

# Alpha Resources, Inc. Certificate Of Analysis

AR 956

CARBON STEEL CHIP STANDARD

LOT # 1144998

**% CARBON**  
MEAN = 0.450  
ONE SIGMA = 0.006  
TWO SIGMA = 0.012  
RANGE = 0.433 – 0.467

**% SULFUR**  
MEAN = 0.297  
ONE SIGMA = 0.009  
TWO SIGMA = 0.018  
RANGE = 0.282 – 0.312

**PPM NITROGEN**  
MEAN = 60  
ONE SIGMA = 4  
TWO SIGMA = 8  
RANGE = 52 - 67

Method of Analysis is ASTM E 1019 (Latest Revision)  
Carbon & Sulfur combustion IR detection  
Nitrogen inert gas fusion

Standards employed:

NIST	SRM 12h, 13g, 133b, 129c
German	BAM 035-1, 079-1
British	BCS 306
Japanese	JSS 150-8

Notes:

The mean analytical values were determined by a number of data sets provided by ASTM approved instruments.

The precision values represent the standard deviation, two times the standard deviation, and complete range of analyses.

The statistical analysis and overall coordination leading to certification was performed by K.E. Dyer at Alpha Resources.

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 secondary standard reference material and should be verified, prior to use, against a primary standard material provided by a governing agency such as N.I.S.T., when available.

Certified October, 1998

P.O. Box 199 3090 Johnson Road Stevensville, MI 49127 USA

[www.alpharesources.com](http://www.alpharesources.com)

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Fax (269) 465-3629

