U. S. Department of Commerce
Malcolm Baldrige
Secretary
National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate of Analysis

Standard Reference Material 101g

18 Cr–10 Ni Steel (AISI 304L)

This Standard Reference Material (SRM) is in the form of a powder and is intended for use in chemical methods of analysis.

Constituent	Percent, by Weight[1]	Estimated Uncertainty[2]
Carbon	0.0136	0.0005
Manganese	.085	.002
Phosphorus	.007	.001
Sulfur	.0078	.0002
Silicon	1.08	.01
Copper	.029	.001
Nickel	10.00	.06
Chromium	18.46	.04
Vanadium	.041	.005
Molybdenum	.004	.001
Cobalt	.09	.01

[1]The certified value listed for a constituent is the present best estimate of the "true" value based on the results of the 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 material for this SRM was prepared in powder form using argon atomization, followed by a hydrogen anneal at the Hoeganaes Sponge Iron Corporation, Riverton, New Jersey. The material was sized between 710 μm and 75 μm (25 and 200 mesh) sieves, and thoroughly blended.

Extensive homogeneity testing studies were performed on this material at the Research Laboratories of the General Motors Corporation by R.E. Kohn under the direction of M.D. Cooper. Based on the elements tested, Mn, P, Si, Ni, and Cr, it was concluded that the sized and blended material is acceptable with respect to homogeneity.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of J.K. Taylor 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 and W.P. Reed.

August 13, 1986
Gaithersburg, MD 20899

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

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List of Analysts

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Supplemental Information

Although not certified, the following results, as determined by activation analysis, are given for additional information on the composition of this steel:

Element	Percent by Weight
As	(0.003)
Ga	(.003)
Sb	(.001)
W	(.0003)