

# Certificate of Analysis

## Standard Reference Materials 1159, 1160 Electronic and Magnetic Alloy Standards

Element	SRM 1159	SRM 1160
	Percent (by weight)	
Carbon	0.007	0.019
Manganese	.30 <sub>5</sub>	.55 <sub>0</sub>
Phosphorus	.003	.003
Sulfur	.003	.001
Silicon	.32	.37
Copper	.038	.021
Nickel	48.2	80.3
Chromium	0.06	0.05
Molybdenum	.01 <sub>0</sub>	4.3 <sub>5</sub>
Cobalt	.022	0.054
Iron	51.0	14.3

Samples are 1¼ in (3.1 cm) in diameter and ¾ in (1.9 cm) thick, and are issued in the annealed condition.

The analytical value listed for an element is the present best estimate of the true value based on the results of the cooperative analytical program. The analytical value is not expected to deviate from the true value by more than  $\pm 1$  in the last significant figure reported; for subscript figures, the deviation is not expected to be more than  $\pm 5$  in the subscript figure.

The material for the standards was prepared in a vacuum induction furnace at The Carpenter Steel Company, Reading, Pennsylvania, and supplied to NBS in the final form following a scheme of fabrication designed to produce material of the highest possible homogeneity.

Homogeneity testing was performed at NBS by D. M. Bouchette, S. D. Rasberry, and J. L. Weber, Jr., and was found to be satisfactory for the elements certified.

Cooperating with NBS in the analytical program were the following: Armco Steel Corporation, Research and Technology, Middletown, Ohio; Falconbridge Nickel Mines, Limited, Metallurgical Laboratories, Thornhill, Ontario, Canada; The Carpenter Steel Company, Metallurgical Department, Reading, Pennsylvania; and Westinghouse Electric Corporation, Research and Development Center, Pittsburgh, Pennsylvania.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of B. F. Scribner.

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

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George A. Uriano, Chief  
Office of Standard Reference Materials