

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 510  
HIGH CARBON STEEL PIN STANDARD  
LOT # 513A

**% CARBON**  
MEAN = 2.41  
One Sigma Standard Deviation = +/- 0.05  
Expanded Uncertainty = +/- 0.11  
(k=2.2, 95% confidence)

**% SULFUR**  
MEAN = 0.091  
One Sigma Standard Deviation = +/- 0.004  
Expanded Uncertainty = +/- 0.008  
(k=2, 95% confidence)

Method of Analysis is ASTM E 1019-11, ARI 033 and ARI 034

Primary (NMI) Standards Employed:

NIST SRM	107c, 8k
BAM	482-2
JSS	120-1
NCS	HC16006B, HC11010

### Notes:

The mean analytical values were derived by 5 data sets (n=50) showing traceability to the above mentioned NMI standards, and reported in mass fraction. The precision values represent the estimated expanded uncertainty derived from the data sets and may not represent your testing capabilities. Refer to your test method for the expanded method derived uncertainty if needed. 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 contains 250g, 0.5g pins (nominal weight), to be used directly from the bottle with no preparation needed. This standard has an indefinite shelf life. Keep sealed and store in a cool dry place. This working standard was produced in accordance to ISO Guide-34-2009.

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.

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.

This standard was produced in accordance to Guide 34 at the time of certification. These same methods for producing reference materials have now been reviewed by an accreditation body. As of February 2015 our facility has become accredited under the ISO Guide 34:2009 for RMP issued by ANSI-ASQ National Accreditation Board, certificate AR1920.

Certified June 10, 2013



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