DEPARTMENT OF COMMERCE

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 8d

BESSEMER STEEL, 0.1% CARBON

ANALYST*	C	Mn		P		S		Si						
	CARBON Direct combustion	MANGANESE 1. Bismuthate ($FeSO_4$-$KMnO_4$)	2. Other methods	PHOSPHORUS 1. Alkali-Molybdate[a]	2. Gravimetric (Weighed as $Mg_2P_2O_7$ after removal of arsenic)	1. SULPHUR Gravimetric (Direct oxidation and final precipitation in reduced solution)	2. SULPHUR Evolution with HCl (1:1) ZnS-Iodine (theoretical sulphur titre[b])	SILICON Sulphuric acid dehydration	COPPER H_2S-CuS-CuO	NICKEL Weighed as nickel dimethylglyoxime	CHROMIUM $FeSO_4$-$KMnO_4$ titration	VANADIUM	MOLYBDENUM	ARSENIC
1	0.078	0.486		0.101	0.100	0.082	0.083	0.019	0.011	0.004	0.006[c]	0.003[c]	0.007[d]	0.007
2	.08	.487	0.480	.098		.082	.082	.017	.012					
3	.075		.482[e]	.097	.096	.082	.081	.015						
4	.075	.485		.099	.098	.085	.086	.018	.014		.010		.002	
5	.084		.483[e]	.096			.085	.020	.017[f]	.005	.006[g]	.003	.002	
6	.080	.482	.480[h]	.098		.082	.083	.023	.013					
7	.080	.474		.101	.099	.083	.084	.019	.011					
8	.073		.478[e]	.101			.083	.017	.012					
9	.076	.48	.49[e]	.097	.096	.081	.082	.016		<.002	<.01	<.01	.002	
10	.078	.481	.478	.101	.102	.087	.088	.017		.005	.005		.003	
Averages	.078	.482	.482	.099	.099	.083	.084	.018	.013	.004	.007	.003	.003	.007
General Averages	0.078	0.482		.099		.083		.018	.013	.004	.007	.003	.003	.007

[a] Precipitated at 40°C., washed with 1 per cent solution of KNO_3 and titrated with alkali standardized by means of B. S. acid potassium phthalate and the 23 to 1 ratio.

[b] Value obtained by standardization of titrating solution against sodium oxalate through $KMnO_4$ and $Na_2S_2O_3$.

[c] Electrometric titration.

[d] Colorimetric by developing color with KSCN and $SnCl_2$.

[e] Persulphate-arsenite.

[f] Finished electrolytically.

[g] Perchloric acid oxidation.

[h] PbO_2-arsenite.

*LIST OF ANALYSTS

1. Ferrous Laboratory, Bureau of Standards, H. A. Bright in charge; analysis by C. P. Larrabee and R. M. Fowler.
2. H. E. Slocum, Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
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4. E. C. Raysor, Bethlehem Steel Co., Coatesville, Pa.
5. John L. Harvey, Carnegie Steel Co., Munhall, Pa.
6. James A. Kelly, The Phoenix Iron Co., Phoenixville, Pa.
7. Dr. M. E. McDonnell, The Pennsylvania Railroad System, Altoona, Pa.
8. Karl Pitschner, The American Chain Co. Research Department, Bridgeport, Conn.
9. W. D. Brown, The Carnegie Steel Co., Duquesne, Pa.
10. Gordon Gingrich, Lebanon Steel Foundry, Lebanon, Pa.

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

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Director.