

Alpha Resources, Inc.

Certificate Of Analysis

AR 648
TITANIUM STANDARD
LOT # 8340708910

PPM OXYGEN
MEAN = 1806
ONE SIGMA = 11
TWO SIGMA = 22
RANGE = 1784 to 1828

PPM NITROGEN
MEAN = 60
ONE SIGMA = 8
TWO SIGMA = 16
RANGE = 44 to 76

PPM HYDROGEN
MEAN = 162
ONE SIGMA = 12
TWO SIGMA = 24
RANGE = 138 to 186

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

Primary Standards used for calibration:

	Gas Dose
NIST SRM	2454, 2453, 173c
NCS	NS57003, NS57101, NS57103, NS57102
BCR CRM	275, 276

Notes

The mean analytical values were derived by a number of data sets (n=30). 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 bottle consists of 10g material in .1g pins and is to be used directly from the bottle. This product has an indefinite shelf life.

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 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 November 29, 2010



Kent Dyer Technical Manager

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