U. S. Department of Commerce
Maurice H. Stans
Secretary

National Bureau of Standards
L. M. Branscomb, Director

Certificate of Analysis

STANDARD REFERENCE MATERIAL 101f

18Cr–10Ni Steel (AISI 304L)

ANALYSTS	C	Mn	P	S	Si	Cu	Ni	Cr	V	Mo	Co
		Peroxydisulfate-Arsenite	Molybdenum-Blue Photometric	Combustion-Iodate Titration	Perchloric Acid Dehydration						
1	0.014[a]	{0.090[b] .085[c]}	0.007	0.008	0.876	{0.029[b] .030[d]}	{9.96[e] 9.97[d]}	{18.52[f] 18.47[g]}	0.034[h]	0.007[b]	0.087[b]
2	.014[a]	{.088[c] .086[i]}	.009	.008	.875	–	9.94[e]	18.47[f]	–	–	{.087[j] .091[i]}
Average	0.014	0.087	0.008	0.008	0.876	–	9.96	18.49	–	–	0.088

[a] Thermal conductivity.
[b] Activation analysis.
[c] KIO_4 spectrophotometric method.
[d] Isotope dilution.
[e] Dimethylglyoxime gravimetric method.
[f] Peroxydisulfate oxidation and potentiometric titration with ferrous ammonium sulfate solution.
[g] Coulometric method.
[h] Nitric acid oxidation and potentiometric titration with ferrous ammonium sulfate solution.
[i] Atomic absorption method.
[j] Tetraphenylarsonium chloride spectrophotometric method.

The material for this standard was prepared in powder form by argon atomization, followed by a hydrogen anneal at the Hoeganaes Sponge Iron Corporation, Riverton, New Jersey. The material was sized between 25 and 200 mesh sieves, and thoroughly blended.

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

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanships 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.

Washington, D. C. 20234
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J. Paul Cali, Acting Chief
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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	.004
Sb	.0009
W	.0002