U. S. Department of Commerce
Frederick B. Dent
Secretary
National Bureau of Standards
Richard W. Roberts, Director

National Bureau of Standards
Certificate of Analysis
Standard Reference Material 336
Cr-V Steel, 0.6 C (Carbon Only)

This standard is in the form of pins 3 mm in diameter, 19 mm long, and weigh 1 g each. The pins are intended for calibrating instruments used in the determination of carbon in steel.

Element	Percent by Weight	95% Confidence Interval for the Mean
Carbon	0.567[a]	0.566 to 0.568[b]

[a]SRM 363 (similar material to SRM 336) was used as a control with an assigned carbon value of 0.624 percent. An average carbon value of 0.622 percent was obtained (4 determinations).

[b]Based on 24 determinations, and reflecting predominantly analytical error.

The pins of this SRM have been cut to a close tolerance of 1 g each, which in most instances will enable direct use of the pins without weighing. If the pins are not weighed, but are assumed to weigh exactly 1 g, the 95 percent tolerance interval for individual pins is 0.563 to 0.571 percent of carbon.[c]

[c]This includes the uncertainty in the determined percent of carbon assuming the material inhomogeneity to be negligible, plus the variation in weight among pins (based on 180 weight measurements).

Carbon determinations were performed in the NBS Analytical Chemistry Division by S. A. Wicks under the overall direction of O. Menis and J. I. Shultz. Statistical evaluations were made by J. Mandel.

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

Washington, D. C. 20234
June 19, 1973

J. Paul Cali, Chief
Office of Standard Reference Materials

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of O. Menis 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 C. L. Stanley.

PREPARATION, TESTING, AND ANALYSIS: The material for this standard was prepared by the American Cyanamid Company. Eighty five percent of the lot was made to pass 200 mesh sieve and some blending was done at the plant. Final sieving and blending operations were accomplished at NBS.

Homogeneity testing was performed by S. D. Rasberry, C. E. Fiori, and J. McKay with x-ray fluorescence analysis. Calcium and phosphorus determinations were made on 14 samples representative of the top and the bottom of seven containers. The size of the samples taken for analysis was approximately 35 mg. The maximum variations in concentration among samples were within 0.09 percent for CaO and 0.12 percent for P_2O_5.

The laboratories and analysts cooperating in the analytical program for certification were:

1. R. K. Bell, E. R. Deardorff, E. J. Maienthal, T. C. Rains, T. A. Rush, and S. A. Wicks, Analytical Chemistry Division, Institute for Materials Research, National Bureau of Standards.
2. J. Padar, Agrico Chemical Co., Division of Continental Oil Company, Pierce, Florida.
3. D. B. Underhill, Borden Chemical Co., Plant City, Florida.
4. C. C. Thornton, Thornton Laboratories, Inc., Tampa, Florida.
5. W. W. Harwood, R. M. Lynch and H. N. Gomez, International Minerals and Chemical Corp., Bartow, Florida.
6. J. A. Sielski, American Cyanamid Co., Brewster Plant, Bradley, Florida.