SUISSE TECHNOLOGY PARTNERS

Reference Material Certificate

123/03

Aluminium Base (Type of Standard)
Al pure (99.95-99.8% Al), Set 120

Certified Values

Element	Mass content [%]	Uncertainty [%]
Silicon (Si)	0.0691	± 0.0030
Iron (Fe)	0.0962	± 0.0030
Copper (Cu)	0.0283	± 0.0010
Manganese (Mn)	0.0325	± 0.0010
Magnesium (Mg)	0.0236	± 0.0010
Chromium (Cr)	0.0311	± 0.0012
Nickel (Ni)	0.0301	± 0.0010
Zinc (Zn)	0.0301	± 0.0010
Titanium (Ti)	0.0308	± 0.0010
Silver (Ag)	0.0053	± 0.0003
Beryllium (Be)	0.0008	± 0.0001
Bismuth (Bi)	0.0198	± 0.0015
Calcium (Ca)	<0.0001	
Cadmium (Cd)	0.0096	± 0.0003
Cobalt (Co)	0.0154	± 0.0012
Gallium (Ga)	0.0201	± 0.0015
Sodium (Na)	0.0006	± 0.0001
Lead (Pb)	0.0113	± 0.0012
Tin (Sn)	0.0167	± 0.0010
Vanadium (V)	0.0278	± 0.0010
Zirconium (Zr)	0.0243	± 0.0010

The uncertainty reported is the result of standard deviation of all results multiplied with a factor of two and represents approximately the 95% confidence interval.

Manufacturing
This standard is produced using six strand hot top vertical continuous casting out of single melt.

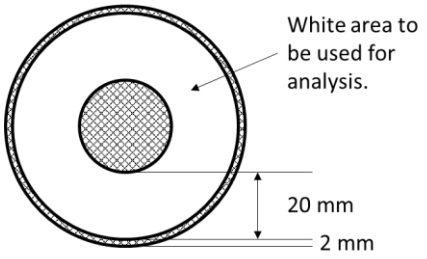
Homogeneity
Homogeneity testing is performed by means of spark emission spectroscopy. Tests involve making multiple measurements on individual samples taken at regular intervals along the entire length of each cast rod. Depending on the mass content of the element, the relative standard deviation of multiple measurements between discs or within one disc is typically found between 0.3% - 1% for alloying and other elements and 0.5% - 5% for trace elements.

Analysis
The values listed in this analysis certificate are the results of multiple analyses performed in our chemical analysis laboratory which is an accredited test facility for aluminium alloys according to the international standard ISO 17025. The analyses are based on established wet chemical procedures.

Description of Sample
This reference material is available in the form of discs.

Intended use and Stability
This certified reference material is primarily intended for use in spark optical emission spectroscopy. Other applications are X-ray fluorescence spectrometry (XRF) and classical wet chemical procedures. The minimum sample size for wet chemical analysis is 0.2g. The material will remain stable for the period given below (certification validity) if it is stored in a dry and clean environment at room temperature.

Instructions for Use
Calibration measurements should be made within a ring between 2mm and 22mm from the edge of the CRM face. For wet chemical analysis chips have to be prepared by turning or milling of the sample surface.



Traceability
Traceability of the certified mass contents to the SI (Système International d'Unités) is ensured by calibration using certified standard solutions or pure metals or substances of known stoichiometry.

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