U.S. Department of Commerce
Juanita M. Kreps
Secretary

National Bureau of Standards
Ernest Ambler, Director

National Bureau of Standards

Certificate of Analysis

Standard Reference Material 2658

Oxygen in Nitrogen

(Gas Standard)

This Standard Reference Material is intended for use in the calibration of instruments used for combustion control and respiratory gas analysis. It is not intended as a daily working standard, but rather as a primary standard to which the concentration of the daily working standards may be related.

Oxygen concentration: ± mole percent

Cylinder Number: Sample Number:

The concentration of oxygen is relative to all other constituents of the gas.

Each cylinder is individually analyzed and the concentration that appears on this certificate applies to the cylinder identified by cylinder and sample number.

The original development and evaluation of the oxygen in nitrogen series of Standard Reference Materials were performed at the National Bureau of Standards by W. D. Dorko and W. P. Schmidt.

The overall direction and coordination of technical measurements leading to certification were performed under the chairmanship of E. E. Hughes and H. L. Rook.

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. Alvarez.

Washington, D.C. 20234
December 31, 1979

George A. Uriano, Chief
Office of Standard Reference Materials

(over)

Analysis:

The concentration of oxygen in this Standard Reference Material was determined by comparison with a set of gravimetric primary standards. The intercomparisons were performed using both a gas chromatograph equipped with a thermal conductivity detector and an analyzer sensitive to the paramagnetic properties of oxygen. The uncertainty shown is based on an estimate of the upper limit of the total uncertainty including the inaccuracy of the gravimetric primary standards and the imprecision of intercomparison of the Standard Reference Material with the gravimetric standards. This uncertainty at the 95% confidence level does not exceed 1.0% relative.

This sample is certified only for the concentration of oxygen.

A representative number of samples were examined to determine the argon concentration and it is estimated to be _____ mole percent.

Stability:

This SRM is contained in an aluminum cylinder. The stability is considered good and no change in concentration is anticipated. However, the value appearing on this certificate is considered valid for only 2 years from date of purchase. Periodic reanalyses of representative samples from this lot will be performed at NBS, and if significant changes are observed within the 2 year period, purchasers of the SRM will be notified.

Cylinder:

This SRM is supplied in cylinders at 12.4 MPa (1800 psi) pressure with a delivered volume of 0.88 m^3 (31 cubic feet) at STP. The cylinders conform to DOT specifications and are equipped with CGA-580 valves.

The cylinders become the property of the purchaser. However, they may be returned, prepaid, to the National Bureau of Standards for disposal.

SRM
2658