

Alpha Resources, LLC

Certificate Of Analysis

AR 556
HYDROGEN IN STEEL
LOT # 916E

*TOTAL HYDROGEN (melted/fused)
*MEAN VALUE = 6.2 (ug/g) (0.00062 wt. %)
*STANDARD DEVIATION = 0.9 (ug/g) (± 0.00009 wt. %)
*EXPANDED UNCERTAINTY = 1.8 (ug/g) (± 0.00018 wt. %)
(Expanded uncertainty $k=2$, 95% confidence, $n=71$)

Method of Analysis:
LECO RH-404, ELTRA ONH 2000 Inert Gas Fusion, TC Detection

Standard reference materials used for certification:

NCS	NS20042
JSS	GS-7a, SS 5-18

Notes:

The precision values represent the standard deviation and expanded uncertainty ($k=2$, 95% confidence). This standard was produced in accordance to ISO Guide 31 and ISO Guide 34.

The material used in production of this standard was identified in accordance with ARI 032. The samples for round-robin testing were selected in accordance with ARI 014. This standard is intended to be used for Hydrogen gas analysis by inert gas fusion TC cell detection. The sample size used for this data and minimum sample size is 1g nominal or 1 pin. The above values relate only to the material used to produce this standard. This certificate cannot be reproduced except in full. The statistical analysis, overall direction, and coordination of the analytical measurements leading to certification were performed by K. E. Dyer at Alpha Resources Inc. This bottle contains 100, 1g pins (nominal), to be used directly from the bottle. This standard has an indefinite shelf life, kept sealed and stored under normal laboratory conditions.

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 (Working Standard), and is traceable to the above-mentioned standards. For good laboratory practice, it is recommended that all standards be verified prior to use.

Certified November 18, 2016 (original certification date)

*(This certificate has been revised on April 27, 2017 to revise the mean, standard deviation, and expanded uncertainty to reflect new additional data obtained. There is no perceived impact upon the industry because of this change.)



Technical Manager