

U. S. DEPARTMENT OF COMMERCE

National Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE 85A

ALUMINUM ALLOY

(WROUGHT)

	Cu	Mg	Mn	Ni	Cr									
ANALYST *	Electrolytic	NaOH-Mg ₃ P ₂ O ₇	Persulfate-arsenite	Weighed as nickel dimethylglyoxime		IRON	SILICON	ZINC	TITANIUM Colorimetric	CALCIUM	GALLIUM	LEAD	VANADIUM	TIN
1	^a 2.48	1.56	^b 0.66	0.41	^c 0.233	^d 0.204	^e 0.113	^f 0.021	0.016	^g 0.01	^h 0.01	ⁱ 0.002	^j 0.001	^k <0.001
	^l 2.46													
	^m 2.48	1.58	.66	.41	ⁿ .23	^o .208	^p .11	^q .019	.014					
	^r 2.47	1.60	.67	.40	.24	^s .20	^t .12	^u .015	.02					
4	2.46	^v 1.59	^w .66	^x .42	^y .228	^z .21	^{aa} .12		.014					
5	2.48	1.61	^{ab} .67	.40	^{ac} .226	^{ad} .211	^{ae} { 0.113 0.111	^{af} .023	.017					
6	^{ag} 2.48	1.59	.67	.40	^{ah} .230	^{ai} .210	^{aj} .111							
7	2.48	1.57	.66	.41	.23		.108							
8	2.49	1.56	.65	.42	^{ak} .232	^{al} .213	.116	^{am} .018	.014					
Averages	2.48	1.58	0.66	0.41	0.231	0.208	0.114	0.019	0.016					

* Five-gram sample dissolved in sulfuric-nitric-hydrochloric acids. Solution fumed. First cathode deposit dissolved and replated.

^b Potentiometric titration.

^c Persulfate oxidation and potentiometric titration with ferrous ammonium sulfate solution standardized with potassium dichromate.

^d Copper removed by electrolysis and nickel with dimethylglyoxime. Iron precipitated in tartrate solution with (NH₄)₂S. Precipitate dissolved, iron precipitated with ammonium hydroxide, subsequently reduced with stannous chloride and titrated with potassium dichromate.

^e Solution in NaOH.

^f ZnS-ZnO.

^g Calcium and magnesium precipitated as phosphates. Precipitate dissolved and calcium sulfate precipitated in alcoholic solution. Precipitate dissolved, calcium precipitated as oxalate and weighed as CaO.

^h Cupferron method. See, NBS J. Research NBS 15, 585 (1935) RP853.

ⁱ Electrolytic.

^j Peroxide-colorimetric method.

^k Tin not detected in sulfides precipitated from a 30-g sample by the formic acid-hydrogen sulfide procedure.

^l Iodide-thiosulfate method.

^m Persulfate oxidation and titration with ferrous sulfate-permanganate.

ⁿ Iron reduced with H₂S and titrated with KMnO₄.

^o Tri-acid decomposition.

^p ZnHg (CNS)₄ method.

^q Same value obtained by the oxine-colorimetric method.

^r Periodate-colorimetric method.

^s Colorimetric.

^t Diphenylcarbazide-colorimetric method.

^u Solution in NaOH. Silico-molybdate colorimetric method.

^v Persulfate-arsenite-nitrite method.

^w Iron separated as sulfide in tartrate solution, reduced with zinc and titrated with permanganate.

^x Copper removed as the sulfide. Iron in the filtrate precipitated as ferrous sulfide. Precipitate dissolved in HCl, solution oxidized with KMnO₄, and iron determined by the SnCl₂-K₂Cr₂O₇ method.

^y Iron reduced with H₂S and titrated with Ce (SO₄)₃.

*LIST OF ANALYSTS

1. R. K. Bell, National Bureau of Standards, Washington 25, D. C.
2. H. V. Churchill and R. W. Bridges, Aluminum Company of America, New Kensington, Pa.
3. C. J. Clausen Jr., Reynolds Metals Co., Louisville, Ky.
4. Joseph J. Stumm, William F. Jobbins, Inc., Aurora, Ill.

5. J. J. Aldrich, The National Smelting Co., Cleveland, Ohio.
6. W. R. Kramer and V. A. Stenger, The Dow Chemical Co., Midland, Mich.
7. Lucius Pitkin, Inc., New York, N. Y.
8. Walter M. Kay, Bohn Aluminum & Brass Corporation, Detroit, Mich.

The aluminum alloy for the preparation of this standard was furnished by the Aluminum Company of America.

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E. U. CONDON, *Director*.