

DEPARTMENT OF COMMERCE

# Bureau of Standards

## Certificate of Analyses

OF

STANDARD SAMPLE No. 65

### ACID ELECTRIC STEEL

ANALYST*	C	Mn		P		S		Si	COPPER H <sub>2</sub> S-CuS-CuO	NICKEL Weighed as nickel dimethylglyoxime	CHROMIUM FeSO <sub>4</sub> -KMnO <sub>4</sub> titration	VANADIUM	MOLYBDENUM	ARSENIC
	CARBON Direct combustion	MANGANESE 1. Bisulphate (FeSO <sub>4</sub> -KMnO <sub>4</sub> ) 2. Other methods	PHOSPHORUS 1. Alkali-Molybdate <sup>a</sup> 2. Gravimetric (Weighed as MgP <sub>2</sub> O <sub>7</sub> after removal of arsenic)	1. SULPHUR Gravimetric (Direct oxidation and final precipitation in reduced solution)	2. SULPHUR Evolution with HCl (1:1) ZnS-Iodine (theoretical sulphur titre <sup>b</sup> )	SILICON Sulphuric acid dehydration								
1.....	0. 238	0. 742	.....	0. 021	0. 021	0. 038	0. 039	{ 0. 413 c. 408 }	0. 065	0. 048	0. 052	0. 002	0. 002	.....
2.....	. 247	. 748	.....	. 021	. 021	. 039	. 039	. 417	. 058	. 040	. 049	. 002	. 006	0. 013
3.....	. 245	. 742	f. 0. 743	. 023	.....	. 042	. 042	c. 411	. 06	.....	.....	.....	.....	.....
4.....	. 233	. 745	f. 747	. 023	.....	. 040	. 039	{ . 413 c. 405 }	.....	.....	.....	.....	.....	.....
5.....	. 238	.....	f. 752	. 024	.....	. 039	. 042	r. 410	. 050	.....	. 038	.....	.....	. 009
6.....	. 236	. 752	f. 749	. 022	. 023	. 040	. 042	{ . 411 c. 416 }	. 059	.....	. 055	. 005	.....	.....
7.....	. 235	. 75	f. 747	.....	. 023	. 041	. 040	{ . 411 c. 409 }	. 059	.....	.....	.....	.....	.....
8.....	. 233	. 74	.....	. 023	.....	. 037	.....	r. 413	. 07	.....	.....	.....	.....	.....
9.....	. 238	.....	.....	.....	.....	.....	. 040	r. 419	.....	.....	.....	.....	.....	.....
Averages.....	. 238	. 746	. 748	. 022	. 022	. 040	. 040	. 412	. 060	. 044	. 049	. 003	. 004	. 011
General Averages.....	. 238	. 746	.....	. 022	.....	. 040	. 040	. 412	. 060	. 044	. 049	. 003	. 004	. 011

\* Precipitated at 40° C., washed with 1 per cent KNO<sub>3</sub> solution and titrated with alkali standardized by the use of B. S. benzoic acid and the 23 : 1 ratio.  
<sup>a</sup> Value obtained by standardization of titrating solution against sodium oxalate through KMnO<sub>4</sub> and Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>.  
<sup>c</sup> Double dehydration with hydrochloric acid.

<sup>d</sup> KCNS, colorimetric.  
<sup>e</sup> Electrometric titration.  
<sup>f</sup> Ferrous sulphate, arsenite.  
<sup>g</sup> Drown's method.

### \* INDEX TO ANALYSTS

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|---|---|
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This standard is not recommended for colorimetric carbon determinations, because of uncertainty as to the condition of the iron.

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 Director.

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