

U. S. DEPARTMENT OF COMMERCE

# National Bureau of Standards

## Certificate of Analyses

OF

STANDARD SAMPLE 86 C

### ALUMINUM ALLOY

(CASTING)

ANALYST*	COPPER Electrolytic	ZINC Gravimetric	IRON Volumetric	SILICON	MANGANESE	TITANIUM Colorimetric	LEAD Weighed as PbO <sub>2</sub>	NICKEL	CHROMIUM	MAGNESIUM
1	<sup>a</sup> 7.92	<sup>b</sup> 1.51	<sup>c</sup> 0.90	<sup>d</sup> 0.68	<sup>e</sup> 0.037	0.033	0.026	<sup>f</sup> 0.029	<sup>g</sup> 0.028	<sup>h</sup> 0.001
2	7.88	<sup>i</sup> 1.46	<sup>j</sup> .90	<sup>k</sup> .69	<sup>l</sup> .040	.035	.03	<sup>m</sup> .032	<sup>n</sup> .028	
3	7.91	<sup>o</sup> 1.49 <sup>p</sup> 1.46	<sup>q</sup> .92 <sup>r</sup> .91	<sup>s</sup> .68	<sup>t</sup> .042 <sup>u</sup> .041	.033	.032	<sup>v</sup> .035 <sup>w</sup> .032	<sup>x</sup> .025 <sup>y</sup> .022	
4	<sup>a</sup> 7.95	<sup>b</sup> 1.52	<sup>c</sup> .90	.67	<sup>d</sup> .05	.036		<sup>e</sup> .03	<sup>f</sup> .03	<sup>g</sup> .002
	7.91	<sup>h</sup> 1.50	<sup>i</sup> .89	<sup>j</sup> .66	<sup>k</sup> .038	.036	<sup>l</sup> .034 <sup>m</sup> .031	<sup>n</sup> .028	<sup>o</sup> .031 <sup>p</sup> .032	
	7.96	<sup>q</sup> 1.52	<sup>r</sup> .92	.69	<sup>s</sup> .04	.036	.04	<sup>t</sup> .02	<sup>u</sup> .03	<sup>v</sup> .005
7	<sup>w</sup> 7.93 <sup>x</sup> 7.92	<sup>y,z</sup> 1.52	<sup>a</sup> .90	<sup>b,c</sup> .69	<sup>d</sup> .041	.034	.025	<sup>e</sup> .033	<sup>f</sup> .032	<sup>g</sup> .002
Averages	<b>7.92</b>	<b>1.50</b>	<b>0.90</b>	<b>0.68</b>	<b>0.041</b>	<b>0.035</b>	<b>0.031</b>	<b>0.030</b>	<b>0.029</b>	<b>0.002</b>

<sup>a</sup> Two-gram sample dissolved in HNO<sub>3</sub> (sp gr 1.42). First cathode deposit dissolved and replated. Residual copper in electrolytes (approximately 0.01 Cu) determined colorimetrically.  
<sup>b</sup> ZnS-ZnO.  
<sup>c</sup> Weighed as Fe<sub>2</sub>O<sub>3</sub>.  
<sup>d</sup> Sodium hydroxide-sulfuric acid method. Double dehydration with intervening filtration.  
<sup>e</sup> KIO<sub>4</sub>-photometric method.  
<sup>f</sup> Dimethylglyoxime-photometric method.  
<sup>g</sup> Persulfate oxidation and potentiometric titration with ferrous ammonium sulfate solution standardized.

on potassium dichromate.  
<sup>h</sup> Titan yellow-photometric method.  
<sup>i</sup> ZnHg(CNS)<sub>2</sub> method.  
<sup>j</sup> Iron reduced with H<sub>2</sub>S and titrated with KMnO<sub>4</sub>.  
<sup>k</sup> Alkali decomposition.  
<sup>l</sup> Persulfate-arsenite method.  
<sup>m</sup> Diphenylcarbazide-photometric method.  
<sup>n</sup> K<sub>2</sub>Fe(CN)<sub>6</sub> method.  
<sup>o</sup> Orthophenanthroline-photometric method.  
<sup>p</sup> Sodium hydroxide-perchloric acid method.  
<sup>q</sup> Weighed as nickel dimethylglyoxime.  
<sup>r</sup> Persulfate oxidation and titration with ferrous sul-

fate-permanganate.  
<sup>s</sup> Iodide-thiosulfate method.  
<sup>t</sup> Weighed as Mg<sub>2</sub>P<sub>2</sub>O<sub>7</sub>.  
<sup>u</sup> Alkali decomposition. SnCl<sub>2</sub>-K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> method.  
<sup>v</sup> Dithizone-photometric method.  
<sup>w</sup> Bromate-photometric method.  
<sup>x</sup> Same value obtained by K<sub>2</sub>Fe(CN)<sub>6</sub> method.  
<sup>y</sup> Iron reduced with H<sub>2</sub>S and titrated with Ce(SO<sub>4</sub>)<sub>2</sub>.  
<sup>z</sup> Same value obtained with the SnCl<sub>2</sub>-Ce(SO<sub>4</sub>)<sub>2</sub> method.  
<sup>aa</sup> Same value obtained by acid decomposition.

#### \*LIST OF ANALYSTS

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

WASHINGTON 25, D. C., December 24, 1948.

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