

National Bureau of Standards

Certificate of Analysis

Standard Reference Material 19h

Basic Electric Steel, 0.2% Carbon

(In Cooperation with the American Society for Testing and Materials)

This Standard Reference Material (SRM) is in the form of chips sized between 0.50 and 1.18 mm sieve openings (35 and 16 mesh). SRM 19h is intended for use primarily in chemical methods of analysis.

<u>Element</u>	<u>Certified Value,¹ % by wt.</u>	<u>Estimated Uncertainty²</u>
Carbon	0.215	0.003
Manganese	.393	.005
Phosphorus	.016	.003
Sulfur	.022	.003
Silicon	.211	.003
Copper	.466	.004
Nickel	.248	.007
Chromium	.173	.005
Vanadium	.003	.001
Molybdenum	.038	.002
Aluminum	.002	.001

1 The certified value listed for a constituent is the present best estimate of the "true" value based on the results of the cooperative program for certification.

2 The estimated uncertainty listed for a constituent is based on judgment and represents an evaluation of the combined effects of method imprecision, possible systematic errors among methods, and material variability. (No attempt was made to derive exact statistical measures of imprecision because several methods were involved in the determination of most constituents.)

The overall coordination of the technical measurements leading to certification was performed under the direction of J.I. Shultz, Research Associate, ASTM/NBS Research Associate Program.

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 W.P. Reed.

September 10, 1987
Gaithersburg, MD 20899

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

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PLANNING, PREPARATION, TESTING, ANALYSIS

The material for this SRM was provided by Lukens Steel Co., Coatesville, Pennsylvania.

Homogeneity testing and analyses for certification were performed at NBS by T.W. Vetter and J.A. Norris, Inorganic Analytical Research Division.

Cooperative analyses for certification were performed in the following laboratories:

- Analytical Associates, Inc., Detroit, Michigan, C.K. Deak.
- Great Lakes Steel, Division of National Steel Corp., Ecorse, Michigan, G.J. Wojtkowiak.
- LTV Steel Company, Canton, Ohio, B.G. Pitts and S. Spino, Jr.
- Weirton Steel Corp., Weirton, West Virginia, E.N. Karabaic.
- Wyman-Gordon Company, Eastern Division, North Grafton, Massachusetts, K.D. Norlin.