

Certificate of Analysis

MBH-RA10-20

High Purity Aluminum

Setting-up Sample

Indicative Values listed in µg/g

Ag (<0.5)	As (0.13)	Au (<0.5)	B (8.1)	Ba (0.58)	Be (<0.05)	Bi (<0.01)
Br (<0.1)	Ca (0.08)	Cd (<0.5)	Ce (2)	Cl (0.06)	Co (0.08)	Cr (0.28)
Cs (<0.01)	Cu (28)	Dy (0.075)	Er (0.03)	Eu (<0.01)	F (3.8)	Fe (38)
Ga (3.7)	Gd (0.08)	Ge (<0.2)	Hf (<0.05)	Hg (<0.1)	Ho (0.012)	I (<0.01)
In (<0.1)	Ir (<0.01)	K (<0.5)	La (1.3)	Li (<0.05)	Lu (<0.01)	Mg (8.1)
Mn (2.8)	Mo (<0.1)	Na (0.043)	Nb (<0.05)	Nd (0.38)	Ni (1.3)	Os (<0.05)
P (11.5)	Pb (0.19)	Pd (<0.5)	Pr (0.08)	Pt (<0.05)	Rb (<0.05)	Re (<0.05)
Rh (<0.2)	Ru (<0.05)	Sb (0.1)	Sc (0.048)	Se (<0.5)	Si (27)	Sm (0.037)
Sn (<0.5)	Sr (<0.005)	Ta (<5)	Tb (0.013)	Te (<0.05)	Th (0.078)	Ti (2.4)
Tl (0.06)	Tm (<0.01)	U (0.79)	V (6)	W (0.058)	Y (0.05)	Yb (<0.01)
Zn (3.8)	Zr (1)					

Sum of measured impurities: 152.13 µg/g

Description and Intended Use

This **Reference Material** is covered under the scope of accreditation to **ISO 17034** by LGC Standards - Manchester, NH. As an ISO 17034 reference material, appropriate use of this material will fulfill the reference material requirements for use in **ISO 17025** certified laboratories. Values listed on this certificate are not certified. This RM is in the form of a solid disk approximately Ø57x38mm. The intended use of this RM may include, but is not limited to, routine drift correction for spark-OES and XRF spectrometers.

Instructions for Use

1. The test surface is on the opposite side of the labeled surface, which includes the material identification. However, the user is cautioned not to measure disks less than 2 mm thick when using X-ray fluorescence spectrometry. 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.
2. The material should be stored in a cool, dry location when not in use.




Homogeneity Analysis

A homogeneity study was conducted on the defined lot of material using ICP and GDMS techniques. These results are reflected as reference values on this certificate. Homogeneity samples are selected by a systematic sampling procedure. The number of samples may be determined by equation 1, where N_{prod} is the number of units produced and N_{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 by the required technique.

$$1. N_{min} = \max(10, \sqrt[3]{N_{prod}})$$

Expiration

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



David Coler, General Manager
Analytical Reference Materials International



ISO 17034 Accredited
Reference Materials Produce Certificate # 2848.02
Chemical Testing Certificate # 2848.01