National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material 1696

Sulfur Dioxide in Nitrogen

(Nominal Concentration - 3500 μmol/mol)

(Stationary Source Emission Gas Standard)

This Standard Reference Material (SRM) is intended for the calibration of instruments used for the analysis of sulfur dioxide in stationary source emissions. It is not intended as a working standard, but rather as a primary standard to which the concentration of working standards may be related.

This SRM is supplied in an aluminum cylinder with a deliverable volume of 0.85 m^3 (30 ft^3) at normal temperature and pressure. The cylinder conforms to DOT specifications and is equipped with a CGA-660 valve. The cylinder becomes the property of the purchaser.

Sulfur Dioxide concentration: ± μmol/mol

Cylinder Number: Sample Number:

The concentration of sulfur dioxide is relative to all other constituents of this gas mixture.

The uncertainty shown is the estimated upper limit of error of the sulfur dioxide concentration and is expressed as the 95 % confidence interval. This uncertainty includes the estimated inaccuracy of the primary standards and the imprecision of the analysis of the SRM versus the primary standards.

Each cylinder of gas is individually analyzed, and the concentration given above applies only to the cylinder identified by cylinder number and sample number on this certificate.

The certified value on this certificate is valid for 4 years from the date of shipment from the National Institute of Standards and Technology (NIST). A validation sticker is supplied with each gas cylinder to validate its certification period. Please affix this sticker to the cylinder upon the receipt of the SRM.

CAUTION: Care must be taken to avoid contamination of the sample during the use of the cylinder with any gas handling system.

The measurements leading to the certification of this SRM were performed in the NIST Organic Analytical Research Division by G.D. Mitchell.

The overall direction and coordination of the technical measurements leading to the certification were performed by W.D. Dorko and W.E. May of the NIST Organic Analytical Research 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 T.E. Gills.

Gaithersburg, MD 20899
June 15, 1992
(Revision of certificate dated 3-20-81)

William P. Reed, Chief
Standard Reference Materials Program

(over)

Certification Information

The cylinder identified on this certificate is one of a group or "lot" of cylinders. A lot contains a minimum of 52 cylinders and is prepared commercially according to rigid specifications to ensure that the lot is homogeneous or stable. Each cylinder in the lot is individually analyzed at NIST for sulfur dioxide content.

Analysis

The concentration of sulfur dioxide in this SRM was determined by means of a continuous analyzer equipped with a pulsed fluorescence detector. The analyzer was calibrated with a "batch" standard from the SRM lot, which had previously been analyzed against a set of primary standards of sulfur dioxide in nitrogen. The primary standards were analyzed using the hydrogen peroxide method which is considered to be inherently accurate in the concentration range of this SRM. It was also intercompared with cylinders retained at NIST from previous lots of this SRM.

Stability

The stability of this SRM is considered excellent and no losses of sulfur dioxide have been observed for similar samples contained in aluminum cylinders for periods of time greater than 4 years. The value appearing on this certificate is considered valid for 4 years from date of shipment. Periodic reanalyses of representative samples from this lot will be performed, and if significant changes are observed within a 4-year period, the purchaser will be notified.

Reanalysis

The NIST will reanalyze this SRM for the original purchaser for a fee not to exceed the cost of similar SRMs available at the time of the request for reanalysis, providing the cylinder pressure is at least 6.9 MPa (1000 psi). The original purchaser should contact the NIST Organic Analytical Research Division (301) 975-3108 to arrange for this service.