National Institute of Standards and Technology

Certificate of Analysis

Standard Reference Material® 2433

Titanium-Base Alloy 8Al-1Mo-1V

(In Cooperation with the ASTM)

This Standard Reference Material (SRM) is in the form of chips sized between 0.50 mm and 1.18 mm sieve openings (35 mesh and 16 mesh) and is intended primarily for use in chemical methods of analysis.

The certified values for four elements are listed in Table 1. The analytical methods used for characterization of this SRM are listed in Table 2. All values are reported as mass fractions [1].

Table 1. Certified Mass Fractions

Element	(in %)
Aluminum	7.63 ± 0.05
Iron	0.063 ± 0.003
Molybdenum	0.99 ± 0.02
Vanadium	0.98 ± 0.02

The uncertainties listed above are expressed as "combined uncertainties" calculated according to the ISO Guide [2]. Each uncertainty is based on the 95 % confidence limit of the "true value", and is intended to represent the combined effect of uncertainty components associated with various analytical factors, such as method imprecision, possible systematic errors among methods, and material variability.

PLANNING, PREPARATION, TESTING, AND ANALYSIS

The material for this SRM was provided by Timet, Henderson, NV, courtesy of G.F. Boesenecker.

Homogeneity testing by x-ray fluorescence spectrometry was performed by A.F. Marlow and P.A. Pella of the NIST Analytical Chemistry Division.

The overall coordination of the measurements leading to certification was performed under the direction of J.I. Shultz, Research Associate, ASTM-NIST Research Associate Program.

Statistical analysis was provided by L.M. Gill of the NIST Statistical Engineering Division.

The technical and support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by P.A. Lundberg and C.M. Beck II.

Gaithersburg, MD 20899
April 15, 1996
(Revision of certificate dated 3-14-96)

Thomas E. Gills, Chief
Standard Reference Materials Program

Table 2. Analytical Methods Used

Element	Methods
Aluminum	DCP, ICPOES, WDXRF
Iron	DCP, ICPOES, WDXRF
Molybdenum	DCP, ICPOES, WDXRF
Vanadium	DCP, ICPOES, WDXRF

Methods

DCP	Direct current plasma atomic emission spectrometry
ICPOES	Inductively coupled plasma optical emission spectrometry
WDXRF	Wavelength dispersive x-ray fluorescence spectrometry

Cooperative analyses for certification were performed in the following laboratories:

K. Worst, A. Krannitz, and R. Kunish; Howmet Corp., Operhall Research Center, Whitehall, MI.
S. Wichman; Oremet Titanium, Oregon Metallurgical Corp., Albany, OR.
J. Merrell; Sherry Laboratories, Inc., Muncie, IN.
E. Griffin, M.A. Sainz, and P. Cole, Teledyne Allvac, Monroe, NC.
G.F. Boesenecker; Timet, Titanium Metals Corporation of America, Henderson Technical Laboratory, Henderson, NV.
K.W. Weiss; Timet, Titanium Metals Corporation of America, Process Control Laboratory, Henderson, NV.

REFERENCES

[1] Taylor, B.N., "Guide for the Use of the International System of Units (SI)," NIST Special Publication 811, 1995 Ed., (April 1995).

[2] *Guide to the Expression of Uncertainty in Measurement*, ISBN 92-67-10188-9, 1st Ed. ISO, Geneva, Switzerland, (1993): see also Taylor, B.N. and Kuyatt, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C., (1994).