

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 642  
TITANIUM STANDARD  
LOT # C52404

**PPM OXYGEN**  
MEAN = 1500  
ONE SIGMA = 62  
TWO SIGMA = 124  
RANGE = 1376 – 1624

**PPM NITROGEN**  
MEAN = 103  
ONE SIGMA = 24  
TWO SIGMA = 48  
RANGE = 55 – 151

**PPM HYDROGEN**  
MEAN= 47 PPM  
ONE SIGMA= 4 PPM  
TWO SIGMA= 8 PPM  
RANGE= 39 – 55 PPM

Method of Analysis is ASTM E 1409, E 1447, E 1937

Primary Standards Employed:  
NIST 352b, 352c, 353  
NCS NS 57003, NS 57004  
BCR 24, 59, 276

Notes:

For optimal nitrogen analysis, it is recommended that a sample weight of 0.1g be used.

The mean analytical values were derived by a number of data sets utilizing various ASTM approved instruments.

The precision values represent the standard deviation, two times the standard deviation, 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 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 September, 2004



Page 1 of 1

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Page 1 Of 1