UNITED STATES DEPARTMENT OF COMMERCE
WASHINGTON, D. C.

National Bureau of Standards
Certificate of Analyses

Standard Sample 85B
Aluminum Alloy
(Wrought)

ANALYST	COPPER Electrolytic	MAGNESIUM NaOH-$Mg_2P_2O_7$	MANGANESE Photometric	IRON Photometric	CHROMIUM Photometric	SILICON	NICKEL Photometric	ZINC ZnS–ZnO	TITANIUM Photometric	LEAD Weighed as PbO_2	GALLIUM	VANADIUM Photometric
1	[a] 4.00	1.50	[b] 0.61	[c] 0.23	[d] 0.208	[e] 0.17	[f] 0.087	0.030	0.023	0.023	[g] 0.018	0.006
2	3.98	1.49	[h] .61	[i] .24	[j] .205	[k] .18	.091	[l] .027	.020	.022	[m] .019	.006
3	[n] 4.00	[o] 1.50	[h] .61	[i] .23, [c] .24	[p] .206	[q] .18	[f] .077, [r] .078	[s] .032, [t] .033	.022	[s] .020, .023		
4	[p] 3.97, 4.03	[u] 1.48	[h] .61	[i] .23	[j] .232	[e] .17	.086	.026	.022	.017		
5	3.98	1.49	[v] .61	[w] .24	[x] .21	[y] .17	[f] .079	[s] .026	.024	[s] .016		
6	3.99	[u] 1.49, 1.50	[h] .61	[w] .24	[j] .21	[k] .19	[f] .087	[l] .034, .036	.022	.027	[k] .02	
7	3.99	[u] 1.49	[h] .63	[z] .24	[j] .208	[q] .19	.086	[s] .030	.022	[s] .022		
Average	3.99	1.49	0.61	0.24	0.211	0.18	0.084	0.030	0.022	0.021	0.019	0.006

[a] Three-gram sample dissolved in sulfuric-nitric-hydrochloric acids. Solution evaporated to fumes of sulfuric acid, diluted and filtered. Silica treated with H_2SO_4–HF and the residual solution combined with the first filtrate. First cathode deposit dissolved and replated.

[b] Persulfate oxidation and potentiometric titration with sodium arsenite solution standardized with potassium permanganate.

[c] $SnCl_2$–$K_2Cr_2O_7$ method.

[d] Persulfate oxidation and potentiometric titration with ferrous ammonium sulfate solution standardized with potassium dichromate.

[e] Solution in NaOH, double $HClO_4$ dehydration with intervening filtration.

[f] Dimethylglyoxime-gravimetric method.

[g] Gallium extracted with ether, precipitated with cupferron, and ignited to the oxide. See NBS J. Research **15**, 585 (1935) RP853.

[h] Periodate method.

[i] Ortho-phenanthroline method.

[j] Diphenylcarbazide method.

[k] Gravimetric method.

[l] $Zn[Hg(CNS)_4]$ method.

[m] 8-hydroxyquinoline-photometric method.

[n] Iodide-thiosulfate method.

[o] Magnesium oxyquinolate precipitation, and titration by the KBr-$KBrO_3$–$Na_2S_2O_3$ method.

[p] Persulfate oxidation and titration with ferrous sulfate and potassium dichromate with diphenylamine sulfonate as indicator.

[q] Molybdisilicic acid-photometric method.

[r] Polarographic method.

[s] Dithizone-photometric method.

[t] Zinc oxyquinolate precipitation after H_2S separation of copper, and titration by the KBr–$KBrO_3$–$Na_2S_2O_3$ method.

[u] Ethylenediaminetetraacetic acid (Versene) titration method.

[v] Persulfate-arsenite method.

[w] Iron reduced with H_2S and titrated with $KMnO_4$.

[x] Persulfate oxidation and titration with ferrous sulfate-permanganate.

[y] Tri-acid decomposition.

[z] Bypyridine-photometric method.

List of Analysts

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

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