



Certified Reference Material VAW 3013-3 / 3-03

Certification Report No. CC03013303

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Aluminium Alloy Al Si9Cu1Mg

Certificate of Chemical Analysis ¹⁾

Date of Issue : 1998-09-22

Element	Mass Fraction ²⁾ in %	Uncertainty ³⁾ in %
Si	8,61	± 0,24
Fe	0,597	± 0,018
Cu	0,706	± 0,021
Mn	0,647	± 0,017
Mg	0,884	± 0,025
Cr	0,0815	± 0,0029
Ni	0,102	± 0,003
Zn	0,394	± 0,012
Ti	0,106	± 0,003
B	< 0,0005	
Ca	0,0059	± 0,0003
Cd	< 0,0002	
Li	< 0,0002	
Na	0,00050	± 0,00019
P	0,0006	± 0,0003
Pb	0,356	± 0,011
Sb	< 0,002	
Sn	0,300	± 0,009
Sr	0,071	± 0,004
Al (calc.)	87,1	

Responsibility for the contents :

Dr. rer. nat. Claus H. Lührs

Notes (see overleaf)

Deutscher AkkreditierungsRat

DAR

GAZ-P-93-18-05-05-01

*) Accredited by GAZ Association for the accreditation and certification GmbH, Düsseldorf

Description of the sample

The base material for the reference samples is produced by vertical continuous casting. The reference material is available in the form of cylindrical discs, approximately 20 mm or 50 mm in height with a diameter of about 60 mm.

Notes

- 1) The certified values are valid for the ring zone between 3 mm and 20 mm from the outer edge of the sample preferentially measured by spark emission spectrometry. In the manufacture of millings for solution chemical methods of analysis, a core 20 mm in diameter and a shell 3 mm thick have to be removed in advance.
- 2) The identification limits are displayed after the symbol ' < ' if the measured values lie under the detection limits [Long, G.L., Winefordner, J.D., Anal.Chem. 55 (1983) 712 A; DIN 32 645 (1994)].
- 3) For a statistical confidence of 95%, the uncertainty is determined from the evaluation of the joint influences of local content variations in the sample material as well as the precision and trueness of the analytical methods used. The homogeneity is checked with regard to the subsequent application of the sample in spark optical emission spectrometry. The certificate is based on the following solution analytical methods: photometry, atomic absorption spectrometry (AAS), inductively coupled plasma optical emission spectrometry (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), and X-ray spectrometry (XRF). The calibration for major and minor constituents is carried out by taking a weighed portion of checked primary substances.
- 4) On request, the accuracy of the delivered and specially identified sample can be improved.

For further information, please contact:

Hydro Aluminium