

Certificate of Analysis
Standard Reference Material 1604a
Certified Gas Standard
Oxygen in Nitrogen

Oxygen concentration 0.000152 ± 0.000005 mole percent

The concentration of oxygen in this standard reference material is relative to all other constituents, including nitrogen and possible traces of water vapor and argon. The uncertainty shown represents the 95 percent confidence limit of the mean based on seven determinations of the oxygen content.

PREPARATION AND ANALYSIS: The containers were prepared prior to filling by alternate cycles of evacuation and flushing with nitrogen of low oxygen content. They were finally filled with a second sample of nitrogen of low oxygen content. The determinations of the oxygen content were made using an absolute electrochemical method developed specifically for this standard reference material.

STABILITY: No change in the oxygen concentration value was observed in a cylinder stored at room temperature for one month. However, this standard reference material should never be stored for any length of time at a temperature above room temperature (25 °C).

The oxygen concentration shown above is considered to be accurate for the gas as contained in an unopened cylinder for a period of five years. Periodic analyses of the gas mixture will be made and users will be notified if any significant deviation from the above value appears.

Preparation and chemical analyses leading to certification of this standard reference material were performed by J. M. Ives and E. E. Hughes.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of J. K. Taylor.

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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 T. W. Mears.

Washington, D. C. 20234
January 25, 1971

J. Paul Cali, Acting Chief
Office of Standard Reference Materials

USE AND STORAGE: The sample is contained in a disposable cylinder and will not be refilled.

Each cylinder has been leak-tested at the joint between valve and cylinder. Valves are hand-tightened and were determined to be leak-free before filling. The valves are equipped to accept CGA-580 fittings. To avoid contamination of the contents all connections should be evacuated, or flushed with the sample, before use.

Cylinders should be stored at room temperature. Cylinder valves are equipped with rupture disk relief valves set to rupture at 1200 psi.

Each cylinder is filled to about 500 psi. The total volume of gas is approximately 68 liters measured under standard conditions.

DOT special permit number 5075.