

## Reference Material

# Certificate of Analysis

**Product ID:** MBH-FEPIGL-RM-G

ISO  
17034:2016

ISO/IEC  
17025:2017

ISO  
9001:2015

Revision No.: 000  
Revision Date: 09/25/2023

**Product Description:** Pig Iron low level elements, RM

**Description and Intended Use:**

This Reference Material was processed under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This RM may come in the form of a solid disk, or chips. The intended use of this RM may include, but is not limited to, the calibration of instruments and the validation of analytical methods.

Assigned Values listed in wt. %							
Al	0.004	Cu	0.003	P	0.051	V	0.015
C	1.6	Mn	0.17	S	0.004		
Co	0.011	Mo	0.003	Si	0.12		
Cr	0.017	Ni	0.013	Ti	0.002		

**Homogeneity:**

Homogeneity samples are selected by a systematic sampling procedure. The number of samples may be determined by the equation below, where  $N_{\text{prod}}$  is the number of units produced and  $N_{\text{min}}$  is the number of samples used for homogeneity testing. These samples are arranged in a simple randomized design such that each sample is analyzed multiple times. Homogeneity may also have been determined within sample using an applied version of ASTM E826.

$$N_{MIN} = \max(10, \sqrt[3]{N_{PROD}})$$

**Instructions for Use:**

The test surface is on the opposite side of the labeled surface, which includes the material identification. This material is individually chill cast per piece. This manner of casting can cause the formation of inhomogeneous segregates in the upper, engraved portion of the disk. Therefore, the certification information above is not applicable to within 3mm of the engraved surface. Each packaged disk has been prepared by finishing the test surface using a lathe. The user must determine the correct surface preparation procedure for each analytical technique. The user is cautioned to use care when either resurfacing the disk or performing additional polishing, as these processes may contaminate the surface. The minimum sample size for chips should be individually evaluated based on the analytical technique used; this would typically be greater than 0.1 grams. The material should be stored in a cool, dry location when not in use.

Chips are not recommended for gas analysis.

**Period of Validity:**

The assigned value of this material is valid indefinitely provided the material is handled and stored in accordance with the instructions stated on this certificate. The assigned values are nullified if the material is damaged, contaminated, otherwise modified, or used in a manner for which it was not intended.

Chuck Gendron

**Chuck Goudreau, Certifying Officer**

September 25, 2023  
**Date Issued**



ISO 17034 Accredited: Reference Materials  
Producer, Certificate # 2848.02  
ISO/IEC 17025 Accredited: Chemical  
Testing, Certificate # 2848.01

**Conditions of Sale and Supply:** All CRMs & RMs sold are subject to applicable LGC Standard Terms and Conditions of Sale.