

Alpha Resources, Inc.

Certificate Of Analysis

AR 947
CARBON STEEL CHIP STANDARD
LOT # 1114B

% CARBON
MEAN = 0.389
One Sigma Standard Deviation = +/- 0.008
Expanded Uncertainty = +/- 0.016
(k=2, 95% confidence) n=40

% SULFUR
MEAN = 0.117
One Sigma Standard Deviation = +/- 0.002
Expanded Uncertainty = +/- 0.004
(k=2, 95% confidence) n=40

% NITROGEN
MEAN= 0.0090
One Sigma Standard Deviation = +/- 0.0004
Expanded Uncertainty = +/- 0.0008
(k=2, 95% confidence) n=50

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

Primary (NMI) Standards Employed:

NIST SRM	12h, 100b, 6g, 20g, 50c, 368, 163
NCS	NS22007, HC11111
JSS	602-10
BAM/BCS	226-1, 058-2, 284-2, 035-1, 306/1, 232/2

Notes:

The mean analytical values were derived by data sets showing traceability to the above mentioned NMI standards, and reported in mass fraction. The precision values represent the estimated 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 identified 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 150g, clean chips, to be used directly from the bottle with no preparation needed. This standard has an indefinite shelf life. Keep sealed and store 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 certificate cannot be reproduced except in full. For good laboratory practice it is recommended that all standards be verified prior to use. This standard was prepared in accordance to ISO Guide 34 and ISO Guide 31.

This is a Certified Reference Material (working standard), and is traceable to the above-mentioned standards. These test results are accredited under the Alpha Resources Inc. laboratory's ISO/IEC 17025 and ISO Guide 34 accreditation (RMP) issued by ANSI-ASQ/ANAB. Refer to certificate and scope of accreditation(s) AC-1200 and AR-1920.

Certified June 30, 2015


Technical Manager