

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 670  
OXYGEN & NITROGEN PIN STANDARD  
LOT # 172614509

PPM OXYGEN  
MEAN = 255  
ONE SIGMA = 10  
TWO SIGMA = 20  
RANGE = 236 to 275

PPM NITROGEN  
MEAN = 123  
ONE SIGMA = 4  
TWO SIGMA = 8  
RANGE = 115 to 131

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

JSS	3-37, GS-5d, 4-80
NIST	50c
BAM	029-1, O2a, 028-1, 284-2, 228-1
NCS	NS22007

### 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.

Alpha Resources is an ISO/IEC 17025 accredited laboratory. For more information concerning our scope of accreditation contact Alpha Resources.

Certified June 29, 2009



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