



INSTITUTE OF NON-FERROUS METALS

Analytical Chemistry Department

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CERTIFICATE OF ANALYSIS

£ 89 bearing alloy

The average results of chemical analyses in wt %

Element	No.	1	2	3	4	5	6
Sb		5,66	6,39	7,41	8,14	8,86	8,03
Cu		3,20	4,15	3,49	2,81	2,12	4,51
Pb		0,072	0,13	0,29	0,52	1,11	0,20
Cd		0,19	0,091	0,041	0,021	0,011	0,19
Ni		0,010	0,031	0,090	0,16	0,33	0,014
Fe		0,18	0,086	0,058	0,028	0,013	0,17
As		0,019	0,037	0,065	0,12	0,18	0,029
Zn		0,099	0,059	0,042	0,020	----	0,096
Bi		0,012	0,026	0,052	0,099	0,20	0,014
Sn		the rest	the rest	the rest	the rest	the rest	the rest

Director of the Institute

Prof. Ph.D. Zbigniew Śmieszek

The confidence intervals in wt % at the probability level of 0,05

Element No.	1	2	3	4	5	6
Sb	0,097	0,060	0,052	0,080	0,15	0,065
Cu	0,069	0,058	0,039	0,053	0,046	0,041
Pb	0,0042	0,018	0,027	0,012	0,065	0,0076
Cd	0,0007	0,0052	0,0033	0,0028	0,0006	0,0040
Ni	0,0007	0,0018	0,0037	0,005	0,018	0,0014
Fe	0,0042	0,0037	0,0023	0,0023	0,0018	0,0010
As	0,0013	0,0020	0,0044	0,010	0,0039	0,0039
Zn	0,0046	0,0032	0,0037	0,0046	----	0,0031
Bi	0,00070	0,0013	0,0013	0,0042	0,010	0,0014

Analytical methods applied:

Sb - bromometry, atomic absorption;

Cu - iodine fluoride, electrolysis, atomic absorption;

Pb - atomic absorption, electrolysis;

Cd - atomic absorption, polarographic;

Ni - atomic absorption, colorimetric;

Fe - atomic absorption, colorimetric;

As - photometric with ammonium molybdenate, atomic absorption, titration;

Zn - atomic absorption, polarographic;

Bi - photometric with xylene orange, atomic absorption.

The chemical analyses have been carried out in two industrial laboratories and in the Institute of Non-Ferrous Metals.

The set consists of 6 reference materials in form of rods 10 mm in diameter and 100 mm long.