



# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 44f

#### Aluminum

#### Freezing Point on the International Temperature Scale of 1990

**660.32 °C**

Standard Reference Material (SRM) 44f is intended primarily for use in preparing secondary reference-point devices for calibrating thermometers, thermocouples and other temperature measuring devices. It consists of a 200 gram bar of a carefully selected lot of high-purity aluminum containing less than the total of 5 ppm of impurities that would affect the freezing point.

The freezing-point temperature of SRM 44f, 660.32 °C, is the value determined on representative samples of the lot. It is estimated that the uncertainty in the NIST certified value of the freezing-point temperature does not exceed  $\pm 0.01$  °C. The freezing point of SRM 44f may not necessarily be the same as the freezing point of pure aluminum.

The aluminum metal for this Standard Reference Material was obtained from Cominco American, Incorporated, Spokane, Washington.

Full details of the precautions that should be observed in freezing point determinations are given in National Bureau of Standards Circular 590, and in *Metrologia* 7, No. 3, 108-130 (July 1971). The International Temperature Scale of 1990 is described in *Metrologia* 27, No. 1, 3 (January 1990).

Technical measurements at NIST leading to certification were performed by G.T. Furukawa and J. L. Riddle of the NBS Heat Division.

This certificate is a revision of the certificate dated April 5, 1973. The changes consist primarily of the conversion of temperatures on the IPTS-68 to those on the ITS-90 by B.W. Mangum of the Chemical Process Metrology Division.

The technical and support aspects involved the revision, update and issuance of this Standard Reference Material were coordinated through the Standard Reference Materials Program by J.C. Colbert. The original coordination of certification efforts was performed by R.E. Michaelis.

Gaithersburg, MD 20899  
April 12, 1990  
(Revision of certificate dated 4-5-73)

William P. Reed, Acting Chief  
Standard Reference Materials Program