

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 20a

ACID OPEN-HEARTH STEEL, 0.4% CARBON

ANALYST.	CARBON.		SILICON.		PHOSPHORUS.				SULPHUR.		MANGANESE.			COPPER.	CHROMIUM.	VANADIUM.	NICKEL.
	DIRECT COMBUSTION.	SOLUTION AND COMBUSTION.	DROWN METHOD.	OTHER METHODS.	ALKALI-MOLYBDATE.	MOLYBDATE REDUCTION.	WEIGHING PHOSPHO-MOLYBDATE.	AS $Mg_2P_2O_7$ FROM PHOSPHO-MOLYBDATE.	DIRECT OXIDATION.	MEINKE'S METHOD.	FORD-WILLIAMS.	BISMUTHATE.	PERSULPHATE (Arsenite titration).				
1.....	.395			.144	.043				.026	.027		.658		.069	.018	<.005	.018
2.....	.395			.138	.046	.044			.029	.030		.661		.068	.016	.011	.017
3.....	.380	.383		.147	.046	.045		.045	.026	.024		.651		.065			
4.....	.386			.142		.046			.021			.663					
5.....	.404		.154	.134	.047				.029	.029		.663	.65	.065			
6.....	.403			.138	.050				.026	.026	.668	.660		.067			
7.....	.331		.136	.128	.047		.047		.028	.023		.653	{.665 ^a .67}	.066			
8.....	.336			.136	.046				.032	.029		.660		.070			
9.....	.300			.139			.048		.029	.025	.67	.655		.068			
AVERAGE.....	.393	.383	.145	.138	.046	.045	.048	.045	.027	.027	.669	.658	.662				
GENERAL AVERAGE.....	.392		.140		.046				.027		.661			.067	.017		.018

^a Bismuthate with arsenite titration.

INDEX TO ANALYSTS

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

6. George P. Vanier, Pennsylvania Steel Co., Steelton, Pa.
7. H. L. Hamner, 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.

Washington, D. C.