

# Certificate of Analysis

## Standard Reference Material 3b White Iron

ANALYST	C	Mn	P	S	Si	Cu	Ni	Cr	V	Mo
	Direct Combustion	Persulfate- arsenite	Photometric	Combustion- Titration	Perchloric Acid dehydration	Photometric	Photometric			Photometric
1	2.42	0.351 <sup>a</sup>	0.086 <sup>b</sup>	0.090 <sup>c</sup>	1.04 <sup>d</sup>	0.051 <sup>e</sup>	0.012	0.052 <sup>f</sup>	0.005 <sup>g</sup> 0.006 <sup>h</sup>	0.002
2	2.43	.352	.090	.089	1.04	.047	----	.052 <sup>i</sup>	----	----
3	2.43 <sup>k</sup>	.360	.083 <sup>l</sup>	.086 <sup>m</sup> .085 <sup>n</sup>	1.06	.049 <sup>o</sup>	.009 <sup>p</sup>	.056 <sup>f</sup>	.005 <sup>g</sup>	.001
4	2.44 <sup>q</sup>	.35	----	.091	1.03	----	----	.050 <sup>r</sup>	----	----
5	2.44 <sup>k</sup>	.345	----	.084	1.05	----	.007 <sup>p</sup>	.048 <sup>s</sup>	----	<.01
6	2.49	.36	.087 <sup>l</sup>	.088	1.02 <sup>d</sup>	.051 <sup>t</sup>	.012	.054 <sup>j</sup>	.008 <sup>u</sup>	.002
Average	2.44	0.353	0.086	0.088	1.04	0.050	0.010	0.052	0.006	0.002

<sup>a</sup> Periodate photometric method.

<sup>b</sup> Molybdenum-blue photometric method. See J. Res. NBS 26, 405 (1941) RP 1386.

<sup>c</sup> 1-g sample burned in oxygen at 1,450 °C and sulfur dioxide absorbed in starch-iodide solution. Iodine liberated from iodide by titration, during the combustion, with standard KIO<sub>3</sub> solution.

<sup>d</sup> Double dehydration

<sup>e</sup> Atomic absorption method.

<sup>f</sup> Chromium separated from the bulk of the iron in a 10-g sample by hydrolytic precipitation with NaHCO<sub>3</sub>, oxidized with persulfate and titrated potentiometrically with ferrous ammonium sulfate.

<sup>g</sup> Vanadium separated as in (f), oxidized with HNO<sub>3</sub> and titrated potentiometrically with ferrous ammonium sulfate.

<sup>h</sup> Neutron activation analysis.

<sup>i</sup> Diethyldithiocarbamate photometric method.

<sup>j</sup> Diphenylcarbazine photometric method.

<sup>k</sup> Volumetric method.

<sup>l</sup> Alkali-molybdate method.

<sup>m</sup> Sulfur gases absorbed in NaOH-H<sub>2</sub>O<sub>2</sub> solution and excess NaOH titrated with H<sub>2</sub>SO<sub>4</sub>.

<sup>n</sup> Gravimetric method.

<sup>o</sup> Neocuproine photometric.

<sup>p</sup> Weighed as nickel dimethylglyoxime.

<sup>q</sup> Gasometric method.

<sup>r</sup> Persulfate oxidation, titration with FeSO<sub>4</sub>-Ce(SO<sub>4</sub>)<sub>2</sub>.

<sup>s</sup> FeSO<sub>4</sub>-KMnO<sub>4</sub> titration.

<sup>t</sup> Copper-ammonia Complex photometric method.

<sup>u</sup> H<sub>2</sub>O<sub>2</sub> photometric method.

### List of Analysts

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