

# Bureau of Standards

## Certificate of Analysis

OF

STANDARD SAMPLE No. 19a

### ACID OPEN-HEARTH STEEL, 0.2% CARBON

ANALYST.	CARBON.			SILICON.		PHOSPHORUS.				SULPHUR.			MANGANESE.								
	DIRECT COMBUSTION.	SOLUTION AND COMBUSTION.	COLORIMETRY.	DROWN METHOD.	OTHER METHODS.	ALKALI-MOLYBDATE.	MOLYBDATE REDUCTION.	WEIGHING PHOSPHO-MOLYBDATE.	AS Mg <sub>2</sub> P <sub>2</sub> O <sub>7</sub> FROM PHOSPHO-MOLYBDATE.	OXIDATION.	EVOLUTION (CdS-Iodine).	OTHER METHODS.	FORD (Weighing as Mn <sub>2</sub> P <sub>2</sub> O <sub>7</sub> ).	FORD-WILLIAMS.	VOLHARD.	BISMUTHATE.	COLOR (Persulphate).	COPPER.	CHROMIUM.	MOLYBDENUM.	VANADIUM.
1	202				.038	.082				.072	.069 <sup>a</sup>					.843 <sup>b</sup>			.08		
2	205				.038		.083			.074	.068 <sup>a</sup>					.848		.35	.08	.004	.006 <sup>d</sup>
	223	222			.037		.084		.086	.072	.075		856			.850					
4	202	202		.035	.034		.084			.071	.06 <sup>e</sup>					.861 <sup>c</sup>					
5	195		.20	.028			.083	.084		.073	.069					.850					
6	205					.085				.070	.069		870								
7	210	215		.026			.083			.066	.065		.87								
8		215		.030	.030		.085			.067	.065		.87				.85				
9	202			.030			.082			.064							.86				
10	200			.025		.085	.084			.070	.069			.84			.84				
AVERAGE	.205	214	.20	.029	.035	.084	.084	.084	.086	.071	.068	.060	.87	.86	.84	.85	.85	.35	.08	.004	.006
GENERAL AVERAGE	.207			.032		.084				.069			.85					.35	.08	.004	.006

<sup>a</sup> Evolution—H<sub>2</sub>O<sub>2</sub>—BaSO<sub>4</sub>.  
<sup>b</sup> With arsenite titration.

<sup>c</sup> After chromium separation.  
<sup>d</sup> J. C. Hostetter, Bureau of Standards.

<sup>e</sup> Evolution—PbS—BaSO<sub>4</sub>, omitted from averages.

### INDEX TO ANALYSTS

1. John R. Cain, Bureau of Standards.
2. L. F. Witmer, Bureau of Standards.
3. Porter W. Shimer, Easton, Pa.
4. Booth, Garrett & Blair, Philadelphia, Pa.
5. Jones & Laughlin Steel Co., South Side Department Laboratory, Pittsburgh, Pa.

6. George P. Vanier, Pennsylvania Steel Co., Steelton, Pa.
7. W. D. Brown, Carnegie Steel Co., Duquesne Works.
8. C. H. Rich, Carnegie Steel Co., Clairton Works.
9. J. L. Harvey, Carnegie Steel Co., Homestead Works.
10. Carnegie Steel Co., Edgar Thomson Works.

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

S. W. STRATTON,  
Director.

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