

# Alpha Resources, Inc.

## Certificate Of Analysis

AR 302  
GRAY IRON STANDARD  
LOT # 92208

**% CARBON**  
MEAN = 3.29  
ONE SIGMA = 0.02  
TWO SIGMA = 0.04  
RANGE = 3.25 to 3.34

**% SULFUR**  
MEAN = 0.046  
ONE SIGMA = 0.002  
TWO SIGMA = 0.004  
RANGE = 0.042 to 0.049

Method of Analysis is ASTM E 1019-08, and ARI 033  
Primary Standards Employed:

|      |                  |
|------|------------------|
| NIST | 4L, 107c, 338    |
| IPT  | 66               |
| NCS  | HC11003, HC16011 |
| CKD  | 227              |

#### Notes:

The mean analytical values were derived by a number of data sets (n=40) by various instrumentation meeting ASTM E1019-03. 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 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 certificate cannot be reproduced except in full.

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.

Alpha Resources is accredited to ISO/IEC 17025. For more information concerning our certification and scope of accreditation contact Alpha Resources.

Certified May 22, 2009



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Page 1 Of 1