107.1 - Carbon Monoxide in Air or Nitrogen

These SRMs are intended for calibrating equipment and apparatus used to measure various components of gas mixtures and atmospheric pollutants. The typical gas mixture is supplied in a DOT 3AL specification aluminum (6061 alloy) cylinder with a nominal pressure exceeding 12.4 mPa that provides the user with approximately 0.73 m^3 of usable mixture. Due to increasing customer demand, these primary gas mixtures are in short supply and may not be readily available for sale. In such cases, a NIST traceable reference gas described below may be substituted.

A NIST Traceable Reference Material (NTRM) is a reference material produced by a commercial supplier with a well-defined traceability to NIST measurement results.. This traceability is established via criteria and protocols defined by NIST that are tailored to meet the needs of the metrological community to be served. The NTRM concept was established to allow NIST to respond to the increasing needs for high quality reference materials by leveraging its relatively fixed human and financial resources with secondary reference material producers. Reference material producers adhering to NIST defined protocol requirements are allowed to use the NTRM trademark to identify their product.

The gas NTRM program was established in 1992 in partnership with the U.S. EPA and specialty gas companies as a means for providing end-users with the wide variety of certified gas standards needed to implement the Emissions Trading provision of the 1990 Clean Air Act. Gas NTRMs are produced and distributed by specialty gas companies with NIST oversight of the production and maintenance, and direct involvement in the analysis. NTRMs can be developed for any pollutant, concentration, and balance gas combination for which a NIST primary standard or SRM exists. The gas standards prepared according to this program are related, within known limits of uncertainty, to specific gaseous primary standards maintained by NIST.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

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- Reference values are italicized
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107.1(1)- Carbon Monoxide in Air

SRM	Description	Unit Size	Carrier Gas	Certified Component	Nominal Amount-of-substance fraction
2613a	Carbon Monoxide in Air (Nominal Amount-of-Substance Fraction 20 µmol/mol)	6 L cylinder	Air	CO	20 µmol/mol
2614a	Carbon Monoxide in Air (Nominal Amount-of-Substance Fraction 45 µmol/mol)	6 L cylinder	Air	CO	42 µmol/mol

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107.1(2)- Carbon Monoxide in Nitrogen

SRM	Description	Unit Size	Carrier Gas	Certified Component	Nominal Amount-of-substance fraction
1677c*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 10 µmol/mol)	6 L cylinder	Nitrogen	CO	10 µmol/mol
1678c*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 50 µmol/mol)	6 L cylinder	Nitrogen	CO	50 µmol/mol
1679c*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 100 µmol/mol)	6 L cylinder	Nitrogen	CO	100 µmol/mol
1680b*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 500 µmol/mol)	6 L cylinder	Nitrogen	CO	500 µmol/mol
1681b*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 1000 µmol/mol)	6 L cylinder	Nitrogen	CO	1000 µmol/mol
2635a*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 25 µmol/mol)	6 L cylinder	Nitrogen	CO	25 µmol/mol
2636a*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 250 µmol/mol)	6 L cylinder	Nitrogen	CO	250 µmol/mol
2637a*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 2500 µmol/mol)	6 L cylinder	Nitrogen	CO	2500 µmol/mol
2638a*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 5000 µmol/mol)	6 L cylinder	Nitrogen	CO	5000 µmol/mol
2639a	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 1 % mol/mol)	6 L cylinder	Nitrogen	CO	1 % mol/mol
2640a	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 2 % mol/mol)	6 L cylinder	Nitrogen	CO	2 % mol/mol
2641a	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 4 % mol/mol)	6 L cylinder	Nitrogen	CO	4 % mol/mol
2642a*	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 8 % mol/mol)	6 L cylinder	Nitrogen	CO	8 % mol/mol
2740a	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 10 % mol/mol)	6 L cylinder	Nitrogen	CO	10 % mol/mol
2741a	Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 13 % mol/mol)	6 L cylinder	Nitrogen	CO	13 % mol/mol

* The SRMs that are marked with * are available as NTRMs from commercial suppliers.

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