## Bureau of Standards

## Certificate of Analyses

OF

STANDARD SAMPLE No. 10b

## BESSEMER STEEL, 0.4% CARBON

ANALYST.	CARBON.				SILICON.		PHOSPHORUS.				SULPHUR.		MANGANESE.							
	DIRECT COMBUS- TION (ONCE).	DIRECT COMBUS- TION (REBURNING).	SOLUTION AND COM- BUSTION.	COLORIMETRY.	DROWN METHOD.	OTHER METHODS.	ALKALI- MOLYBDATE.	MOLYBDATE REDUCTION.	WEIGHING PHOS- PHO-MOLYBDATE.	AS Mg.P.O, FROM PHOSPHO. MOLYBDATE.	OXIDATION.	EVOLUTION (CdS-Iodine).	FORD (Weighing as Mn <sub>2</sub> P <sub>2</sub> O <sub>7</sub> ).	FORD-WILLIAMS,	BISMUTHATE.	PERSULPHATE (Arsenite titration).	COPPER.	CHROMIUM.	MOLYBDENUM.	VANADIUM.
1	. 360ª	. 375				. 042	. 123				. 050	. 0475			.676					
2	. 361	. 379		ļ		. 052	. 119				. 052	. 048ե			. 666	<b></b> -	.01	<.005	$\mathbf{None}$	Tr.
3	. 348	. 374	. 373			. 052		. 120		. 121	. 048	. 046		. 656	. 657			<b>-</b>		
4	. 356	. 376	. 353		. 048	. 047		. 124			. 050	. 050			.673					
5	. 370	. 385	. 380	.39	. 047			. 120			. 052	. 050	. 663		.662	<b>-</b>				
· · · · · · · · · · · · · · · · · · ·	. 371						. 126				. 051	.048		. 673	. 671					
<sup>7</sup> 7	. 366	. 390	. 390	<b>-</b>	. 042		. 118		. 117		. 047	. 047			. 660	.66				
8		<u>-</u>	. 370		. 044				. 114			. 049			. 650			<b></b>		
9	. 372	. 380	. 378		. 045				.116			. 049		. 660	. 670 °	. 67				<b>-</b>
A VERAGE GENERAL	. 363	. 380	. 374	. 39	. 045	. 048	.122	. 121	. 116	. 121	. 050	. 048	. 663	. 663	. 665	. 665	.01	<.005	None	Tr.
AVERAGE	. 373				. 047		. 120			. 049		. 664								

 $^{\circ}.372$  by fusing the oxides at 1550–1600° for 15 to 20 minutes after cessation of combustion.

b Evolution-H2O2-BaSO4.

c Ford-Williams-bismuthate.

Note.—Since, with this steel, grinding and reburning of the solid products of the first combustion, once or oftener, generally yielded further carbon, the analysts were asked to report two values, as shown in the first two columns. The "Solution and Combustion" values (column 3), supported by other evidence, indicate that the figures of column 2 are more nearly correct than those of column 1, in spite of the hesitancy of analyst 4 to regard the carbon from reburnings as derived from the steel.

## 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.
- H. E. Slocum, 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. J. L. Harvey, Carnegie Steel Co., Homestead Works.
- 9. I. A. Nicholas, Carnegie Steel Co., Clairton 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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