J. S. Department of Commerce
Malcolm Baldrige
Secretary
National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate of Analysis

Standard Reference Material 2126

Spectrometric Standard Solutions

Antimony, Arsenic, Selenium, and Tin

This Standard Reference Material (SRM) is intended as standard stock solutions for use in atomic absorption spectrometry, optical emission (plasma) spectrometry, spectrophotometry, or any other analytical technique that requires aqueous standard solutions for calibrating instruments. SRM 2126 consists of four single element solutions of Sb, As, Se, and Sn. Each solution contains 50 mL and was prepared gravimetrically at 22 °C to contain 10.00 ± 0.01 mg/mL of the metal ion in the percent (V/V) acid medium shown in Table 1. The certified concentrations (Table 1) are based on gravimetric procedures, i.e., weight per volume composition of high-purity metals or salts dissolved in NBS high-purity reagents.

Table 1

Solution	Metal	Concentration (mg/mL)	Source (Purity, %)	Acid Conc. (V/V) (Approximate)
2126-1	Sb	10.00 ± 0.01	Sb metal (99.99*)	HCl, 50%
2126-2	As	10.00 ± 0.01	SRM 83d (99.9926)	HCl, 15%
2126-3	Se	10.00 ± 0.01	SRM 726 (99.99)	HNO_3, 10%
2126-4	Sn	10.00 ± 0.01	SRM 741 (99.99)	HCl, 60%

*This commercially-available, high-purity material was analyzed by optical emission spectrometry and atomic absorption spectrometry and found to contain less than 50 μg/g total impurities.

SRM 2126 was prepared by T.C. Rains. Atomic absorption and emission spectrometric analyses were made by T.A. Butler, D.M. Mo, T.A. Rush, T.C. Rains, and J.A. Norris of the Inorganic Analytical Research Division.

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.W. Seward.

Procedures for Use

Stability:

This certificate is valid for one year from the shipping date provided the solutions are kept tightly capped and stored under proper laboratory conditions. NBS will monitor the stability of these solutions; if any changes occur that invalidate this certification, purchasers will be notified by NBS.

Preparation of Working Standard Solutions:

All solutions should be at 22 ± 1 °C and all glass or plastic surfaces coming into contact with the standard must have been previously cleaned. The working standard solutions are prepared from the SRM solutions by serial dilution. Dilutions should be made into certified volumetric class A flasks with 5 or 10 mL class A pipets. All volumetric transfers of solutions should be performed by a proven analytical technique. Each dilution should be acidified with an appropriate high-purity acid and diluted to calibrated volume using high-purity water. The stability of a working standard solution will depend upon the final acid concentration. To achieve the highest accuracy, the analyst should prepare daily working solutions from 100 μg/mL dilutions of the original SRM stock solutions.

Gaithersburg, MD 20899
February 14, 1985

Stanley D. Rasberry, Chief
Office of Standard Reference Materials