

Environmental Air Sampling Gas Standards

Our high-quality air sampling gas calibration standards are provided by Spectra/Linde and Scott/Air Liquide—meeting lab requirements for two separate sources of calibration standards. Each comes with a certificate of analysis and unique serial number. All cylinders are disposable and do not require rental or demurrage fees. Recertification of cylinders is available directly with our suppliers. All cylinders are drop-shipped from our suppliers to provide fast delivery and the “freshest” standard possible. Minimum 12-month stability on all cylinders.

TO-14A Internal Standard Mix (3 components)

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d5	
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34412 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26352 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34412-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34427 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26353 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34427-PI (ea.)	

No data pack available.

TO-14A Internal Standard/Tuning Mix (4 components)

Bromochloromethane	Chlorobenzene-d5
1-Bromo-4-fluorobenzene	1,4-Difluorobenzene
(4-Bromofluorobenzene)	
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34408 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26354 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34408-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34425 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26355 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34425-PI (ea.)	

No data pack available.

TO-14A GC-MS Tuning Mix

4-Bromofluorobenzene
1 ppm in nitrogen, 104 liters @ 1,800 psi
cat.# 34406 (ea.)
1 ppm in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 26346 (ea.)
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 34406-PI (ea.)
100 ppb in nitrogen, 104 liters @ 1,800 psi
cat.# 34424 (ea.)
100 ppb in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 26347 (ea.)
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 34424-PI (ea.)

No data pack available.

TO-14A Aromatics Mix (14 components)

Benzene	Toluene
Chlorobenzene	1,2,4-Trichlorobenzene
<i>m</i> -Dichlorobenzene	1,2,4-Trimethylbenzene
<i>o</i> -Dichlorobenzene	1,3,5-Trimethylbenzene
<i>p</i> -Dichlorobenzene	<i>m</i> -Xylene
Ethyl benzene	<i>o</i> -Xylene
Styrene	<i>p</i> -Xylene
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34404 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26348 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34404-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34423 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26349 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34423-PI (ea.)	

No data pack available.

TO-14A Chlorinated Hydrocarbon Mix (19 components)

Carbon tetrachloride	Hexachloro-1,3-butadiene
Chloroform	Methyl chloride
1,1-Dichloroethane	Methylene chloride
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
1,1-Dichloroethene	Tetrachloroethylene
<i>cis</i> -1,2-Dichloroethylene	1,1,1-Trichloroethane
1,2-Dichloropropane	1,1,2-Trichloroethane
<i>cis</i> -1,3-Dichloropropene	Trichloroethene
<i>trans</i> -1,3-Dichloropropene	Vinyl chloride
Ethyl chloride	
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34402 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26350 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34402-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34422 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26351 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34422-PI (ea.)	

No data pack available.

▶ See pages 452–453 for cylinder and regulator information.

please note

Gas standards are subject to hazardous materials shipping fees by most freight carriers. All calibration gas standards are nonreturnable due to DOT hazardous shipping requirements.



TO-14A CFC/HCFC Mix (4 components)

Trichlorofluoromethane (Freon 11)
Dichlorodifluoromethane (Freon 12)
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
1,2-Dichlorotetrafluoroethane (Freon 114)
1 ppm in nitrogen, 104 liters @ 1,800 psig
cat.# 34410 (ea.)
100 ppb in nitrogen, 104 liters @ 1,800 psig
cat.# 34426 (ea.)
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 34410-PI (ea.)
100 ppb in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 26356 (ea.)
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 34426-PI (ea.)

No data pack available.

TO-14A Calibration Mix (39 components)

Benzene	Ethyl chloride
Bromomethane	Hexachloro-1,3-butadiene
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Styrene
Chloroform	1,1,2,2-Tetrachloroethane
Chloromethane	Tetrachloroethylene
1,2-Dibromoethane	Toluene
<i>m</i> -Dichlorobenzene	1,2,4-Trichlorobenzene
<i>o</i> -Dichlorobenzene	1,1,1-Trichloroethane
<i>p</i> -Dichlorobenzene	1,1,2-Trichloroethane
Dichlorodifluoromethane	Trichloroethene
1,1-Dichloroethane	Trichlorofluoromethane
1,2-Dichloroethane	1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethene	1,2,4-Trimethylbenzene
<i>cis</i> -1,2-Dichloroethene	1,3,5-Trimethylbenzene
1,2-Dichloropropane	Vinyl chloride
<i>cis</i> -1,3-Dichloropropene	<i>m</i> -Xylene
<i>trans</i> -1,3-Dichloropropene	<i>o</i> -Xylene
Dichlorotetrafluoroethane	<i>p</i> -Xylene
Ethyl benzene	
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34400 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26340 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34400-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34421 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26341 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34421-PI (ea.)	

No data pack available.

TO-14A 41 Component Mix (41 components)

Acrylonitrile	Ethyl benzene
Benzene	Ethyl chloride
Bromomethane	Hexachloro-1,3-butadiene
1,3-Butadiene	Methylene chloride
Carbon tetrachloride	Styrene
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethylene
Chloromethane	Toluene
1,2-Dibromoethane	1,2,4-Trichlorobenzene
<i>m</i> -Dichlorobenzene	1,1,1-Trichloroethane
<i>o</i> -Dichlorobenzene	1,1,2-Trichloroethane
<i>p</i> -Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	1,1,2-Trichlorotrifluoroethane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
<i>cis</i> -1,2-Dichloroethene	Vinyl chloride
1,2-Dichloropropane	<i>m</i> -Xylene
<i>cis</i> -1,3-Dichloropropene	<i>o</i> -Xylene
<i>trans</i> -1,3-Dichloropropene	<i>p</i> -Xylene
Dichlorotetrafluoroethane	
1 ppm in nitrogen, 104 liters @ 1,800 psi	
cat.# 34430 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 26342 (ea.)	
1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±10%; Analytical accuracy: ±5%	
cat.# 34430-PI (ea.)	
100 ppb in nitrogen, 104 liters @ 1,800 psi	
cat.# 34431 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 26343 (ea.)	
100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)	
Blend tolerance: ±20%; Analytical accuracy: ±10%	
cat.# 34431-PI (ea.)	

No data pack available.





2nd Source TO-14A/TO-15 Gas Calibration Standards

- Standards from TWO manufacturers provide second source on one order.
- 12-month stability in transportable cylinders.
- Drop-shipped for fast delivery and maximum shelf life.

A. Spectra (Linde) 104 L Cylinders
B. Scotty (Air Liquide) 110 L Cylinders
C. Scotty (Air Liquide) 110 L Cylinders (Pi-marked Cylinders for EU Regulations)

▶ See pages 452–453 for cylinder and regulator information.

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TO-14A 43 Component Mix (43 components)

Acrylonitrile	Ethyl benzene
Benzene	Ethyl chloride
Bromomethane	4-Ethyltoluene
1,3-Butadiene	Hexachloro-1,3-butadiene
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Styrene
Chloroform	1,1,2,2-Tetrachloroethane
Chloromethane	Tetrachloroethylene
3-Chloropropene	Toluene
1,2-Dibromoethane	1,2,4-Trichlorobenzene
<i>m</i> -Dichlorobenzene	1,1,1-Trichloroethane
<i>o</i> -Dichlorobenzene	1,1,2-Trichloroethane
<i>p</i> -Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	1,1,2-Trichlorotrifluoroethane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
<i>cis</i> -1,2-Dichloroethene	Vinyl chloride
1,2-Dichloropropane	<i>m</i> -Xylene
<i>cis</i> -1,3-Dichloropropene	<i>o</i> -Xylene
<i>trans</i> -1,3-Dichloropropene	<i>p</i> -Xylene
Dichlorotetrafluoroethane	

1 ppm in nitrogen, 104 liters @ 1,800 psi

cat.# 34432 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 26344 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 34432-PI (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psi

cat.# 34433 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 26345 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 34433-PI (ea.)

No data pack available.

TO-15 Subset 25 Component Mix (25 components)

Acetone	4-Ethyltoluene
Allyl chloride	Heptane
Benzyl chloride*	Hexane
Bromodichloromethane	2-Hexanone (MBK)
Bromoform	4-Methyl-2-pentanone
1,3-Butadiene	Methyl <i>tert</i> -butyl ether (MTBE)
2-Butanone (MEK)	2-Propanol
Carbon disulfide*	Propylene
Cyclohexane	Tetrahydrofuran
Dibromochloromethane	2,2,4-Trimethylpentane
<i>trans</i> -1,2-Dichloroethene	Vinyl acetate
1,4-Dioxane	Vinyl bromide
Ethyl acetate	

1 ppm in nitrogen, 104 liters @ 1,800 psi

cat.# 34434 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 26357 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 34434-PI (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psi

cat.# 34435 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 26358 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 34435-PI (ea.)

*Stability of this compound cannot be guaranteed.

No data pack available.

TO-15 65 Component Mix (65 components)

Acetone	4-Ethyltoluene
Acrolein	Trichlorofluoromethane (Freon 11)
Benzene	Dichlorodifluoromethane (Freon 12)
Benzyl chloride*	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
Bromodichloromethane	1,2-Dichlorotetrafluoroethane (Freon 114)
Bromoform	Heptane
Bromomethane	Hexachloro-1,3-butadiene
1,3-Butadiene	Hexane
2-Butanone (MEK)	2-Hexanone (MBK)
Carbon disulfide*	4-Methyl-2-pentanone (MIBK)
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Methyl <i>tert</i> -butyl ether (MTBE)
Chloroethane	Methyl methacrylate
Chloroform	Naphthalene
Chloromethane	2-Propanol
Cyclohexane	Propylene
Dibromochloromethane	Styrene
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	Tetrachloroethene
1,4-Dichlorobenzene	Tetrahydrofuran
1,1-Dichloroethane	Toluene
1,2-Dichloroethane	1,2,4-Trichlorobenzene
<i>cis</i> -1,2-Dichloroethene	1,1,1-Trichloroethane
<i>trans</i> -1,2-Dichloroethene	1,1,2-Trichloroethane
1,2-Dichloropropane	Trichloroethene
<i>cis</i> -1,3-Dichloropropene	1,2,4-Trimethylbenzene
<i>trans</i> -1,3-Dichloropropene	1,3,5-Trimethylbenzene
1,4-Dioxane	Vinyl acetate
Ethanol*	Vinyl chloride
Ethyl acetate	<i>m</i> -Xylene
Ethyl benzene	<i>o</i> -Xylene
Ethylene dibromide (1,2-dibromoethane)	<i>p</i> -Xylene

1 ppm in nitrogen, 104 liters @ 1,800 psi

cat.# 34436 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 26359 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$

cat.# 34436-PI (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 26360 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)

Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$

cat.# 34437-PI (ea.)

*Stability of this compound cannot be guaranteed.

No data pack available.



75 Comp TO15 + NJ Mix

(75 components)

Acetone	4-Ethyltoluene
Acrolein	Trichlorofluoromethane (Freon 11)
Benzene	Dichlorodifluoromethane (Freon 12)
Benzyl chloride*	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
Bromodichloromethane	1,2-Dichlorotetrafluoroethane (Freon 114)
Bromoform	Heptane
Bromomethane	Hexachloro-1,3-butadiene
1,3-Butadiene	Hexane
<i>n</i> -Butane	2-Hexanone (MBK)
2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)
<i>tert</i> -Butyl alcohol	Methylene chloride
Carbon disulfide*	Methyl <i>tert</i> -butyl ether (MTBE)
Carbon tetrachloride	Methyl methacrylate
Chlorobenzene	Naphthalene
Chloroethane	<i>n</i> -Nonane
Chloroform	<i>n</i> -Pentane
Chloromethane	2-Propanol
3-Chloroprene	<i>n</i> -Propylbenzene
2-Chlorotoluene	Propylene
Cumene	Styrene
Cyclohexane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dichlorobenzene	Tetrahydrofuran
1,3-Dichlorobenzene	Toluene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethene	Trichloroethene
<i>cis</i> -1,2-Dichloroethene	1,2,4-Trimethylbenzene
<i>trans</i> -1,2-Dichloroethene	1,3,5-Trimethylbenzene
1,2-Dichloropropane	2,2,4-Trimethylpentane
<i>cis</i> -1,3-Dichloropropene	Vinyl acetate
<i>trans</i> -1,3-Dichloropropene	Vinyl bromide
1,4-Dioxane	Vinyl chloride
Ethanol*	<i>m</i> -Xylene
Ethyl acetate	<i>o</i> -Xylene
Ethyl benzene	<i>p</i> -Xylene
Ethylene dibromide (1,2-dibromoethane)	

1 ppm in nitrogen, 104 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34396 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34392 (ea.)

100 ppb in nitrogen, 110 liters @ 1800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34393 (ea.)

*Stability of this compound cannot be guaranteed.
 No data pack available.

10 Comp NJ Subset Test Mix (10 components)

<i>n</i> -Butane	<i>n</i> -Nonane
<i>tert</i> -Butyl alcohol	<i>n</i> -Pentane
3-Chloroprene	<i>n</i> -Propylbenzene
2-Chlorotoluene	2,2,4-Trimethylpentane
Cumene	Vinyl bromide

1 ppm in nitrogen, 104 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34398 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34394 (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34399 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34395 (ea.)

No data pack available.

74 Comp TO15 + NJ Mix, (no Acrolein)

(74 components)

Acetone	Trichlorofluoromethane (Freon 11)
Benzene	Dichlorodifluoromethane (Freon 12)
Benzyl chloride*	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
Bromodichloromethane	1,2-Dichlorotetrafluoroethane (Freon 114)
Bromoform	Heptane
Bromomethane	Hexachloro-1,3-butadiene
1,3-Butadiene	Hexane
<i>n</i> -Butane	2-Hexanone (MEK)
2-Butanone (MEK)	<i>tert</i> -Butyl alcohol
<i>tert</i> -Butyl alcohol	Carbon disulfide*
Carbon disulfide*	Carbon tetrachloride
Carbon tetrachloride	Chlorobenzene
Chlorobenzene	Chloroethane
Chloroethane	Chloroform
Chloroform	Chloromethane
Chloromethane	3-Chloroprene
3-Chloroprene	2-Chlorotoluene
2-Chlorotoluene	Cumene
Cumene	Cyclohexane
Cyclohexane	Dibromochloromethane
Dibromochloromethane	1,2-Dichlorobenzene
1,2-Dichlorobenzene	1,3-Dichlorobenzene
1,3-Dichlorobenzene	1,4-Dichlorobenzene
1,4-Dichlorobenzene	1,1-Dichloroethane
1,1-Dichloroethane	1,2-Dichloroethane
1,2-Dichloroethane	1,1-Dichloroethene
1,1-Dichloroethene	<i>cis</i> -1,2-Dichloroethene
<i>cis</i> -1,2-Dichloroethene	<i>trans</i> -1,2-Dichloroethene
<i>trans</i> -1,2-Dichloroethene	1,2-Dichloropropane
1,2-Dichloropropane	<i>cis</i> -1,3-Dichloropropene
<i>cis</i> -1,3-Dichloropropene	<i>trans</i> -1,3-Dichloropropene
<i>trans</i> -1,3-Dichloropropene	1,4-Dioxane
1,4-Dioxane	Ethanol*
Ethanol*	Ethyl acetate
Ethyl acetate	Ethyl benzene
Ethyl benzene	Ethylene dibromide (1,2-dibromoethane)
Ethylene dibromide (1,2-dibromoethane)	4-Ethyltoluene
4-Ethyltoluene	

100 ppb in nitrogen, 104 liters @ 1,800 psig
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34397 (ea.)

*Stability of this compound cannot be guaranteed.
 No data pack available.



2nd Source TO-14A/TO-15 Gas Calibration Standards



- Standards from TWO manufacturers provide second source on one order.
- 12-month stability in transportable cylinders.
- Drop-shipped for fast delivery and maximum shelf life.

A. Spectra (Linde) 104 L Cylinders
B. Scotty (Air Liquide) 110 L Cylinders
C. Scotty (Air Liquide) 110 L Cylinders
(Pi-marked Cylinders for EU Regulations)

▶ See pages 452–453 for cylinder and regulator information.

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Massachusetts APH Mix (26 components)

Benzene	<i>p</i> -Isopropyltoluene
1,3-Butadiene	Methyl <i>tert</i> -butyl ether
Butylcyclohexane	1-Methyl-3-ethylbenzene
Cyclohexane	Naphthalene
<i>n</i> -Decane	<i>n</i> -Nonane
2,3-Dimethylheptane	<i>n</i> -Octane
2,3-Dimethylpentane	Toluene
<i>n</i> -Dodecane	1,2,3-Trimethylbenzene
Ethylbenzene	1,3,5-Trimethylbenzene
<i>n</i> -Heptane	<i>n</i> -Undecane
<i>n</i> -Hexane	<i>o</i> -Xylene
Isopentane	<i>m/p</i> -Xylene (combined)
Isopropylbenzene	

1 ppm in nitrogen, 104 liters @ 1,800 psi
cat.# 34540 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 26366 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (PI-marked cylinder)
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 34540-PI (ea.)

No data pack available.

▶ See pages 452–453 for cylinder and regulator information.

Ozone Precursor Mixture/PAMS (57 components)

Acetylene	Isopropylbenzene
Benzene	Methylcyclohexane
<i>n</i> -Butane	Methylcyclopentane
1-Butene	2-Methylheptane
<i>cis</i> -2-Butene	3-Methylheptane
<i>trans</i> -2-Butene	2-Methylhexane
Cyclohexane	3-Methylhexane
Cyclopentane	2-Methylpentane
<i>n</i> -Decane	3-Methylpentane
<i>m</i> -Diethylbenzene	<i>n</i> -Nonane
<i>p</i> -Diethylbenzene	<i>n</i> -Octane
2,2-Dimethylbutane	<i>n</i> -Pentane
2,3-Dimethylbutane	1-Pentene
2,3-Dimethylpentane	<i>cis</i> -2-Pentene
2,4-Dimethylpentane	<i>trans</i> -2-Pentene
<i>n</i> -Dodecane	Propane
Ethane	<i>n</i> -Propylbenzene
Ethylbenzene	Propylene
Ethylene	Styrene
<i>m</i> -Ethyltoluene	Toluene
<i>o</i> -Ethyltoluene	1,2,3-Trimethylbenzene
<i>p</i> -Ethyltoluene	1,2,4-Trimethylbenzene
<i>n</i> -Heptane	1,3,5-Trimethylbenzene
<i>n</i> -Hexane	2,2,4-Trimethylpentane
1-Hexene	2,3,4-Trimethylpentane
Isobutane	<i>n</i> -Undecane
Isopentane	<i>o</i> -Xylene
Isoprene	<i>m/p</i> -Xylene (combined)

1 ppm in nitrogen, 104 liters @ 1,800 psi
cat.# 34420 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 26368 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (PI-marked Cylinder)
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 34420-PI (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psi
cat.# 34429 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 26369 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (PI-marked Cylinder)
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 34429-PI (ea.)

No data pack available.

Japan Calibration Mix (9 components)

Acrylonitrile	Dichloromethane
Benzene	Tetrachloroethylene
1,3-Butadiene	Trichloroethylene
Chloroform	Vinyl chloride
1,2-Dichloroethane	

1 ppm in nitrogen, 104 liters @ 1,800 psi
cat.# 34418 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 26367 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (PI-marked cylinder)
Blend tolerance: ±10%; Analytical accuracy: ±5%
cat.# 34418-PI (ea.)

No data pack available.

Custom Gas Calibration Standards Quote

www.restek.com/customgas



Ozone Precursor/PAMS Mix

(57 components at EPA concentrations: ppbC)

Acetylene	40	Isopropylbenzene	40
Benzene	30	Methylcyclohexane	30
<i>n</i> -Butane	40	Methylcyclopentane	25
1-Butene	30	2-Methylheptane	25
<i>cis</i> -2-Butene	35	3-Methylheptane	25
<i>trans</i> -2-Butene	25	2-Methylhexane	25
Cyclohexane	40	3-Methylhexane	25
Cyclopentane	20	2-Methylpentane	20
<i>n</i> -Decane	30	3-Methylpentane	40
<i>m</i> -Diethylbenzene	40	<i>n</i> -Nonane	25
<i>p</i> -Diethylbenzene	25	<i>n</i> -Octane	30
2,2-Dimethylbutane	40	<i>n</i> -Pentane	25
2,3-Dimethylbutane	50	1-Pentene	25
2,3-Dimethylpentane	50	<i>cis</i> -2-Pentene	35
2,4-Dimethylpentane	40	<i>trans</i> -2-Pentene	25
<i>n</i> -Dodecane	40	Propane	40
Ethane	25	<i>n</i> -Propylbenzene	30
Ethylbenzene	25	Propylene	25
Ethylene	20	Styrene	40
<i>m</i> -Ethyltoluene	25	Toluene	40
<i>o</i> -Ethyltoluene	30	1,2,3-Trimethylbenzene	25
<i>p</i> -Ethyltoluene	40	1,2,4-Trimethylbenzene	40
<i>n</i> -Heptane	25	1,3,5-Trimethylbenzene	25
<i>n</i> -Hexane	30	2,2,4-Trimethylpentane	30
1-Hexene	60	2,3,4-Trimethylpentane	25
Isobutane	25	<i>n</i> -Undecane	30
Isopentane	40	<i>o</i> -Xylene	25
Isoprene	40	<i>m/p</i> -Xylene (combined)	40

20-60 ppbC (parts per billion expressed as carbon) in nitrogen, 104 liters @ 1,800 psi
cat.# 34445 (ea.)

20-60 ppbC (parts per billion expressed as carbon) in nitrogen, 110 liters @ 1,800 psi
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 26370 (ea.)

20-60 ppbC (parts per billion expressed as carbon) in nitrogen, 110 liters @ 1,800 psi (PI-marked Cylinder)
Blend tolerance: ±20%; Analytical accuracy: ±10%
cat.# 34445-PI (ea.)

No data pack available.

please note

Gas standards are subject to hazardous materials shipping fees by most freight carriers. All calibration gas standards are nonreturnable due to DOT hazardous shipping requirements.

Sulfur 5-Component Mix (5 components)

Stability is 12 months from date of manufacture.
 +/- 10% accuracy.

Carbonyl sulfide	Hydrogen sulfide
Dimethyl sulfide	Methyl mercaptan
Ethyl mercaptan	

1 ppm in nitrogen, 110 liters @ 1,800 psi
 cat.# 34561 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34561-PI (ea.)

BTEX Gas Mix (6 components)

Benzene (71-43-2)	<i>m</i> -Xylene (108-38-3)
Ethylbenzene (100-41-4)	<i>o</i> -Xylene (95-47-6)
Toluene (108-88-3)	<i>p</i> -Xylene (106-42-3)

1 ppm in nitrogen, 104 liters @ 1,800 psi
 cat.# 34414 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi
 cat.# 26361 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked cylinder)
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34414-PI (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psi
 cat.# 34428 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi
 Blend tolerance: ±20%; Analytical accuracy: ±10%
 cat.# 26362 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked cylinder)
 Blend tolerance: ±20%; Analytical accuracy: ±10%
 cat.# 34428-PI (ea.)

No data pack available.

BTEX and MTBE Gas Mix (7 components)

Benzene	<i>m</i> -Xylene
Ethylbenzene	<i>o</i> -Xylene
Methyl <i>tert</i> -butyl ether (MTBE)	<i>p</i> -Xylene
Toluene	

1 ppm in nitrogen, 104 liters @ 1,800 psi
 cat.# 34541 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 26363 (ea.)

1 ppm in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
 Blend tolerance: ±20%; Analytical accuracy: ±10%
 cat.# 34541-PI (ea.)

100 ppb in nitrogen, 104 liters @ 1,800 psi
 cat.# 34542 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi
 Blend tolerance: ±20%; Analytical accuracy: ±10%
 cat.# 26364 (ea.)

100 ppb in nitrogen, 110 liters @ 1,800 psi (Pi-marked Cylinder)
 Blend tolerance: ±10%; Analytical accuracy: ±5%
 cat.# 34542-PI (ea.)

No data pack available.




2nd Source TO-14A/TO-15 Gas Calibration Standards

- Standards from TWO manufacturers provide second source on one order.
- 12-month stability in transportable cylinders.
- Drop-shipped for fast delivery and maximum shelf life.

A. Spectra (Linde) 104 L Cylinders
B. Scotty (Air Liquide) 110 L Cylinders
C. Scotty (Air Liquide) 110 L Cylinders (Pi-marked Cylinders for EU Regulations)

See pages 452–453 for cylinder and regulator information.
www.restek.com/air

Reference Standards Search

Search by compound name, synonym, or CAS #.

www.restek.com/reference



Natural Gas and Refinery Gas Standards

- Each available in three varying concentrations.
- Mini-regulator designed specially for these standards.

Natural Gas Standards

Available in three mixes, from lean to rich. Each has an extended list of C6+ components.

	Natural Gas Standard #1 cat.# 34438, ea. % each compound*	Natural Gas Standard #2 cat.# 34439, ea. % each compound*	Natural Gas Standard #3 cat.# 34440, ea. % each compound*
nitrogen	1.000	2.500	5.000
carbon dioxide	0.500	1.000	1.500
methane UHP	94.750	85.250	70.000
ethane UHP	2.000	5.000	9.000
propane	0.750	3.000	6.000
isobutane	0.300	1.000	3.000
<i>n</i> -butane	0.300	1.000	3.000
isopentane	0.150	0.500	1.000
<i>n</i> -pentane	0.150	0.500	1.000
hexanes plus	0.100	0.250	0.500
Concentration	mole	mole	mole
Volume	13.16 L @ 200 psig (1,379 kPa)	13.16 L @ 200 psig (1,379 kPa)	5.5 L @ 75 psig (517 kPa)
Ideal Heating Value (Dry BTU/SCF)	1,048 gross	1,142 gross	1,317 gross

Ideal Heating Value: Dry BTU/SCF @ 14.696 psia & 60 °F.

*Precise concentrations are provided on the data sheet included with each cylinder and may vary slightly from those listed here.

Refinery Gas Standards

Available in three mixes with varying C5 unsaturates or extended C6+ components.

	Refinery Gas Standard #1 cat.# 34441, ea. % each compound*	Refinery Gas Standard #2 cat.# 34442, ea. % each compound*	Refinery Gas Standard #5 cat.# 34443, ea. % each compound*
hydrogen	40.750	12.500	12.500
argon	0.500	1.000	1.000
nitrogen	4.000	37.200	37.200
carbon monoxide	1.000	1.000	1.000
carbon dioxide	3.000	3.000	3.000
methane	8.500	5.000	5.000
ethane	6.000	4.000	4.000
ethylene	2.000	2.000	2.000
acetylene	—	1.000	1.000
propane	7.000	6.000	6.000
propylene	3.000	3.000	3.000
propadiene	0.850	1.000	1.000
cyclopropane	—	0.040	—
isobutane	6.000	5.000	5.000
<i>n</i> -butane	4.000	4.000	4.000
isobutylene	2.000	1.000	1.000
1,3 butadiene	3.000	3.000	3.000
<i>cis</i> -2-butene	2.000	2.000	2.000
<i>trans</i> -2-butene	2.000	3.000	3.000
1-butene	2.000	2.000	2.000
2-methyl-2-butene	—	0.200	0.200
isopentane	1.000	1.000	1.000
<i>n</i> -pentane	1.000	1.000	1.000
<i>cis</i> -2-pentene	—	0.400	0.400
<i>trans</i> -2-pentene	—	0.160	0.200
pentene-1	—	0.400	0.400
<i>n</i> -hexane	0.500	0.100	—
hexanes plus	—	—	0.100
Concentration	mole	mole	mole
Volume	5.2 L @ 70 psig (483 kPa)	4.9 L @ 60 psig (414 kPa)	4.6 L @ 60 psig (414 kPa)

*Precise concentrations are provided on the data sheet included with each cylinder and may vary slightly from those listed here.

please note

Gas standards on this page are not available in Pi-marked cylinders for EU countries.



cylinder design

DCG Partnership Cylinders:

Size: 7.6 x 24 cm
Connection: CGA-170/110
U.S. DOT Specs: DOT-4B-240ET

Please note: This cylinder is not approved for use in Canada.

also available

See page 453 for regulators.





Scotty/Air Liquide Transportable Pure Gases and Mixtures
in 14 L, 48 L, and 110 L Sizes

We offer a wide range of Scotty/Air Liquide transportable gases, from pure gases for purging or calibrating to multicomponent mixes, which are ideal for peak identification work.

The 14 L container has a CGA 160 connection for more precise integration with analytical systems. The 48 L cylinder has a CGA 165 connection and can deliver large volumes of sample. The 110 L cylinder has a CGA 180 connection.

See pages 452–453 for cylinder and regulator information.

NOTE: Scotty 14 and Scotty 48 cylinders are not approved for use in Canada.

Description	Product Grade	Shelf Life	Scotty 14 (14 L) cat.#	Scotty 48 (48 L) cat.#	Scotty 110 (110 L) cat.#
Pure Gases					
Air, zero	THC < 1 ppm	—	34448	34449	34449-PI
Argon	99.995%	—	34457	—	34457-PI
Carbon dioxide	99.80%	—	34451	34452	34452-PI
Hydrogen	99.99%	—	34453	—	34453-PI
Methane	99.00%	—	34454	—	34454-PI
Oxygen	99.60%	—	34455	—	—
Two-Component Mixtures					
Benzene in air (1 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	—	34458	34458-PI
Benzene in air (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	—	34459	34459-PI
1,3-Butadiene in nitrogen (10 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34460	34461	34461-PI
Carbon dioxide in helium (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34462	—	34462-PI
Carbon dioxide in nitrogen (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34463	34464	34464-PI
Carbon dioxide in nitrogen (1,000 ppm)	Blend tolerance: ±5%; Analytical accuracy: ±2%	3 yr	34465	34466	34466-PI
Ethylene in air (8–10 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34467	34468	34468-PI
Ethylene in helium (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34489	—	34489-PI
Hydrogen in helium (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34469	—	34469-PI
Hydrogen in nitrogen (1%)	Blend tolerance: ±5%; Analytical accuracy: ±2%	3 yr	34471	34472	34472-PI
Hydrogen in nitrogen (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34473	34474	34474-PI
Methane in helium (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34476	34477	34477-PI
Methane in nitrogen (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34478	—	34478-PI
Methane in nitrogen (1%)	Blend tolerance: ±5%; Analytical accuracy: ±2%	3 yr	34482	34483	34483-PI
Nitrogen in helium (100 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34479	—	34479-PI
Nitrous oxide in nitrogen (1 ppm)	Blend tolerance: ±10%; Analytical accuracy: ±5%	3 yr	34484	34485	34485-PI

Description	Product Grade	Shelf Life	Scotty 14 (14 L) cat.#	Scotty 48 (48 L) cat.#	Scotty 110 (110 L) cat.#
Two-Component Mixtures					
Oxygen in helium (100 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34480	—	34480-PI
Oxygen in nitrogen (2%)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34487	34488	34488-PI
Oxygen in nitrogen (6%)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34491	34492	34492-PI
1,1,1-Trichloroethane in nitrogen (10 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	—	34493	34493-PI
Trichloroethylene in nitrogen (10 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34494	34495	34495-PI
Vinyl chloride in nitrogen (1 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34496	34497	34497-PI
Vinyl chloride in nitrogen (10 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34498	34499	34499-PI
Vinyl chloride in nitrogen (50 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34500	—	34500-PI
Vinyl chloride in nitrogen (100 ppm)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34501	—	34501-PI
Vinyl chloride in nitrogen (1,000 ppm)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34502	—	34502-PI
Multi-Component Mixtures					
Carbon monoxide, carbon dioxide, hydrogen, and oxygen in nitrogen (0.5% each)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34504	34505	34505-PI
Carbon monoxide, carbon dioxide, hydrogen, and oxygen in nitrogen (1% each)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34507	34508	34508-PI
Carbon monoxide, carbon dioxide, methane, ethane, ethylene, and acetylene in nitrogen (1% each)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	—	34511	34511-PI
Carbon monoxide, carbon dioxide, nitrogen, and oxygen (5% each), and methane and hydrogen (4% each) in helium	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34512	—	34512-PI*
Carbon monoxide (7%), carbon dioxide (15%), and oxygen (5%) in nitrogen	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34514	—	34514-PI
Carbon monoxide (7%), oxygen (4%), carbon dioxide (15%), and methane (4.5%) in nitrogen	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34515	34516	34516-PI
C1–C6 <i>n</i> -Paraffins: methane, ethane, propane, butane, pentane, hexane in nitrogen (15 ppm each)	Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$	3 yr	34518	34519	34519-PI
C1–C6 <i>n</i> -Paraffins: methane, ethane, propane, butane, pentane, hexane in helium (100 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34521	34522	34522-PI
C1–C6 <i>n</i> -Paraffins: methane, ethane, propane, butane, pentane, hexane in helium (1,000 ppm each)	Blend tolerance: $\pm 5\%$; Analytical accuracy: $\pm 2\%$	3 yr	34524	34525	34525-PI
C1–C6 <i>n</i> -Paraffins: methane, ethane, propane, butane, pentane, hexane in nitrogen (100 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34527	34528	34528-PI
C2–C6 Olefins: ethylene, propylene, 1-butene, 1-pentene, 1-hexene in helium (100 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34529	34530	34530-PI
C2–C6 Olefins: ethylene, propylene, 1-butene, 1-pentene, 1-hexene in nitrogen (100 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	34531	34532	34532-PI
Branched Paraffins: 2,2-dimethylbutane, 2,2-dimethylpropane, isobutane, 2-methylbutane, 2-methylpentane, 3-methylpentane in nitrogen (15 ppm each)	Blend tolerance: $\pm 20\%$; Analytical accuracy: $\pm 10\%$	3 yr	34534	—	34534-PI
Methane, ethane, ethylene, acetylene, propane, propylene, <i>n</i> -butane, propyne in nitrogen (15 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	—	34537	34537-PI
<i>n</i> -butane, isobutane, <i>cis</i> -2-butene, <i>trans</i> -2-butene, 1-butene, iso-butylene, 1,3-butadiene, ethyl acetylene in nitrogen (15 ppm each)	Blend tolerance: $\pm 10\%$; Analytical accuracy: $\pm 5\%$	3 yr	—	34539	34539-PI

*Cat.# 34512-PI is 30 L at 500 psig (34.5 bar).

Our Pi-marked gas standards from Scott/Air Liquide meet the requirements of the Transportable Pressure Equipment Directive (TPED) implemented in 2001 that regulates the safe transport of pressurized containers used throughout the European community.

All calibration gas standards are nonreturnable due to DOT hazardous shipping requirements.





DCG Partnership Cylinders:
 Size: 7.6 x 24 cm
 Connection: CGA-170/110
 U.S. DOT Specs: DOT-4B-240ET

Please note: This cylinder is not approved for use in Canada.

Recommended regulator:
 cat.# 22032



Scotty® (Air Liquide) 110 L (Pi-marked Cylinders for EU Regulations):
 Aluminum construction
 Size: 8.3 x 29.5 cm
 Volume/Pressure:
 110 liters of gas @ 1,800 psi
 Outlet Fitting: CGA-180
 Weight: 2.2 lb/1 kg
 DOT Specifications: 3AL2216

Recommended regulators:
 cat.# 26371, 26372, 21572, or 21572-R100



Spectra (Linde) 104 L:
 Aluminum construction
 Size: 8 x 24 cm
 Volume/Pressure:
 104 liters of gas @ 1,800 psi
 Outlet Fitting: CGA-180
 Weight: 1.5 lb/0.7 kg

Recommended regulators:
 cat.# 21572, 21572-R100, 26371, or 26372



Scotty® (Air Liquide) 110 L
 Aluminum construction
 Size: 8.3 x 29.5 cm
 Volume/Pressure:
 110 liters of gas @ 1,800 psi
 Outlet Fitting: CGA-180
 Weight: 2.2 lb/1 kg
 DOT Specifications: 3AL2216

Recommended regulators:
 cat.# 26371, 26372, 21572, or 21572-R100



Scotty® (Air Liquide) 14 L
 Contents: 14 liters
 Pressure: 240 psig (17 bar)
 Outlet Fitting: CGA-160
 Weight: 1.5 lb/0.7 kg
 Dimensions: 3" diameter x 11" height (7.6 x 28 cm)
 DOT Specifications: 4B240

Please note: This cylinder is not approved for use in Canada.

Recommended regulators:
 cat.# 22690



Scotty® (Air Liquide) 48 L
 Contents: 48 liters
 Pressure: 300 psig (21 bar)
 Outlet Fitting: CGA-165
 Weight: 1.75 lb/0.8 kg
 Dimensions: 4" diameter x 16 1/4" height (10.2 x 41 cm)
 DOT Specifications: 39 NRC

Please note: This cylinder is not approved for use in Canada.

Recommended regulators:
 cat.# 22691



24129

Small Cylinder Stand

- Supports and stabilizes disposable gas cylinders.
- Fits cylinders up to 3 3/8" (8 cm) in diameter.
- Adjustable screw secures cylinder in place.

This cylinder stand is designed to support small-diameter cylinders, such as 104 L and 110 L disposable cylinders. It is a simple, safe, and economical way to stabilize the position of small cylinders, while keeping them within close proximity. The stand is constructed of heavyweight painted steel and includes an adjustable screw for safely securing cylinders.

Description	qty.	cat.#
Small Cylinder Stand	ea.	24129