

# National Bureau of Standards Certificate of Analysis Standard Reference Material 122f Cast Iron Car Wheel

This is the remaining portion of the material previously used for SRM 122e. Based on extensive homogeneity testing of the entire lot of material, and on selected comparative analyses of the two portions, the certification for 122f is identical to 122e, except for carbon.

ANALYSTS	C		Mn	P	S	Si	Cu	Ni	Cr	V	Mo	Ti	N	As
	TOTAL	GRAPHITIC	PERSULFATE- ARSENITE		COMBUSTION- IODATE	PERCHLORIC ACID	PHOTOMETRIC				PHOTOMETRIC	PHOTOMETRIC	DISTILLATION- TITRATION	
1---	3.47	-	0.527	<sup>a</sup> 0.347	0.073	<sup>b</sup> 0.511	<sup>c</sup> 0.034	<sup>d</sup> 0.078	<sup>e</sup> 0.038	<sup>f</sup> 0.032	0.001	<sup>g</sup> 0.026	0.009	<sup>h</sup> 0.018
2---	-	-	.528	<sup>i</sup> .351	.074	.510	<sup>j</sup> .032	<sup>k</sup> .082	-	-	-	-	-	-
3---	3.45	2.77	-	-	-	-	-	-	-	-	-	-	-	-
4---	3.45	-	-	-	-	-	-	-	-	-	-	-	-	-
5---	3.51	2.78	-	-	-	-	-	-	-	-	-	-	-	-
<b>Average</b>	<b>3.47</b>	<b>2.78</b>	<b>0.528</b>	<b>0.349</b>	<b>0.074</b>	<b>0.510</b>	<b>0.033</b>	<b>0.080</b>	-	-	-	-	-	-

<sup>a</sup> Molybdenum-blue photometric method.

<sup>b</sup> Double dehydration.

<sup>c</sup> Diethylthiocarbamate photometric method.

<sup>d</sup> Dimethylglyoxime photometric method.

<sup>e</sup> Chromium separated from the bulk of the iron in a 10-g sample by hydrolytic precipitation with NaHCO<sub>3</sub>. Persulfate oxidation and potentiometric titration with ferrous ammonium sulfate solution.

<sup>f</sup> Vanadium separated from the bulk of the iron by mercury cathode, oxidized with KMnO<sub>4</sub> and titrated potentiometrically with ferrous ammonium sulfate solution.

<sup>g</sup> Diantipyrylmethane photometric method.

<sup>h</sup> Activation analysis.

<sup>i</sup> Alkalimetric method.

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

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

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of O. Menis and J. I. Shultz.

The technical and support aspects involved in the preparation, certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by R. E. Michaelis.

The iron for the preparation of this standard was furnished by the American Cast Iron Pipe Company, Birmingham, Alabama.

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J. Paul Cali, Chief  
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