

U. S. DEPARTMENT OF COMMERCE

National Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE 94 A

ZINC-BASE ALLOY
(DIE-CASTING)

ANALYST*	ALUMINUM Weighed as Al ₂ O ₃	COPPER Electrolytic	MAGNESIUM Weighed as Mg ²⁺ P ₂ O ₇	MANGANESE	IRON	LEAD Weighed as PbO ₂	NICKEL	TIN Sn-iodine	CADMIUM
1.....	^a 3.91	^b 1.08 ₂	{ ^c 0.045 ^d .040 }	^e 0.015	^f 0.015	0.006	^g 0.005	^h 0.005	ⁱ 0.002 ₂
.....	3.95	1.08	.043	^j .014	^k .015	.006	.005	.004	.002
.....	{ ¹ 3.91 ^m 3.90 }	1.08	ⁿ .044	^o .015	^p .015	^q .007	^r .006	{ ^s .005 ^t .005 }	^u .002
4.....	3.90	1.08	^v .042	^w .015	^x .014	.008	^y .007	.004	
5.....	^m 3.88	^t 1.08 ₂	^u .043	^v .014	^w .014	.008	^x .005	.005	.002
6.....	¹ 3.90	1.09	ⁿ .040	^o .014	^p .014	.004	^q .005	.004	^r .003
7.....	^m 3.88	1.09	.042	^v .015	^w .016	^x .006	^y .005	^z .005	
Averages.....	3.90	1.08	0.042	0.015	0.015	0.006	0.005	0.005	0.002

* Mercury cathode-H₂S in 0.01 N acid solution-NH₄OH.
^b 200-g sample.
^c Mercury cathode method. Mg₂P₂O₇ corrected for Mn (ASTM method E-47).
^d Diammonium phosphate method. Mg₂P₂O₇ corrected for Mn (ASTM method E-47).
^e Periodate-photometric method.
^f Orthophenanthroline-photometric method.
^g Dimethylglyoxime-photometric method.
^h Distillation-cupferron-SnO₂.
ⁱ Weighed as CdSO₄.

^j Bismuthate method.
^k NH₄CNS-photometric method.
^l Mercury cathode-NH₄OH.
^m Mercury cathode-aluminum oxyquinolate.
ⁿ Mercury cathode-NH₄OH-(NH₄)₂HPO₄. Mg₂P₂O₇ corrected for Mn.
^o Polarographic method.
^p Tannic acid method. See, The Analyst 71, 217 (1946).
^q Persulfate-photometric method.
^r Iron reduced with zinc and titrated with KMnO₄ (ASTM method E-47).

* Weighed as nickel dimethylglyoxime.
^t 100-g sample.
^u Zinc and copper removed by mercury cathode. Mg precipitated with 8-hydroxyquinoline. Precipitate dissolved and Al precipitated with NH₄OH, and Mg determined as Mg₂P₂O₇.
^v Iron and copper precipitated from a 100-g sample with cupferron. Copper removed by electrolysis and iron reduced with H₂S and titrated with KMnO₄.
^w Sulfide method (ASTM method E-47).
^x Ceric sulfate method.

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The metal for the preparation of this standard was furnished by The New Jersey Zinc Co.

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E. U. CONDON, Director.