

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 ₂ P ₂ O 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 ₂ S-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 KNO₃ 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 KMnO₄ and Na₂S₂O₄.

^c Electrometric titration.

^d Colorimetric by developing color with KSCN and SnCl₂.

^e Persulphate-arsenite.

^f Finished electrolytically.

^g Perchloric acid oxidation.

^h PbO₂-arsenite.

* LIST OF ANALYSTS

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

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Director.