

V-4/SS-5c

DEPARTMENT OF COMMERCE

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 5c

IRON C

ANALYST.	CARBON.				SILICON.			PHOSPHORUS.				SULPHUR.		MANGANESE.		COPPER.	CHROMIUM.	MOLYBDENUM.	VANADIUM.
	TOTAL.		GRAPHITE.	COMBINED.	DEHYDRATION BY SULPHURIC ACID.	DEHYDRATION BY HYDROCHLORIC ACID.	TITANIUM. (Color method.)	ALKALI-MOLYBDATE.	MOLYBDATE REDUCTION.	WEIGHING PHOSPHO-MOLYBDATE.	AS Mg ₂ P ₂ O ₇ FROM PHOSPHO-MOLYBDATE.	DIRECT OXIDATION.	MEINEKE'S METHOD.	BISMUTHATE.	PERSULPHATE (Arsenite titration).				
	DIRECT COMBUSTION.	SOLUTION AND COMBUSTION.																	
1	2.61		2.02	0.59	1.85	1.87	0.084	0.223				0.049	0.052	0.822		0.082		< .005	
2	2.67		2.10	.57		1.79		.225				.050	.053	.823		.093	< 0.02		< .005
3	2.65	2.64	2.18	.47	1.80	1.81	.062	.231			0.227	.054	.049	.774		.107			
4	2.69		2.09	.60		1.86	.084		0.226	0.227		.053		.824		.078			
5	2.70		2.12	.58		1.82	.070	.223				.048		.817		.098			
6	2.62				1.81	1.86	.061	.229				.051		.805	0.785	.105			
7	2.63	2.68	2.08	.55		1.91		.222				.048	.048	.802					
8	2.70		2.08	.62	1.85		.09	.229				.050			.80				
9	2.61		2.18	.43		1.89	.07	.232		.230		.052	.042	.80		.090			
10	2.61		2.10	.51		1.87	.064	.227				.048		.81		.092			
Av	2.65	2.66			1.83	1.85		.227	.226	.229	.227	.051	.049	.809	.793				
GEN. AV.	2.65		2.11	.55	1.85		.073		.227			.050		.806		.093	< .02	< .005	< .005

¹ Same by Shimer's volumetric method.

INDEX TO ANALYSTS

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

N. B.—As cast, this iron contained 3.85 per cent total carbon. 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.

11-6466

Sept. 1, 1918.