

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 (4-Bromofluorobenzene) | 1,4-Difluorobenzene |
| 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 p.

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

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.

www.restek.com/air

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 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: ±10%; Analytical accuracy: ±5%

cat.# 26344 (ea.)

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

Blend tolerance: ±10%; Analytical accuracy: ±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: ±20%; Analytical accuracy: ±10%

cat.# 26345 (ea.)

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

Blend tolerance: ±20%; Analytical accuracy: ±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: ±10%; Analytical accuracy: ±5%

cat.# 26357 (ea.)

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

Blend tolerance: ±10%; Analytical accuracy: ±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: ±20%; Analytical accuracy: ±10%

cat.# 26358 (ea.)

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

Blend tolerance: ±20%; Analytical accuracy: ±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 |
| 1,1-Dichloroethene | 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-Dichloropropane |
| <i>trans</i> -1,3-Dichloropropene | <i>cis</i> -1,3-Dichloropropene |
| 1,4-Dioxane | <i>trans</i> -1,3-Dichloropropene |
| Ethanol* | 1,4-Dioxane |
| Ethyl acetate | Ethanol* |
| Ethyl benzene | Ethyl acetate |
| Ethylene dibromide (1,2-dibromoethane) | Ethyl benzene |
| | Ethylene dibromide (1,2-dibromoethane) |

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

cat.# 34436 (ea.)

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

Blend tolerance: ±10%; Analytical accuracy: ±5%

cat.# 26359 (ea.)

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

Blend tolerance: ±10%; Analytical accuracy: ±5%

cat.# 34436-PI (ea.)

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

Blend tolerance: ±20%; Analytical accuracy: ±10%

cat.# 26360 (ea.)

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

Blend tolerance: ±20%; Analytical accuracy: ±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) |
| Bromofom | Heptane |
| Bromomethane | Hexachloro-1,3-butadiene |
| 1,3-Butadiene | Hexane |
| <i>n</i> -Butane | 2-Hexanone (MBK) |
| 2-Butanone (MEK) | <i>tert</i> -Butyl alcohol |
| <i>tert</i> -Butyl alcohol | 4-Methyl-2-pentanone (MIBK) |
| Carbon disulfide* | Methylene chloride |
| Carbon tetrachloride | Methyl <i>tert</i> -butyl ether (MTBE) |
| Chlorobenzene | Methyl methacrylate |
| Chloroethane | Naphthalene |
| Chloroform | <i>n</i> -Nonane |
| Chloromethane | <i>n</i> -Pentane |
| 3-Chloroprene | 2-Propanol |
| 2-Chlorotoluene | <i>n</i> -Propylbenzene |
| Cumene | Propylene |
| Cyclohexane | Styrene |
| Dibromochloromethane | 1,1,2,2-Tetrachloroethane |
| 1,2-Dichlorobenzene | Tetrachloroethene |
| 1,3-Dichlorobenzene | Tetrahydrofuran |
| 1,4-Dichlorobenzene | Toluene |
| 1,1-Dichloroethane | 1,2,4-Trichlorobenzene |
| 1,2-Dichloroethane | 1,1,1-Trichloroethane |
| 1,1-Dichloroethene | 1,1,2-Trichloroethane |
| <i>cis</i> -1,2-Dichloroethene | Trichloroethene |
| <i>trans</i> -1,2-Dichloroethene | 1,2,4-Trimethylbenzene |
| 1,2-Dichloropropane | 1,3,5-Trimethylbenzene |
| <i>cis</i> -1,3-Dichloropropene | 2,2,4-Trimethylpentane |
| <i>trans</i> -1,3-Dichloropropene | Vinyl acetate |
| 1,4-Dioxane | Vinyl bromide |
| 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 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) |
| Bromofom | 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.

www.restek.com/air

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 psig (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.

Reference Standards Search

Search by compound name, synonym, or CAS #.

www.restek.com/reference



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

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



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 |