010



P.O Box 199 3090 Johnson Road Stevensville, MI 49127 Phone (269) 465-5559 Fax (269) 465-3629

[www.alpharesources.com](http://www.alpharesources.com)

Page 1 Of 1