

National Bureau of Standards

Certificate

Standard Reference Material 2614

Carbon Monoxide in Air

(Ambient Air Quality Gas Standard)

This Standard Reference Material is intended for use in the calibration of instruments used for the analysis of carbon monoxide in air. It is also intended to complement Standard Reference Materials 1677 and 1678 (carbon monoxide in nitrogen) for use with analytical techniques where the use of nitrogen as diluent gas may result in measurement error. It is not intended as a working standard, but rather as a primary standard to which the concentration of working standards may be related.

Carbon monoxide concentration: \pm $\mu\text{mol/mol}$ (ppm)

Cylinder Number: Sample Number:

The concentration of carbon monoxide 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 development and evaluation of the gravimetric primary standards used to certify this Standard Reference Material were performed at the National Bureau of Standards by J. Sudduth and W. D. Dorko.

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 W. P. Reed.

Washington, D.C. 20234
January 26, 1979
(Revision of Certificate
dated 1-17-77)

J. Paul Cali, Chief
Office of Standard Reference Materials

(over)

Analysis:

The concentration of carbon monoxide in this Standard Reference Material was determined by comparison with a set of gravimetric primary standards. The intercomparisons were performed using nondispersive infrared photometry. The uncertainty shown is based on an estimate of the upper limit of the total uncertainty including the inaccuracy of the gravimetric primary standard and the imprecision of intercomparison of the Standard Reference Material with the gravimetric standards. This uncertainty at the 95% confidence level does not exceed 1.2% relative.

Stability:

This SRM is contained in an aluminum cylinder. The stability is considered good and no loss of concentration has been observed over a three month period. However, the value appearing on this certificate is considered valid for only 1 year 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 1 year period, purchasers of the SRM will be notified. Validation of the concentration of carbon monoxide in cylinders which have been in the possession of the purchasers for more than one year can be made by the National Bureau of Standards on a cost reimbursement basis if more than 3.4 MPa (500 psi) remains in the cylinder. Inquiries concerning recertification should be made to Chief, Gas and Particulate Science Division, NBS, at (301) 921-2886.

Cylinder:

This SRM is supplied in cylinders at 12.4 MPa (1800 psi) pressure with a delivered volume of 0.88 m³ (31 cubic feet at STP). The cylinders conform to DOT specifications and are equipped with CGA-350 valves.

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