



Praxair's North American Specialty Gases sales, technical support and production teams will provide you with the right information and products for all your environmental applications.

Our extensive product offering includes:

- NIST Traceable Reference Materials (NTRM)** – Certified by the National Institute of Standards and Technology (NIST) and accepted by the Environmental Protection Agency (EPA), as the highest accuracy standards commercially available. These standards are the regulatory equivalent to NIST's Standard Reference Materials (SRMs). NTRMO are made using the same components and are within the analytical range of NIST SRMs.
- EPA Protocols** – These gas mixtures are used for the calibration and audit of Continuous Emission Monitors (CEMs). Praxair EPA Protocols are NIST traceable with a $\pm 1\%$ accuracy and produced in accordance with the latest EPA specifications found in document - 600/R93/224 Rev. 9/93.
- Primary Master** – High accuracy mixtures prepared gravimetrically on electronic high precision balance. These standards are analyzed and named against NIST traceable reference materials.
- Certified Master** – These routine calibration mixtures are prepared by either gravimetric, volumetric or partial pressure methods and analyzed against NIST traceable reference materials.
- Dynamic-Blend Master** – These zero blend tolerance mixtures are prepared on an instrument based dynamic blending system. All master gases are analyzed and named against NIST, SRM or NTRMs. Batches of two to one-hundred cylinders can be produced with the identical concentrations.
- Dynamic-Blend Standard** – These mixtures are prepared similarly to the Dynamic Blend Master. Certification of the mixtures is based on process accuracy and Praxair Primary Laboratory Standards (PPLS).

When NIST traceability is not required, Praxair's standard grades are available to meet your working gas requirements.

In addition to Primary, Certified and Non-Certified Standards, Praxair's unique Custom Standard allows you to specify the exact blend tolerance and analytical uncertainty for the mixture.

Please see page E11 for information about our line of **Mobile Source Emissions Products**:

- NIST Traceable Mixtures BAR-90 and BAR-97** – containing CO, CO₂, C₃H₈, and NO in high and low pressure cylinders.

Mixture Grade	Order Reference	Mixture Component Concentration Range	Blend Tolerance	Analytical Uncertainty
EV – Environmental Grades⁽¹⁾				
NTRM	T	N/A	N/A	$\leq 1\%$
EPA Protocol	E	2 ppm - 25 ppm 25.1 - 49.9%	$\pm 10\%$ $\pm 5\%$	$\pm 1\%$ $\pm 1\%$
Primary Master	PM	1 ppm - 9.9 ppm 10 ppm - 25 ppm 25.1 ppm - 9999 ppm 1.0% - 49.9%	$\pm 10\%$ $\pm 10\%$ $\pm 5\%$ $\pm 2\%$	± 0.1 ppm $\pm 1\%$ $\pm 1\%$ $\pm 1\%$
Certified Master	CM	1 ppm - 25 ppm 25.1 ppm - 999 ppm 0.1% - 49.9%	$\pm 20\%$ $\pm 10\%$ $\pm 5\%$	$\pm 5\%$ $\pm 2\%$ $\pm 2\%$
Dynamic Blend Master	DM	1 ppm - 99 ppm 100 ppm - 49.9%	Zero Zero	$\pm 2\%$ $\pm 1\%$
Dynamic Blend Standard	D	1 ppm - 99.9 ppm 100 ppm - 49.9%	Zero Zero	$\pm 5\%$ $\pm 2\%$
ST – Standard Grades				
Primary Standard	P	1 ppm - 9.9 ppm 10 ppm - 25 ppm 25.1 ppm - 9999 ppm 0.1% - 49.9%	$\pm 10\%$ $\pm 10\%$ $\pm 5\%$ $\pm 2\%$	± 0.1 ppm $\pm 1\%$ $\pm 1\%$ $\pm 1\%$ or 0.02% abs
Certified Standard	C	1 ppm - 99.9 ppm 100 ppm - 9999 ppm 0.1% - 49.9%	$\pm 20\%$ $\pm 10\%$ $\pm 5\%$	$\pm 5\%$ $\pm 2\%$ $\pm 2\%$
Non-Certified Standard	U	1 ppm - 999 ppm 0.1% - 49.9%	$\pm 20\%$ $\pm 10\%$	N/A
Custom Standard	Z	1 ppm - 49.9%	TBD	TBD

⁽¹⁾ All Environmental Grades are NIST traceable. Actual ranges, blend tolerance, and analytical uncertainty are based on available National Institute of Standards and Technology (NIST) SRM concentrations. Please see individual components for specific information.

Note: For all mixtures, blend tolerance and analytical uncertainty specification may vary depending on the chemical characteristics of the component and the cylinder size. For mixtures outside of these ranges, please contact your local Praxair representative.

Environmental Products Cylinder Table

Cylinder Style	Pressure		Volume	
	psig	Bar	ft ³	m ³
AS	2000	138	145	4.11
AQ	2200	152	78	2.21
A3	2200	152	29	0.82
T	2640	182	314	8.89
K	2200	152	236	6.68
D7	260	18	8.5	0.24

Note: Nominal contents. Actual volume may vary due to component and/or concentration. Please inquire about other cylinder sizes.