National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material 1754

Low-Alloy Steel, AISI 4320

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

This Standard Reference Material (SRM) is a low alloy steel certified for oxygen and nitrogen. SRM 1754 is in rod form, 0.95 cm x 0.95 cm x 10.2 cm (3/8" x 3/8" x 4") and is intended primarily for use in checking and calibrating oxygen and nitrogen analyzers.

Element	Oxygen[a]	Nitrogen[b]
	Percent by Weight	
Certified Value[c]	0.0024	0.0081
Estimated Uncertainty[d]	0.0006	0.0004
Analyst		
1	0.0025	0.0081
2	.0031	.0081
3	.0022	.0077
4	.0021	.0080
5	.0018	.0086
6	.0025	----
7	.0025	.0079
8	.0022	.0078
9	.0023	.0083

[a] Inert Gas Fusion - infrared detection.

[b] Inert Gas Fusion - thermal conductivity detection.

[c] The certified values listed for an element is the present best estimate of the "true" values based on results of the cooperative program for certification.

[d] Estimated uncertainty includes methods imprecision, bias among methods, and material variability for samples of 0.5g or more.

The overall coordination of the technical measurements leading to certification were performed under the direction of J.I. Shultz, Research Associate, ASTM-NIST 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 T.E. Gills.

February 22, 1989
Gaithersburg, MD 20899

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

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PLANNING, PREPARATION, TESTING, ANALYSIS:

The material for this standard was provided by the Timken Company, Canton, Ohio, courtesy of N.J. Stecyk. Homogeneity testing was performed at NIST by R.C. Gauer.

Cooperative analyses for certification were performed in the following laboratories:

- American Cast Iron Pipe Company, Birmingham, Alabama, R.N. Smith and C. Meads.
- Armco Inc., Research & Technology, Middletown, Ohio, C.C. Borland, D.E. Gillum and I.C. Henry.
- Carpenter Technology Corp., Carpenter Steel Division, Reading, Pennsylvania, T.R. Dulski and A.A. Mattiuz.
- Copperweld Steel Company, Division of CSC, Warren, Ohio, M. Hosler and K. Bumstead.
- Leco Corporation, St. Joseph, Michigan, D. Lorenz.
- LTV Steel Company, Canton, Ohio, B.G. Pitts and J. Johnson.
- National Institute of Standards and Technology, Gaithersburg, Maryland, R.C. Gauer and R.L. Watters, Jr.
- Stelco Steel, Hilton Works, Chemical/Metallurgical Laboratory, Hamilton, Ontario, Canada, O.P. Bhargava.
- Timken Company, Canton, Ohio, N.J. Stecyk and D.A. Wolfe.