

UNITED STATES DEPARTMENT OF COMMERCE  
WASHINGTON 25, D.C.

National Bureau of Standards  
Certificate of Analysis

Standard Sample 343

Stainless Steel

S.A.E. 431

ANALYST	C	Ni	Cr	V	N
	Direct combustion	Weighed as nickel dimethylglyoxime	FeSO <sub>4</sub> -KMnO <sub>4</sub> titration		Distillation-titration
1.....	0.149	2.14	<sup>a</sup> 15.76	<sup>b</sup> 0.036	<sup>e</sup> 0.075
2.....	<sup>d</sup> .150	<sup>e</sup> 2.15	<sup>f</sup> 15.76	<sup>b</sup> .037	.072
3.....	.146	{ 2.14 <sup>a</sup> 2.15}	15.82	<sup>b</sup> .034	.075
4.....	.150	2.14	15.72		{ <sup>i</sup> .074 .075}
5.....	.149	2.13	15.76		.072
6.....	<sup>j</sup> .154	2.13	<sup>k</sup> 15.74	<sup>b</sup> .039	.074
Averages.....	0.150	2.14	15.76	0.036	0.074

<sup>a</sup> Persulfate oxidation, potentiometric titration with ferrous ammonium sulfate.

<sup>b</sup> Nitric acid oxidation, potentiometric titration with ferrous ammonium sulfate.

<sup>c</sup> Sulfuric acid digestion for 4 hr of a 0.5 g sample. See J. Research NBS 43, 201 (1949) RP2021.

<sup>d</sup> Volumetric method.

<sup>e</sup> Dimethylglyoxime precipitate titrated with cyanide.

<sup>f</sup> Perchloric acid oxidation.

<sup>g</sup> Dimethylglyoxime photometric method.

<sup>h</sup> Vanadium oxidized with KBrO<sub>3</sub> and titrated potentiometrically with ferrous ammonium sulfate.

<sup>i</sup> Distillation-photometric method.

<sup>j</sup> Conductometric method.

<sup>k</sup> Titrating solution standardized by the use of a standard steel.

List of Analysts

1. Ferrous Laboratory, National Bureau of Standards, J. I. Shultz, in charge. Analysis by E. June Maienthal.
2. G. C. Delplace, Jones and Laughlin Steel Corp., Stainless and Strip Division, Detroit, Mich.
3. S. Vigo and Edna F. Jacobson, U.S. Army Ordnance Corps, Watertown Arsenal Laboratories, Watertown, Mass.

4. E. W. Polley, The Youngstown Sheet and Tube Co., Youngstown, Ohio.
5. R. W. Bley, Inland Steel Co., Indiana Harbor Works, East Chicago, Ind.
6. R. H. Van Tyne, Firth Sterling, Inc., Pittsburgh, Pa.

The steel for the preparation of this standard was furnished by the Jones and Laughlin Steel Corporation, Detroit, Mich.

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A. V. ASTIN, *Director*