

DEPARTMENT OF COMMERCE

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 4b

IRON B

ANALYST.	CARBON.				SILICON.		TITANIUM.		PHOSPHORUS.				SULPHUR.		MANGANESE.		COPPER.	CHROMIUM.	VANADIUM.
	TOTAL.				DEHYDRATION BY SULPHURIC ACID	DEHYDRATION BY HYDRO-CHLORIC ACID,	COLOR METHOD.	VOLUMETRIC (SHIMER).	ALKALI MOLYBDATE.	MOLYBDATE REDUCTION.	WEIGHING PHOS- PHO-MOLYBDATE.	AS Mg <sub>2</sub> P <sub>2</sub> O <sub>7</sub> FROM PHOSPHO- MOLYBDATE.	DIRECT OXIDA- TION.	MEINEKE'S METHOD.	BISMUTHATE.	PERSULPHATE (Arsenite titration).			
	DIRECT COM- BUSTION.	SOLUTION AND COM- BUSTION.	GRAPHITE.	COMBINED.															
1.....	3.06		2.39	0.67		1.37	0.049		0.105				0.037	0.039	1.01		0.007		
2.....	3.05		2.51	.54		1.35			.105					.037	1.03			<.01	<.005
3.....	3.04	3.04	2.51	.53	1.31	1.31	.062	0.059	.106			0.099	0.038	.035	1.01		.011		
	3.02		2.41	.61		1.35	.053			0.103	0.104		.039		1.03				
	3.00		2.47	.53		1.33	.047		.101					.032	1.01		.009		
6.....	3.01				1.25		.052		.104				.037		1.00	0.98	.009		
7.....	2.98	2.94	2.41	.57	1.38				.104				.037	.034	1.00				
8.....	3.03				1.35		.065		.101				.037		1.00		.01		
9.....	3.02		2.50	.52		1.38	.050		.103		.103		.040		1.00		.006		
10.....	3.02		2.44	.58		1.36	.053		.102				.038		1.01		.008		
Av.....	3.02	2.99			1.32	1.35	.054	.059	.103	.103	.104	.099	.038	.035	1.01	.98			
GEN. AV.....	3.02		2.46	.57	1.34		.054			.103			.037		1.01		.009	<.01	<.005

INDEX TO ANALYSTS

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|--|--|
| 1. L. F. Witmer, Bureau of Standards.                              | 7. Saunders & Franklin, Providence, R. I.  |
| 2. Routine Laboratory Bureau of Standards, F. H. Tucker in charge. | 8. H. E. Slocum, Jones & Laughlin Steel Co., South Side Depart- ment Laboratory, Pittsburgh, Pa. |
| 3. Porter W. Shimer & Son, Easton, Pa.                             | 9. W. D. Brown, Carnegie Steel Co., Duquesne Works.  |
| 4. Booth, Garrett & Blair, Philadelphia, Pa.                       | 10. I. A. Nicholas, Carnegie Steel Co., Clairton Works.  |
| 5. F. G. Kelly, Tenn. Coal, Iron & Railroad Co.                    |  |
| 6. A. D. Shankland, Bethlehem Steel Co., S. Bethlehem, Pa.         |  |

N. B.—As cast, this iron contained 4.16 per cent total carbon and 3.47 per cent graphite. Most of the loose graphite was purposely blown out in preparing the sample, but its loss has affected in no way the nature of the compounds existing in the iron, which are those proper to the iron as cast.

S. W. STRATTON,  
Director.

Washington, D. C.

Sept. 1, 1918.