

Alpha Resources, Inc.

Certificate Of Analysis

AR 642
TITANIUM STANDARD
LOT # C80410

PPM OXYGEN
MEAN = 1634
ONE SIGMA = 28
TWO SIGMA = 56
RANGE = 1578 to 1690

PPM NITROGEN
MEAN = 130
ONE SIGMA = 18
TWO SIGMA = 36
RANGE = 94 to 166

PPM HYDROGEN
MEAN = 45
ONE SIGMA = 2
TWO SIGMA = 4
RANGE = 41 to 49

Method of Analysis is ASTM E 1409-08, E 1447-09, E 1937-04, ARI 034, and ARI 036

Primary Standards used for calibration:

NIST SRM	2452, 2453, 173c, 173b
NCS	NS57003, NS57103, NS57001, NS57102, NS57103
BCR CRM	24, 276, 275

Notes

The mean analytical values were derived by a number of data sets (n=30) by various instrumentation using the above ASTM and ARI methods. The precision values represent the standard deviation, two times the standard deviation (k=2, 95% confidence level), 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. This standard requires no further preparation and is to be used directly from the bottle. 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 October 12, 2010



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