





## 1-BUTENE (C4H8): A colorless, flammable, liquefied gas with a slight aromatic odor

| Purity:                 | Grade 2        | Grade 3          | Grade 3.5            |
|-------------------------|----------------|------------------|----------------------|
| <b>Specifications:</b>  | <b>99%</b>     | <b>99.9%</b>     | <b>99.95%</b>        |
| Other Hydrocarbons      | < 1%           | < 0.1%           | < 500 ppmv           |
| Sulfure                 | < 2 ppmv       | < 2 ppmv         | < 2 ppmv             |
| Moisture                | < 10 ppmv      | < 5 ppmv         | < 5 ppmv             |
| <b>Total Impurities</b> | <b>&lt; 1%</b> | <b>&lt; 0.1%</b> | <b>&lt; 500 ppmv</b> |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 Ton       | 540               |
| LP30          | 128               |
| LP15          | 75                |
| LP05          | 25                |
| LP01          | 6                 |
| 49L/Size 300  | 55                |
| 44L/Size 200  | 50                |
| 16L/Size 80   | 18                |
| 7L/Size 35    | 8                 |

### Technical Data:

Mol. Wt: 56.11  
Sp. Volume: 6.7 cu.ft/lb  
Pressure @ 70°F: 23.5 psig  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Butylene  
Hazard Class: 2.1  
DOT No.: UN 1012  
DOT Label: Flammable Gas  
CAS No.: 106-98-9

1-BUTENE-C4H8



## AMMONIA (NH<sub>3</sub>): A colorless alkaline gas with a characteristic sharp smell

| Purity:                | Grade 5                      | Grade 5.5       | Grade 6.4         |
|------------------------|------------------------------|-----------------|-------------------|
| <b>Specifications:</b> | <b>99.999%</b>               | <b>99.9995%</b> | <b>99.99994%</b>  |
| Nitrogen               | < 5 ppmv                     | < 1.5 ppmv      |                   |
| Oxygen                 |                              | < 0.5 ppmv      | (+Ar): < 100 ppbv |
| Carbon Monoxide        | < 2 ppmv                     | < 0.1 ppmv      | < 50 ppbv         |
| Carbon Dioxide         |                              | < 0.4 ppmv      | < 100 ppbv        |
| Hydrogen               |                              |                 | < 100 ppbv        |
| Methane                | < 2 ppmv                     | < 0.1 ppmv      | < 50 ppbv         |
| Water                  | (+O <sub>2</sub> ): < 5 ppmv | < 2 ppmv        | < 200 ppbv        |

**\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.**

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1 Ton         | 500               |
| 49L/Size 300  | 55                |
| 44L/Size 200  | 50                |

*\*RFO available*

### Technical Data:

Mol. Wt: 17.03  
Sp. Volume: 22.6 cu.ft/lb  
Pressure @ 70°F: 113.9 psig  
Valve Outlet: CGA 660  
DISS 720

### Shipping Information:

DOT Name: Ammonia  
Hazard Class: 2.2  
DOT No.: UN 1005  
DOT Label: Non-Flammable Gas  
CAS No.: 7664-41-7

# AMMONIA (NH<sub>3</sub>)

## ARSINE (AsH<sub>3</sub>): A colorless, flammable, non-irritating toxic gas with a mild garlic odor

| Purity:                | Grade 5.5       | Grade 6         | Grade 6.5        |
|------------------------|-----------------|-----------------|------------------|
| <b>Specifications:</b> | <b>99.9995%</b> | <b>99.9999%</b> | <b>99.99995%</b> |
| Water                  | < 2 ppmv        | < 350 ppbv      | < 100 ppbv       |
| Nitrogen               | < 2 ppmv        | < 250 ppbv      | < 50 ppbv        |
| Oxygen                 | < 1 ppmv        | < 40 ppbv       | < 20 ppbv        |
| Carbon Dioxide         | < 0.5 ppmv      | < 40 ppbv       | < 10 ppbv        |
| Carbon Monoxide        | < 0.1 ppmw      | < 10 ppbv       | < 10 ppbv        |
| Methane                | < 0.5 ppmv      |                 |                  |
| C1 - C2                |                 | < 500 ppbv      | < 100 ppbv       |
| Argon                  |                 | < 50 ppbv       | < 50 ppbv        |
| Germane                |                 | < 50 ppbv       | < 50 ppbv        |
| Hydrogen Sulfide       |                 |                 | < 50 ppbv        |
| Silane                 |                 |                 | < 50 ppbv        |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 55                |
| 265 AL        | 60/40             |
| 150 AL        | 28                |

*\*RFO available*

#### Technical Data:

Mol. Wt: 77.95  
Sp. Volume: 5.0 cu.ft/lb  
Pressure @ 70°F: 204.6 psig  
Valve Outlet: CGA 350  
DISS 632

#### Shipping Information:

DOT Name: Arsine  
Hazard Class: 2.3  
DOT No.: UN 2188  
DOT Label: Poison Gas/Inhalation Hazard, Flammable Gas  
CAS No.: 7784-42-1

# ARSINE (AsH<sub>3</sub>)



## BORON TRICHLORIDE (BCl<sub>3</sub>): A colorless, corrosive gas. Shipped as a liquefied gas

| Purity:                | Grade 4.5      | Grade 5        | Grade 5.5       |
|------------------------|----------------|----------------|-----------------|
| <b>Specifications:</b> | <b>99.995%</b> | <b>99.999%</b> | <b>99.9995%</b> |
| Oxygen                 | < 9 ppmv       | < 1 ppmv       | < 0.5 ppmv      |
| Nitrogen               | < 30 ppmv      | < 4 ppmv       | < 0.5 ppmv      |
| Carbon Dioxide         | < 5 ppmv       | < 2 ppmv       | < 0.5 ppmv      |
| Carbon Monoxide        | < 3 ppmv       | < 0.5 ppmv     | < 0.3 ppmv      |
| Methane                | < 1 ppmv       | < 0.5 ppmv     | < 0.5 ppmv      |
| Chlorine               | < 1 ppmv       | < 1 ppmv       | < 0.1 ppmv      |
| Phosgene               |                |                | < 0.1 ppmv      |
| Hydrogen Chloride      |                |                | < 1 ppmv        |
| Silicon Tetrachloride  |                |                | < 2 ppmv        |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 110/100/70/40     |
| 2L/Size 10    | 5                 |

### Technical Data:

Mol. Wt: 117.17  
Sp. Volume: 3.3 cu.ft/lb  
Pressure @ 70°F: 4.4 psig  
Valve Outlet: CGA 660  
DISS 634

### Shipping Information:

DOT Name: Boron Trichloride  
Hazard Class: 2.3  
DOT No.: UN 1741  
DOT Label: Poison Gas/Inhalation Hazard, Corrosive Gas  
CAS No.: 10294-34-5

# BORON TRICHLORIDE (BCl<sub>3</sub>)



## BORON TRIFLUORIDE (BF<sub>3</sub>): A colorless, toxic gas. Shipped as a compressed gas.

|                        |                  |
|------------------------|------------------|
| <b>Purity:</b>         | <b>Grade 4.5</b> |
| <b>Specifications:</b> | <b>99.995%</b>   |
| Oxygen+Nitrogen+Argon  | < 10 ppmv        |
| Carbon Dioxide         | < 10 ppmv        |
| Sulfur Dioxide         | < 10 ppmv        |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 2L/Size 10    | 0.88              |
| 2L/Size 10    | 0.39              |
| LB            | 0.077             |

### Technical Data:

Mol. Wt: 67.81  
Specific Volume: 5.6 cu.ft/lb  
Pressure @ 70°F: 700/400  
Valve Outlet: CGA 330  
DISS 642

### Shipping Information:

DOT Name: Boron Trifluoride, Compressed  
Hazard Class: 2.3  
DOT No.: UN 1008  
DOT Label: Poison Gas/Inhalation Hazard  
CAS No.: 7637-07-02

# BORON TRIFLUORIDE (BF<sub>3</sub>)



**CARBON MONOXIDE (CO): A toxic, flammable, colorless, odorless gas.**

| Purity:          | Grade 2.5   | Grade 3.0   | Grade 4.0  | Grade 4.7 | Grade 5.0 |
|------------------|-------------|-------------|------------|-----------|-----------|
| Specifications:  | 99.5%       | 99.9%       | 99.99%     | 99.997%   | 99.999%   |
| Nitrogen         | < 4500 ppmv | < 900 ppmv  | < 80 ppmv  | < 20 ppmv | < 5 ppmv  |
| Oxygen           | < 10 ppmv   | < 10 ppmv   | < 5 ppmv   | < 3 ppmv  | < 2 ppmv  |
| Carbon Dioxide   | < 100 ppmv  | < 50 ppmv   | < 10 ppmv  | < 5 ppmv  | < 2 ppmv  |
| Methane          | < 100 ppmv  | < 50 ppmv   | < 10 ppmv  | < 5 ppmv  | < 2 ppmv  |
| Moisture         | < 5 ppmv    | < 5 ppmv    | < 4 ppmv   | < 3 ppmv  | < 2 ppmv  |
| Total Impurities | < 5000 ppmv | < 1000 ppmv | < 100 ppmv | < 30 ppmv | < 10 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed gas phase.*

| Cylinder Size | Fill Weight (lbs) | Fill Volume (scf) |
|---------------|-------------------|-------------------|
| 49L/Size 300  | 17.2              | 237               |
| 44L/Size 200  | 12.9              | 177               |
| 16L/Size 80   | 4.7               | 64                |
| 7L/Size 35    | 2.3               | 32                |
| 29AL          | 10.4              | 143               |

**Technical Data:**

Mol. Wt: 28.01  
Sp. Volume: 13.8 cf/lb  
Flammability Limits: 12.5 - 74.0% in Air  
Valve Outlet: CGA 350  
LB CGA 170

**Shipping Information:**

DOT Name: Carbon Monoxide, Compressed  
Hazard Class: 2.3  
DOT No.: UN 1016  
DOT Label: Inhalation Hazard and Flammable Gas  
CAS No.: 630-08-0



## CARBONYL SULFIDE (COS): A colorless, poisonous, flammable gas. Shipped as a liquefied gas

| Purity:                | Grade 3      | Grade 4       |
|------------------------|--------------|---------------|
| <b>Specifications:</b> | <b>99.9%</b> | <b>99.99%</b> |
| Nitrogen               | < 300 ppmv   | < 20 ppmv     |
| Oxygen                 | < 100 ppmv   | < 10 ppmv     |
| Carbon Dioxide         | < 300 ppmv   | < 20 ppmv     |
| Carbon Monoxide        | < 100 ppmv   | < 10 ppmv     |
| Methane                |              | < 5 ppmv      |
| Water                  | < 100 ppmv   | < 10 ppmv     |
| Hydrogen Sulfide       | < 100 ppmv   | < 10 ppmv     |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 55                |

### Technical Data:

Mol. Wt: 60.08  
Sp. Volume: 6.44 cu.ft/lb  
Pressure @ 70°F: 152.52 psig  
Valve Outlet: CGA 330

### Shipping Information:

DOT Name: Carbonyl Sulfide  
Hazard Class: 2.1, 2.3  
DOT No.: UN 2204  
DOT Label: Poison Gas, Flammable Gas  
CAS No.: 463-58-1

# CARBONYL SULFIDE (COS)





**CHLORINE (Cl<sub>2</sub>): A corrosive gas with a greenish-yellow color. Shipped as a liquefied gas.**

| Purity:                | Grade 4       | Grade 5        | Grade 5.5       |
|------------------------|---------------|----------------|-----------------|
| <b>Specifications:</b> | <b>99.99%</b> | <b>99.999%</b> | <b>99.9995%</b> |
| Oxygen                 | < 50 ppmv     | < 1 ppmv       | < 1 ppmv        |
| Nitrogen               | < 50 ppmv     | < 2 ppmv       | < 2 ppmv        |
| Carbon Dioxide         | < 30 ppmv     | < 4 ppmv       | < 3 ppmv        |
| Carbon Monoxide        | < 5 ppmv      | < 0.5 ppmv     | < 0.5 ppmv      |
| Methane                | < 1 ppmv      | < 0.1 ppmv     | < 0.1 ppmv      |
| Water                  |               |                | < 1 ppmv        |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1 Ton         | 1100              |
| 44L/Size 200  | 110/100/70        |

**Technical Data:**

Mol. Wt: 71.91  
Sp. Volume: 5.4 cu.ft/lb  
Pressure @ 70°F: 85.3 psig  
Valve Outlet: CGA 660  
DISS 728

**Shipping Information:**

DOT Name: Chlorine  
Hazard Class: 2.3  
DOT No.: UN 1017  
DOT Label: Inhalation Hazard, Corrosive Gas  
CAS No.: 7782-50-5

**CHLORINE (Cl<sub>2</sub>)**



## CIS-2-BUTENE (C<sub>4</sub>H<sub>8</sub>): A colorless, flammable, liquefied gas with a slight aromatic odor

|                        |                |
|------------------------|----------------|
| <b>Purity:</b>         | <b>Grade 2</b> |
| <b>Specifications:</b> | <b>99.0%</b>   |
| Other Hydrocarbons     | < 1%           |
| Sulfur                 | < 1 ppmv       |
| Moisture               | < 5 ppmv       |
| Total Impurities       | < 1%           |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed liquid phase.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 570               |
| LP30          | 136               |
| LP15          | 81                |
| LP05          | 27                |
| LP01          | 6                 |
| 49L/Size 300  | 55                |
| 44L/Size 200  | 50                |
| 16L/Size 80   | 18                |
| 7L/Size 35    | 8                 |

### Technical Data:

Mol. Wt: 56.11  
Sp. Volume: 6.7 cu.ft/lb  
Pressure @ 70°F: 13 psig  
Flammability Limits: 1.6 - 9.7% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Butylene  
Hazard Class: 2.1  
DOT No.: UN 1012  
DOT Label: Flammable Gas  
CAS No.: 590-18-1



## DEUTERIUM: A colorless, odorless, flammable, stable isotope of hydrogen

| Purity:                | Grade 4.5     | Grade 5.0   |
|------------------------|---------------|-------------|
| Specifications:        | 99.995%       | 99.999%     |
| Nitrogen               | < 5 ppmv      | < 1 ppmv    |
| Oxygen                 | < 1 ppmv      | < 1 ppmv    |
| Moisture/Deuterated Wa | < 5 ppmv      | < 1 ppmv    |
| Carbon Dioxide         | < 2 ppmv      | < 1 ppmv    |
| Carbon Monoxide        | < 1 ppmv      | < 1 ppmv    |
| Deuterium Hydride      | < 5000 ppmv   | < 3000 ppmv |
| Hydrogen               | < 150 ppmv    | < 100 ppmv  |
| Hydrocarbons           | < 1 ppmv      | < 1 ppmv    |
| Tritium                | < 0.002 uCi/L |             |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (Itrs) |
|---------------|--------------------|
| 44L/Size 200  | 5000               |
| 16L/Size 80   | 1800               |
| 3L/Size 10    | 100                |

### Technical Data:

Mol. Wt: 4.03  
Valve Outlet: CGA 350

### Shipping Information:

DOT Name: Deuterium  
Hazard Class: 2.1  
DOT No.: UN 1957  
DOT Label: Flammable Gas  
CAS No.: 7782-39-0



## DIBORANE (B<sub>2</sub>H<sub>6</sub>): A colorless, flammable, toxic gas

|                                |                |
|--------------------------------|----------------|
| <b>Purity:</b>                 | <b>Grade 4</b> |
| <b>Specifications:</b>         | <b>99.99%</b>  |
| Oxygen                         | < 1 ppmv       |
| Nitrogen                       | < 10 ppmv      |
| Carbon Dioxide                 | < 5 ppmv       |
| Methane                        | < 5 ppmv       |
| Hydrogen                       | < 500 ppmv     |
| Boron Trifluoride              | < 50 ppmv      |
| B <sub>5</sub> H <sub>9</sub>  | < 10 ppmv      |
| B <sub>4</sub> H <sub>10</sub> | < 180 ppmv     |
| B <sub>5</sub> H <sub>11</sub> | < 10 ppmv      |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| Size 200      | 43.8            |
| Size 35       | 7.3             |

### Technical Data:

Mol. Wt: 27.68  
Sp. Volume: 5 cu.ft/lb  
Valve Outlet: CGA 350  
DISS 632

### Shipping Information:

DOT Name: Diborane, Compressed  
Hazard Class: 2.3  
DOT No.: UN 1911  
DOT Label: Inhalation Hazard Flammable Gas  
CAS No.: 19284-45-7

# DIBORANE (B<sub>2</sub>H<sub>6</sub>)



## DIFLUOROMETHANE/HALOCARBON 32 (CH<sub>2</sub>F<sub>2</sub>): A colorless, flammable gas with a slight ether-like odor

| Purity:                | Grade 3      | Grade 4       |
|------------------------|--------------|---------------|
| <b>Specifications:</b> | <b>99.9%</b> | <b>99.99%</b> |
| Nitrogen               | < 300 ppmv   | < 40 ppmv     |
| Oxygen                 | < 50 ppmv    | < 10 ppmv     |
| Carbon Dioxide         |              | < 5 ppmv      |
| Moisture               | < 100 ppmv   | < 5 ppmv      |
| Other Halocarbons      |              | < 60 ppmv     |
| Acidity                |              | < 0.1 ppm/w   |
| Other Organics         | < 700 ppmv   |               |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 65                |
| 16L/Size 80   | 25                |
| 7L/Size 35    | 15                |

### Technical Data:

Mol. Wt: 52.02  
Sp. Volume: 7.19 cu.ft/lb  
Pressure @ 70°F: 207 psig  
Valve Outlet: CGA 350  
DISS 724

### Shipping Information:

DOT Name: Difluoromethane  
Hazard Class: 2.1  
DOT No.: UN 3252  
DOT Label: Red, Flammable Gas  
CAS No.: 75-10-5

# DIFLUOROMETHANE/HALOCARBON 32 (CH<sub>2</sub>F<sub>2</sub>)



## DIMETHYLAMINE (C<sub>2</sub>H<sub>7</sub>N): a colorless, flammable liquefied gas with a characteristic fishy odor

|                   |           |
|-------------------|-----------|
| Purity (Minimum): | Grade 2.5 |
| Specifications:   | 99.5%     |

Chemically Pure

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| HT            | 550               |
| LP30          | 125               |

### Technical Data:

Mol. Wt: 45.0837  
Specific Volume: 8.58 cu.ft/lb  
Flammability Limits in Air: 2.8-14.4%  
Pressure @ 70°F: 26 psig  
Valve Outlet: CGA 705

### Shipping Information:

DOT Name: Dimethylamine, Anhydrous  
Hazard Class: 2.1  
DOT No.: UN 1032  
DOT Label: Flammable Gas  
CAS No.: 124-40-03

# DIMETHYLAMINE (C<sub>2</sub>H<sub>7</sub>N)

## ETHANE (C<sub>2</sub>H<sub>6</sub>): A flammable, colorless, odorless liquefied gas

| Purity:                   | Grade 2     | Grade 3     | Grade 4    | Grade 4.5 | Grade 5   | Grade 5.5 |
|---------------------------|-------------|-------------|------------|-----------|-----------|-----------|
| Specifications:           | 99.0%       | 99.9%       | 99.99%     | 99.995%   | 99.999%   | 99.9995%  |
| Nitrogen                  | < 500 ppmv  | < 100 ppmv  | < 10 ppmv  | < 5 ppmv  | < 3 ppmv  | < 1 ppmv  |
| Oxygen                    | < 200 ppmv  | < 20 ppmv   | < 4 ppmv   | < 2 ppmv  | < 1 ppmv  | < 1 ppmv  |
| Carbon Dioxide / Carbon I | < 200 ppmv  | < 10 ppmv   | < 8 ppmv   | < 4 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Other Hydrocarbons        | < 9000 ppmv | < 800 ppmv  | < 80 ppmv  | < 40 ppmv | < 6 ppmv  | < 3 ppmv  |
| Moisture                  | < 10 ppmv   | < 5 ppmv    | < 5 ppmv   | < 5 ppmv  | < 3 ppmv  | < 1 ppmv  |
| <b>Total Impurities</b>   | < 1%        | < 1000 ppmv | < 100 ppmv | < 50 ppmv | < 10 ppmv | < 5 ppmv  |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed liquid phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 49L/Size 300  | 40                |
| 44L/Size 200  | 32                |
| 16L/Size 80   | 12                |
| 7L/Size 35    | 5                 |

### Technical Data:

Mol. Wt: 30.07  
Sp. Volume: 12.8 cf/lb  
Pressure @ 70°F: 543 psig  
Flammability Limits: 3.0-12.5% in Air  
Valve Outlet: CGA 350  
LB CGA 170

### Shipping Information:

DOT Name: Ethane, Compressed  
Hazard Class: 2.1  
DOT No.: UN 1035  
DOT Label: Flammable Gas  
CAS No.: 78-84-0



## ETHYLENE (C<sub>2</sub>H<sub>4</sub>): A flammable, colorless gas with a characteristic sweet odor

| Purity:                 | Grade 2.5   | Grade 3     | Grade 3.5  | Grade 4    | Grade 4.5 | Grade 5   | Grade 5.5 |
|-------------------------|-------------|-------------|------------|------------|-----------|-----------|-----------|
| Specifications:         | 99.5%       | 99.9%       | 99.95%     | 99.99%     | 99.995%   | 99.999%   | 99.9995%  |
| Nitrogen                | < 100 ppmv  | < 100 ppmv  | < 50 ppmv  | < 5 ppmv   | < 5 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Oxygen                  | < 25 ppmv   | < 20 ppmv   | < 10 ppmv  | < 2 ppmv   | < 2 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Carbon Dioxide          | < 15 ppmv   | < 10 ppmv   | < 10 ppmv  | < 5 ppmv   | < 5 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Carbon Monoxide         | < 5 ppmv    | < 3 ppmv    |            | < 2 ppmv   | < 2 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Other Hydrocarbons      | < 4000 ppmv | < 800 ppmv  | < 400 ppmv | < 80 ppmv  | < 40 ppmv | < 8 ppmv  | < 4 ppmv  |
| Acetylene               | < 10 ppmv   | < 8 ppmv    | < 6 ppmv   | < 4 ppmv   | < 4 ppmv  | < 2 ppmv  | < 1 ppmv  |
| Moisture                | < 5 ppmv    | < 5 ppmv    | < 5 ppmv   | < 5 ppmv   | < 5 ppmv  | < 3 ppmv  | < 1 ppmv  |
| <b>Total Impurities</b> | < 5000 ppmv | < 1000 ppmv | < 500 ppmv | < 100 ppmv | < 50 ppmv | < 10 ppmv | < 5 ppmv  |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed gas phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 49L/Size 300  | 37                |
| 44L/Size 200  | 30                |
| 16L/Size 80   | 11                |
| 7L/Size 35    | 4                 |

### Technical Data:

Mol. Wt: 28.054  
Sp. Volume: 13.8 cu. ft/lb  
Flammability Limits: 2.7-36% in Air  
Valve Outlet: CGA 350  
LB CGA 170

### Shipping Information:

DOT Name: Ethylene, Compressed  
Hazard Class: 2.1  
DOT No.: UN 1962  
DOT Label: Flammable Gas  
CAS No.: 74-85-1

**ETHYLENE - C<sub>2</sub>H<sub>4</sub>**





## HELIUM (He): A colorless, odorless noble gas. Shipped as a compressed gas

| Purity:                | Grade 5        | Grade 6         |
|------------------------|----------------|-----------------|
| <b>Specifications:</b> | <b>99.999%</b> | <b>99.9999%</b> |
| Nitrogen               | < 3 ppmv       | < 400 ppbv      |
| Oxygen                 | < 2 ppmv       | < 50 ppbv       |
| Carbon Dioxide         | < 1 ppmv       | < 100 ppbv      |
| Carbon Monoxide        | < 1 ppmv       | < 50 ppbv       |
| Methane                | < 1 ppmv       | < 100 ppbv      |
| Water                  | < 3 ppmv       | < 200 ppbv      |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| Size 200      | 6910            |
| Size 35       | 880             |

### Technical Data:

Mol. Wt: 4.00  
Sp. Volume: 97.1 cu.ft/lb  
Pressure @ 70°F: 2000-2490  
Valve Outlet: CGA 580  
DISS 718

### Shipping Information:

DOT Name: Helium, Compressed  
Hazard Class: 2.2  
DOT No.: UN 1046  
DOT Label: Non-Flammable Gas  
CAS No.: 7440-59-7

# HELIUM (HE)



## Hexafluoro-1,3-butadiene (C4F6): a toxic, flammable, liquefied gas

| Purity:             | Grade 3    | Grade 4    |
|---------------------|------------|------------|
| Specifications:     | 99.9%      | 99.99%     |
| Nitrogen            | < 200 ppmv | < 40 ppmv  |
| Oxygen, Argon       | < 100 ppmv | < 10 ppmv  |
| Carbon Dioxide      | < 100 ppmv | < 20 ppmv  |
| Moisture            | < 20 ppm/w | < 20 ppmv  |
| Other Fluorocarbons | < 800 ppmv | < 200 ppmv |
| Isopropylalcohol    | < 50 ppmv  | < 20 ppmv  |
| Other Hydrocarbons  | < 500 ppmv | < 250 ppmv |
| Hydrogen Fluoride   | < 50 ppmv  | < 10 ppmv  |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 99                |
| 44L/Size 200  | 55                |
| 16L/Size 80   | 30                |
| 7L/Size 35    | 12                |

### Technical Data:

Mol. Wt: 162.034  
Pressure @ 70°F: 25 psig  
Valve Outlet: CGA 350  
DISS 724

### Shipping Information:

DOT Name: 1,3 Hexafluorobutadiene  
Hazard Class: 2.3, 2.1  
DOT No.: UN 3160  
DOT Label: Toxic, Flammable,  
Inhalation Hazard Zone B  
CAS No.: 685-63-2

# Hexafluoro-1,3-butadiene (C4F6)



## HEXAFLUOROETHANE/HALOCARBON 116 (C2F6): A colorless, non-corrosive, non-flammable liquefied gas.

| Purity:         | Grade 4.5   | Grade 5.0   |
|-----------------|-------------|-------------|
| Specifications: | 99.995%     | 99.999%     |
| Nitrogen        | < 10 ppmv   | < 5 ppmv    |
| Oxygen          | < 5 ppmv    | < 1 ppmv    |
| Carbon Monoxide | < 1 ppmv    | < 1 ppmv    |
| Carbon Dioxide  | < 2 ppmv    | < 1 ppmv    |
| Moisture        | < 5 ppmv    | < 1 ppmv    |
| Other Organics  | < 25 ppmv   | < 1 ppmv    |
| Acidity (HF)    | < 0.1 ppm/w | < 0.1 ppm/w |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 95                |
| 16L/Size 80   | 34                |
| 7L/Size 35    | 15                |

### Technical Data:

Mol. Wt: 138.01  
Sp. Volume: 2.8 cu.ft/lb  
Pressure @ 70°F: 415 psig  
Valve Outlet: CGA 660 /CGA 320  
DISS 716

### Shipping Information:

DOT Name: Hexafluoroethane  
Hazard Class: 2.2  
DOT No.: UN 2193  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 75-16-4

# HEXAFLUOROETHANE/HALOCARBON 116 - C2F6



## HYDROGEN BROMIDE (HBr): A colorless, corrosive, liquefied gas

| Purity:                | Grade 5        | Grade 5.5       |
|------------------------|----------------|-----------------|
| <b>Specifications:</b> | <b>99.999%</b> | <b>99.9995%</b> |
| Nitrogen               | < 3 ppmv       | < 1 ppmv        |
| Oxygen                 | < 1 ppmv       | < 1 ppmv        |
| Carbon Dioxide         | < 3 ppmv       | < 1 ppmv        |
| Carbon Monoxide        | < 0.5 ppmv     | < 0.5 ppmv      |
| Methane                | < 1.5 ppmv     | < 1 ppmv        |
| Water                  | < 4 ppmv       | < 1 ppmv        |
| Hydrogen Chloride      |                | < 50 ppmv       |
| Hydrogen               |                | < 50 ppmv       |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 130               |

### Technical Data:

Mol. Wt: 80.91  
Sp. Volume: 4.8 cu.ft/lb  
Pressure @ 70°F: 320 psig  
Valve Outlet: CGA 330  
DISS 634

### Shipping Information:

DOT Name: Hydrogen Bromide, Anhydrous  
Hazard Class: 2.3  
DOT No.: UN 1048  
DOT Label: Poison Gas Inhalation Hazard Corrosive Gas  
CAS No.: 10035-10-6

# HYDROGEN BROMIDE (HBr)



## HYDROGEN CHLORIDE (HCl): A colorless, nonflammable, liquefied gas.

| Purity:                | Grade 4.5      | Grade 5        |
|------------------------|----------------|----------------|
| <b>Specifications:</b> | <b>99.995%</b> | <b>99.999%</b> |
| Nitrogen               | < 10 ppmv      | < 2 ppmv       |
| Oxygen                 | < 4 ppmv       | < 1 ppmv       |
| Carbon Dioxide         | < 10 ppmv      | < 4 ppmv       |
| Carbon Monoxide        |                | < 1 ppmv       |
| Methane                | < 2 ppmv       | < 1 ppmv       |
| Water                  | < 10 ppmv      | < 1 ppmv       |
| Iron                   |                | < 0.5 ppmw     |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1 Ton         | 600               |
| 49L/Size 300  | 65                |
| 44L/Size 200  | 55                |

**Technical Data:**

Mol. Wt: 36.46  
Sp Volume: 10.6 cu.ft/lb  
Pressure @ 70°F: 613 psig  
Valve Outlet: CGA 330  
DISS 634

**Shipping Information:**

DOT Name: Hydrogen Chloride, Anhydrous  
Hazard Class: 2.3  
DOT No.: UN 1050  
DOT Label: Poison Gas Inhalation Hazard Corrosive Gas  
CAS No.: 7647-01-0

# HYDROGEN CHLORIDE (HCl)



## HYDROGEN FLUORIDE (HF): A colorless, poisonous, liquefied gas

|                        |                  |
|------------------------|------------------|
| <b>Purity:</b>         | <b>Grade 4.5</b> |
| <b>Specifications:</b> | <b>99.995%</b>   |
| Sulfuric Acid          | < 25 ppmv        |
| Sulfur Dioxide         | < 15 ppmv        |
| Hexafluorosilicic Acid | < 15 ppmv        |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 50                |
| 16L/Size 80   | 25                |
| 7L/Size 35    | 4                 |

### Technical Data:

Mol. Wt: 20.01  
Sp. Volume: 19.3 cu.ft/lb  
Pressure @ 70°F: 0.7 psig  
Valve Outlet: CGA 660  
DISS 638

### Shipping Information:

DOT Name: Hydrogen Fluoride, Anhydrous  
Hazard Class: 8 Poison Gas Hazard Zone C  
DOT No.: UN 1052  
DOT Label: Poison Gas Inhalation Hazard Poison Corrosive  
CAS No.: 7664-39-3

# HYDROGEN FLUORIDE (HF)



## HYDROGEN SULFIDE (H<sub>2</sub>S): A flammable, highly toxic, poisonous gas. Shipped as a liquefied gas.

|                        |                  |
|------------------------|------------------|
| <b>Purity:</b>         | <b>Grade 2.5</b> |
| <b>Specifications:</b> | <b>99.5%</b>     |
| Carbon Dioxide         | < 500 ppmv       |
| Carbon Disulfide       | < 1000 ppmv      |
| Carbon Sulfide         | < 1000 ppmv      |
| Nitrogen               | < 100 ppmv       |
| Methane + Ethane       | < 500 ppmv       |
| Water                  | < 1000 ppmv      |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 60                |
| 16L/Size 80   | 22                |

### Technical Data:

Mol. Wt: 34.08  
Sp. Volume: 11.35 cu.ft/lb  
Pressure @ 70°F: 259.9 psig  
Valve Outlet: CGA 330  
DISS 722

### Shipping Information:

DOT Name: Hydrogen Sulfide  
Hazard Class: 2.1, 2.3  
DOT No.: UN 2202  
DOT Label: Poison Gas and Flammable Gas  
CAS No.: 7783-06-4

# HYDROGEN SULFIDE (H<sub>2</sub>S)

## ISOBUTANE (C<sub>4</sub>H<sub>10</sub>): A colorless, flammable liquefied gas

| Purity:            | Grade 2     | Grade 2.5   | Grade 3     | Grade 3.5  | Grade 4    | Grade 4.5 |
|--------------------|-------------|-------------|-------------|------------|------------|-----------|
| Specifications:    | 99.0%       | 99.5%       | 99.9%       | 99.95%     | 99.99%     | 99.995%   |
| Nitrogen           | < 800 ppmv  | < 400 ppmv  | < 160 ppmv  | < 20 ppmv  | < 20 ppmv  | < 10 ppmv |
| Oxygen             | < 200 ppmv  | < 100 ppmv  | < 40 ppmv   | < 5 ppmv   | < 5 ppmv   | < 2 ppmv  |
| Other Hydrocarbons | < 9000 ppmv | < 4900 ppmv | < 1000 ppmv | < 500 ppmv | < 90 ppmv  | < 45 ppmv |
| Sulfur             | < 1 ppmv    | < 1 ppmv    | < 1 ppmv    | < 1 ppmv   | < 1 ppmv   | < 1 ppmv  |
| Moisture           | < 10 ppmv   | < 5 ppmv    | < 4 ppmv    | < 3 ppmv   | < 2 ppmv   | < 2 ppmv  |
| Total Impurities   | < 1%        | < 5000 ppmv | < 1000 ppmv | < 500 ppmv | < 100 ppmv | < 50 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
This product is analyzed liquid phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 490               |
| LP30          | 117               |
| LP15          | 60                |
| LP05          | 23                |
| LP01          | 6                 |
| 49L/Size 300  | 50                |
| 44L/Size 200  | 45                |
| 16L/Size 80   | 16                |
| 7L/Size 35    | 7                 |

### Technical Data:

Mol. Wt: 58.124  
Sp. Volume: 6.50 cf/lb  
Pressure @ 70°F: 31 psig  
Flammability Limits: 1.8 - 8.4% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Isobutane  
Hazard Class: 2.1  
DOT No.: UN 1969  
DOT Label: Flammable Gas  
CAS No.: 75-28-5



## ISOBUTYLENE (C<sub>4</sub>H<sub>8</sub>): a colorless, flammable liquefied gas with a detectable odor

| Purity (Minimum):      | Grade 2.0 | Grade 2.5  |
|------------------------|-----------|------------|
| <b>Specifications:</b> | 99%       | 99.5%      |
| Other Hydrocarbons     |           | <4500 ppmv |
| H <sub>2</sub> O       |           | <3 ppmv    |
| Sulfur                 |           | <1 ppmv    |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| LP30          | 120               |
| LP05          | 24                |

### Technical Data:

Mol. Wt: 53.1063  
Specific Volume: 6.90 cu.ft/lb  
Flammability Limits in Air: 1.8-9.6%  
Pressure @ 70°F: 24 psig  
Valve Outlet: CGA 510

### Shipping Information:

DOT Name: Isobutylene  
Hazard Class: 2.1  
DOT No.: UN 1055  
DOT Label: Flammable Gas  
CAS No.: 115-11-7

# ISOBUTYLENE (C<sub>4</sub>H<sub>8</sub>)



## ISOPENTANE (C<sub>5</sub>H<sub>12</sub>): A colorless, flammable liquid with a mild gasoline odor

| Purity:                | Grade 2      | Grade 2.5    |
|------------------------|--------------|--------------|
| <b>Specifications:</b> | <b>99.0%</b> | <b>99.5%</b> |
| Other Hydrocarbons     | < 1 %        | < 0.5%       |
| Sulfur                 | < 1 ppmv     | < 1 ppmv     |
| Moisture               | < 5 ppmv     | < 5 ppmv     |
| Total Impurities       | < 1 %        | < 0.5%       |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed liquid phase.*

*Assay excludes Nitrogen.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 570               |
| LP30          | 136               |
| LP15          | 80                |
| LP05          | 27                |
| LP01          | 7                 |
| 49L/Size 300  | 60                |
| 44L/Size 200  | 50                |
| 16L/Size 80   | 19                |
| 7L/Size 35    | 8                 |

### Technical Data:

Mol. Wt: 72.15  
Pressure @ 100°F: 20.1 psia  
Flammability Limits: 1.4 - 7.6% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Pentanes  
Hazard Class: 3  
DOT No.: UN 1265  
Packing Group: I  
DOT Label: Flammable Liquid  
CAS No.: 78-78-4

## Krypton (Kr): A colorless, odorless, nonflammable inert gas

| Purity:   | Grade 4   | Grade 4.5 | Grade 5    |
|---|-----------|-----------|------------|
| Specifications:   | 99.99%    | 99.995%   | 99.999%    |
| Air (N <sub>2</sub> +O <sub>2</sub> +CO+CO <sub>2</sub> ) | < 40 ppmv |           |            |
| Nitrogen  |           | < 15 ppmv | < 4 ppmv   |
| Oxygen  |           | < 2 ppmv  | < 0.5 ppmv |
| Carbon Monoxide   |           | < 1 ppmv  | < 0.5 ppmv |
| Carbon Dioxide  |           | < 1 ppmv  | < 0.5 ppmv |
| Moisture  | < 10 ppmv | < 2 ppmv  | < 2 ppmv   |
| Total Hydrocarbons  |           | < 1 ppmv  | < 0.5 ppmv |
| Xenon   |           | < 20 ppmv | < 2 ppmv   |
| CF <sub>4</sub>   | < 50 ppmv |           | < 0.1 ppmv |
| Sulfur Hexafluoride                                       |           |           | < 0.1 ppmv |
| Halocarbon 116  |           |           | < 0.1 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| 49L/Size 300  | 10000           |
| 44L/Size 200  | 7000            |
| 16L/Size 80   | 2000            |
| 7L/Size 35    | 500             |

### Technical Data:

Mol. Wt: 83.80  
Sp. Volume: 4.6 cu.ft/lb  
Pressure @ 70°F: 2400 psia  
Valve Outlet: CGA 580

### Shipping Information:

DOT Name: Krypton  
Hazard Class: 2.2  
DOT No.: UN 1056  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 74390-90-0



**METHANE (CH<sub>4</sub>): A colorless, flammable, odorless gas.**

| Purity:                 | Grade 2     | Grade 3     | Grade 4    | Grade 4.5 | Grade 5   | Grade 5.5 | Grade 6    |
|-------------------------|-------------|-------------|------------|-----------|-----------|-----------|------------|
| Specifications:         | 99.0%       | 99.9%       | 99.99%     | 99.995%   | 99.999%   | 99.9995%  | 99.9999%   |
| Nitrogen                | < 3000 ppmv | < 200 ppmv  | < 40 ppmv  | < 20 ppmv | < 5 ppmv  | < 1 ppmv  | < 0.5 ppmv |
| Oxygen                  | < 750 ppmv  | < 50 ppmv   | < 5 ppmv   | < 5 ppmv  | < 2 ppmv  | < 1 ppmv  | < 0.5 ppmv |
| Ethane                  | -           | -           | < 60 ppmv  | < 30 ppmv | < 5 ppmv  | < 3 ppmv  | < 0.5 ppmv |
| Other Hydrocarbons      | < 1.0 %     | < 800 ppmv  | < 10 ppmv  | < 5 ppmv  | < 2 ppmv  | < 1 ppmv  | < 0.5 ppmv |
| Moisture                | < 10 ppmv   | < 5 ppmv    | < 5 ppmv   | < 5 ppmv  | < 2 ppmv  | < 1 ppmv  | < 0.5ppmv  |
| <b>Total Impurities</b> | < 1.0 %     | < 1000 ppmv | < 100 ppmv | < 50 ppmv | < 10 ppmv | < 5 ppmv  | < 1 ppmv   |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed gas phase.*

| Cylinder Size | Fill Weight (lbs) | Fill Volume (scf) |
|---------------|-------------------|-------------------|
| 49L/Size 300  | 15.2              | 360               |
| 44L/Size 200  | 11                | 260               |
| 16L/Size 80   | 4                 | 94                |
| 7L/Size 35    | 2                 | 47                |
| 29AL          | 175               | 7.4               |

**Technical Data:**

Mol. Wt: 16.043  
Sp. Volume: 23.7 cf/lb  
Flammability Limits: 5.0-15% in Air  
Valve Outlet: CGA 350  
LB CGA 170

**Shipping Information:**

DOT Name: Methane, Compressed  
Hazard Class: 2.1  
DOT No.: UN 1971  
DOT Label: Flammable Gas  
CAS No.: 74-82-8



## METHYL CHLORIDE (CH<sub>3</sub>Cl): A colorless, flammable liquefied gas with a slightly sweet odor

|                   |           |
|-------------------|-----------|
| Purity (Minimum): | Grade 2.5 |
| Specifications:   | 99.5%     |

Chemically Pure

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| HT            | 830               |
| LP150         | 398               |
| LP30          | 175               |
| LP05          | 25                |

### Technical Data:

Mol. Wt: 50.488  
Specific Volume: 7.66 cu.ft/lb  
Flammability Limits in Air: 8.1-17.2% in Air  
Pressure @ 70°F: 59 psig  
Valve Outlet: CGA 510

### Shipping Information:

DOT Name: Methyl Chloride  
Hazard Class: 2.1  
DOT No.: UN 1063  
DOT Label: Flammable Gas  
CAS No.: 74-87-3

# METHYL CHLORIDE (CH<sub>3</sub>Cl)



## METHYL FLUORIDE/HALOCARBON 41 (CH<sub>3</sub>F): A colorless, flammable gas

| Purity:                | Grade 4       | Grade 4.5      |
|------------------------|---------------|----------------|
| <b>Specifications:</b> | <b>99.99%</b> | <b>99.995%</b> |
| Nitrogen               | < 70 ppmv     | < 20 ppmv      |
| Oxygen                 | < 20 ppmv     | < 5 ppmv       |
| Carbon Dioxide         |               | < 10 ppmv      |
| Carbon Monoxide        |               | < 10 ppmv      |
| Methane                |               | < 5 ppmv       |
| Water                  | < 10 ppmv     | < 2 ppmv       |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 18                |
| 16L/Size 80   | 7                 |
| 7L/Size 35    | 3                 |

### Technical Data:

Mol. Wt: 34  
Specific Volume: 11.36 cu.ft/lb  
Pressure @ 70°F: 538 psig  
Valve Outlet: CGA 350  
DISS 724

### Shipping Information:

DOT Name: Methyl Fluoride  
Hazard Class: 2.1  
DOT No.: UN 2810  
DOT Label: Flammable Gas  
CAS No.: 593-53-3

# METHYL FLUORIDE/HALOCARBON 41 (CH<sub>3</sub>F)



## METHYLAMINE (CH<sub>5</sub>N): A colorless, flammable liquefied gas with a characteristic fishy odor

|                   |           |
|-------------------|-----------|
| Purity (Minimum): | Grade 2.5 |
| Specifications:   | 99.5%     |

Chemically Pure

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| HT            | 550               |
| LP30          | 125               |

### Technical Data:

Mol. Wt: 31.0571  
Specific Volume: 12.46 cu.ft/lb  
Flammability Limits in Air: 4.9-20.7% in Air  
Pressure @ 70°F: 30 psig  
Valve Outlet: CGA 510

### Shipping Information:

DOT Name: Methylamine, Anhydrous  
Hazard Class: 2.1  
DOT No.: UN 1061  
DOT Label: Flammable Gas  
CAS No.: 74-89-5

# METHYLAMINE (CH<sub>5</sub>N)

## n-BUTANE (C<sub>4</sub>H<sub>10</sub>): A colorless, flammable liquefied gas

| Purity:                 | Grade 2     | Grade 2.5   | Grade 3     | Grade 3.5  | Grade 4    |
|-------------------------|-------------|-------------|-------------|------------|------------|
| Specifications:         | 99.0%       | 99.5%       | 99.9%       | 99.95%     | 99.99%     |
| Nitrogen                | < 400 ppmv  | < 400 ppmv  | < 100 ppmv  | < 40 ppmv  | < 20 ppmv  |
| Oxygen                  | < 100 ppmv  | < 100 ppmv  | < 20 ppmv   | < 10 ppmv  | < 5 ppmv   |
| Other Hydrocarbons      | < 9000 ppmv | < 4500 ppmv | < 900 ppmv  | < 500 ppmv | < 90 ppmv  |
| Sulfur                  | < 1 ppmv    | < 1 ppmv    | < 1 ppmv    | < 1 ppmv   | < 1 ppmv   |
| Moisture                | < 10 ppmv   | < 5 ppmv    | < 4 ppmv    | < 3 ppmv   | < 3 ppmv   |
| <b>Total Impurities</b> | < 1 %       | < 5000 ppmv | < 1000 ppmv | < 500 ppmv | < 100 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
This product is analyzed liquid phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 500               |
| LP30          | 120               |
| LP15          | 60                |
| LP05          | 24                |
| LP01          | 6                 |
| 49L/Size 300  | 55                |
| 44L/Size 200  | 45                |
| 16L/Size 80   | 17                |
| 7L/Size 35    | 7                 |

### Technical Data:

Mol. Wt: 58.12  
Sp. Volume: 6.4 cf/lb  
Pressure @ 70°F: 16.3 psig  
Flammability Limits: 1.8 - 8.4% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Butane  
Hazard Class: 2.1  
DOT No.: UN 1011  
DOT Label: Flammable Gas  
CAS No.: 106-97-8





## n-PENTANE (C<sub>5</sub>H<sub>12</sub>): A colorless, flammable liquid with a mild gasoline odor

|                         |                 |
|-------------------------|-----------------|
| <b>Purity:</b>          | <b>Grade 2</b>  |
| <b>Specifications:</b>  | <b>99.0%</b>    |
| Other Hydrocarbons      | < 1 %           |
| Sulfur                  | < 1 ppmv        |
| Moisture                | < 5 ppmv        |
| <b>Total Impurities</b> | <b>&lt; 1 %</b> |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed liquid phase.*

*Assay excludes Nitrogen.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 570               |
| LP30          | 136               |
| LP15          | 80                |
| LP05          | 27                |
| LP01          | 7                 |
| 49L/Size 300  | 60                |
| 44L/Size 200  | 50                |
| 16L/Size 80   | 19                |
| 7L/Size 35    | 8                 |

### Technical Data:

Mol. Wt: 72.15  
Pressure @ 100°F: 15.3 psia  
Flammability Limits: 1.4 - 7.8% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Pentanes  
Hazard Class: 3  
DOT No.: UN 1265  
Packing Group: II  
DOT Label: Flammable Liquid  
CAS No.: 109-66-0



## NEON (Ne): A colorless, odorless, nonflammable, inert gas

|                        |                |
|------------------------|----------------|
| <b>Purity:</b>         | <b>Grade 5</b> |
| <b>Specifications:</b> | <b>99.999%</b> |
| Nitrogen               | < 2 ppmv       |
| Oxygen                 | < 0.5 ppmv     |
| Carbon Monoxide        | < 0.5 ppmv     |
| Carbon Dioxide         | < 0.5 ppmv     |
| Moisture               | < 1 ppmv       |
| Total Hydrocarbons     | < 0.5 ppmv     |
| Helium                 | < 5 ppmv       |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| 49L/Size 300  | 7500            |

### Technical Data:

Mol. Wt: 20.18  
Sp. Volume: 19.21 cu.ft/lb  
Pressure @ 70°F: 2400 psia  
Valve Outlet: CGA 580

### Shipping Information:

DOT Name: Neon  
Hazard Class: 2.2  
DOT No.: UN 1065  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 7440-01-9



## NITRIC OXIDE (NO): A colorless, corrosive, poisonous, oxidizing gas

| Purity:                | Grade 2.5    | Grade 3      | Grade 3.5     | Grade 4       |
|------------------------|--------------|--------------|---------------|---------------|
| <b>Specifications:</b> | <b>99.5%</b> | <b>99.9%</b> | <b>99.95%</b> | <b>99.99%</b> |
| Oxygen                 |              |              |               | < 1 ppmv      |
| Nitrogen               | < 3000 ppmv  | < 500 ppmv   | < 100 ppmv    | < 30 ppmv     |
| Carbon Dioxide         | < 1000 ppmv  | < 100 ppmv   | < 50 ppmv     | < 1 ppmv      |
| THC (CH4)              |              |              |               | < 1 ppmv      |
| Water                  | < 20 ppmv    | < 5 ppmv     | < 2 ppmv      | < 1 ppmv      |
| Hydrogen               |              |              |               | < 1 ppmv      |
| Nitrous Oxide          | < 1000 ppmv  | < 500 ppmv   | < 50 ppmv     | < 30 ppmv     |
| Nitrogen Dioxide       |              | < 100 ppmv   | < 100 ppmv    | < 30 ppmv     |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| 44L/Size 200  | 43.8            |

### Technical Data:

Mol. Wt: 30.01  
Sp. Volume: 12.8 cu.ft/lb  
Pressure @ 70°F: 500 psig  
Valve Outlet: CGA 660  
DISS 728

### Shipping Information:

DOT Name: Nitric Oxide Compressed  
Hazard Class: 2.3  
DOT No.: UN 1660  
DOT Label: Inhalation Hazard, Oxidizer, Corrosive Gas  
CAS No.: 10102-43-9

NITRIC OXIDE (NO)

## NITROGEN DIOXIDE (NO<sub>2</sub>): a highly toxic, oxidizing gas with a reddish-brown color and an irritating odor

|                   |           |
|-------------------|-----------|
| Purity (Minimum): | Grade 2.5 |
| Specifications:   | 99.5%     |

Chemically Pure

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| Size 200      | 253               |
| Size 35       | 39                |

### Technical Data:

Mol. Wt: 46.006  
Valve Outlet: CGA 660

### Shipping Information:

DOT Name: Dinitrogen Tetroxide  
Hazard Class: 2.3  
DOT No.: UN 1067  
DOT Label: Toxic gas, oxidizer, corrosive  
CAS No.: 10102-44-0

# NITROGEN DIOXIDE (NO<sub>2</sub>)



## NITROGEN TRIFLUORIDE (NF3): A colorless, non-flammable, corrosive gas.

| Purity:              | Grade 2.7   | Grade 4   | Grade 4.5  |
|----------------------|-------------|-----------|------------|
| Specifications:      | 99.7%       | 99.99%    | 99.995%    |
| Oxygen               |             | < 10 ppmv | < 5 ppmv   |
| Oxygen and Argon     | < 700 ppmv  |           |            |
| Nitrogen             | < 700 ppmv  | < 10 ppmv | < 5 ppmv   |
| Carbon Dioxide       | < 25 ppmv   | < 10 ppmv | < 3 ppmv   |
| Carbon Monoxide      | < 25 ppmv   |           | < 0.5 ppmv |
| Water                | < 1 ppmv    | < 1 ppmv  | < 1 ppmv   |
| Carbon Tetrafluoride | < 1500 ppmv | < 40 ppmv | < 25 ppmv  |
| Nitrous Oxide        | < 50 ppmv   | < 10 ppmv | < 2 ppmv   |
| Acidity (HF)         | < 1 ppmv    | < 5 ppmv  | < 1 ppmv   |
| Sulfur Hexafluoride  | < 50 ppmv   |           | < 1 ppmv   |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 49L/Size 300  | 50                |
| 44L/Size 200  | 44                |

### Technical Data:

Mol. Wt: 71.00  
Sp. Volume: 5.4 cu.ft/lb  
Pressure @ 70°F: 1450 psig  
Valve Outlet: CGA 670  
DISS 640

### Shipping Information:

DOT Name: Nitrogen Trifluoride  
Hazard Class: 2.2  
DOT No.: UN 2451  
DOT Label: Non-Flammable Gas and Oxidizer  
CAS No.: 7783-54-2

# NITROGEN TRIFLUORIDE (NF3)



## NITROUS OXIDE (N<sub>2</sub>O): A colorless, odorless, non-flammable gas

| Purity:                           | Grade 4.5 | Grade 5    |
|-----------------------------------|-----------|------------|
| Specifications:                   | 99.995%   | 99.999%    |
| Nitrogen                          | < 7 ppmv  | < 2 ppmv   |
| Oxygen                            | < 2 ppmv  | < 2 ppmv   |
| Carbon Dioxide                    | < 2 ppmv  | < 2 ppmv   |
| Carbon Monoxide                   |           | < 0.1 ppmv |
| Methane                           | < 1 ppmv  | < 0.1 ppmv |
| Water                             |           | < 2 ppmv   |
| Ammonia                           |           | < 0.5 ppmv |
| Nitric Oxide and Nitrogen Dioxide |           | < 0.5 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 60                |

### Technical Data:

Mol. Wt: 44.01  
Sp. Volume: 8.7 cu.ft/lb  
Pressure @ 70°F: 745 psig  
Valve Outlet: CGA 326  
DISS 712

### Shipping Information:

DOT Name: Nitrous Oxide  
Hazard Class: 2.2  
DOT No.: UN 1070  
DOT Label: Non-Flammable Gas Oxidizer  
CAS No.: 10024-97-2

NITROUS OXIDE (N<sub>2</sub>O)



## OCTAFLUOROCYCLOBUTANE/HALOCARBON 318 (C4F8): A colorless, odorless, non-flammable liquefied gas

| Purity:   | Grade 3      | Grade 3.8     | Grade 4.5      | Grade 5        |
|---|--------------|---------------|----------------|----------------|
| <b>Specifications:</b>                                    | <b>99.9%</b> | <b>99.98%</b> | <b>99.995%</b> | <b>99.999%</b> |
| Nitrogen  |              | < 80 ppmv     | < 8 ppmv       | < 3 ppmv       |
| Oxygen  |              | < 20 ppmv     | < 2 ppmv       | < 1 ppmv       |
| Air (N <sub>2</sub> +O <sub>2</sub> +CO+CO <sub>2</sub> ) | < 300 ppmv   |               |                |                |
| Moisture  | < 10 ppmv    | < 10 ppmw     | < 3 ppmw       | < 1 ppmw       |
| Tetrafluoromethane  |              | < 50 ppmv     |                |                |
| Other Fluorocarbons                                       |              | < 50 ppmv     | < 10 ppmv      | < 4 ppmv       |
| Other Organics  | < 1000 ppmv  |               |                |                |
| Acidity   |              | < 0.1 ppm/w   | < 0.1 ppm/w    | < 0.1 ppm/w    |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 100               |
| 16L/Size 80   | 35                |
| 7L/Size 35    | 15                |

### Technical Data:

Mol. Wt: 200.03  
Sp. Volume: 1.85 cu.ft/lb  
Pressure @ 70°F: 25 psig  
Valve Outlet: CGA 660  
DISS 716

### Shipping Information:

DOT Name: Octafluorocyclobutane  
Hazard Class: 2.2  
DOT No.: UN 1976  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 115-25-3

OCTAFLUOROCYCLOBUTANE/HALOCARBON 318 - C4F8



## OCTAFLUOROPROPANE/HALOCARBON 218 (C3F8): A colorless, non-flammable liquefied gas with a faintly sweet odor

| Purity:                | Grade 3.6     | Grade 3.7     | Grade 4       |
|------------------------|---------------|---------------|---------------|
| <b>Specifications:</b> | <b>99.96%</b> | <b>99.97%</b> | <b>99.99%</b> |
| Nitrogen               | < 200 ppmv    | < 145 ppmv    | < 40 ppmv     |
| Oxygen                 | < 50 ppmv     | < 50 ppmv     | < 10 ppmv     |
| Carbon Monoxide        |               | < 5 ppmv      | < 5 ppmv      |
| Carbon Dioxide         | < 10 ppmv     | < 11 ppmv     | < 5 ppmv      |
| Moisture               | < 10 ppmw     | < 6 ppmw      | < 10 ppmv     |
| Other Halocarbons      | < 100 ppmv    | < 400 ppmv    | < 40 ppmv     |
| Light Gases            |               | < 200 ppmv    |               |
| Acidity                |               | < 0.1 ppm/w   | < 0.1 ppm /w  |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 100               |
| 16L/Size 80   | 35                |
| 7L/Size 35    | 15                |

### Technical Data:

Mol. Wt: 188.02  
Sp. Volume: 2.02 cu.ft/lb  
Pressure @ 70°F: 100 psig  
Valve Outlet: CGA 660  
DISS 716

### Shipping Information:

DOT Name: Octafluoropropane  
Hazard Class: 2.2  
DOT No.: UN 2424  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 76-19-7

OCTAFLUOROPROPANE/HALOCARBON 218 - C3F8





## PHOSPHINE (PH<sub>3</sub>): A colorless, flammable, toxic gas

| Purity:                | Grade 5.7       | Grade 5.8       | Grade 6.0       |
|------------------------|-----------------|-----------------|-----------------|
| <b>Specifications:</b> | <b>99.9997%</b> | <b>99.9998%</b> | <b>99.9999%</b> |
| Nitrogen               | < 1 ppmv        | < 1 ppmv        | < 100 ppbv      |
| Oxygen                 | < 0.1 ppmv      | < 0.1 ppmv      | < 100 ppbv      |
| Carbon Dioxide         | < 0.1 ppmv      | < 0.1 ppmv      | < 100 ppbv      |
| Carbon Monoxide        | < 0.1 ppmv      | < 0.1 ppmv      | < 50 ppbv       |
| Methane                | < 0.1 ppmv      | < 0.1 ppmv      | < 100 ppbv      |
| Water                  | < 1 ppmv        | < 0.5 ppmv      | < 100 ppbv      |
| Argon                  |                 |                 | < 100 ppbv      |
| Arsine                 |                 | < 0.1 ppmv      | < 50 ppbv       |
| Germane                |                 |                 | < 50 ppbv       |
| Hydrogen Sulfide       |                 |                 | < 50 ppbv       |
| Silane                 |                 |                 | < 50 ppbv       |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 40                |
| 265 AL        | 40                |

*\*RFO available*

### Technical Data:

Mol. Wt: 33.99  
Sp. Volume: 11.4 cu.ft/lb  
Pressure @ 70° F: 594 psig  
Valve Outlet: CGA 350  
DISS 632

### Shipping Information:

DOT Name: Phosphine  
Hazard Class: 2.3  
DOT No.: UN 2199  
DOT Label: Poison Gas, Flammable Gas  
CAS No.: 7803-51-2

# PHOSPHINE (PH<sub>3</sub>)



## PROPADIENE (C3H4): A colorless, flammable, liquefied gas with a detectable odor

|                         |                  |
|-------------------------|------------------|
| <b>Purity:</b>          | <b>Grade 1.5</b> |
| <b>Specifications:</b>  | <b>95.0%</b>     |
| Other Hydrocarbons      | < 5%             |
| Moisture                | < 5 ppmv         |
| <b>Total Impurities</b> | <b>&lt; 5%</b>   |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| LP30          | 110               |
| LP15          | 50                |
| LP05          | 20                |
| LP01          | 5                 |
| 49L/Size 300  | 50                |
| 44L/Size 200  | 45                |
| 16L/Size 80   | 17                |
| 7L/Size 35    | 7                 |

### Technical Data:

Mol. Wt: 40.065  
Sp. Volume: 9.6 cu.ft/lb  
Pressure @ 70°F: 102 psig  
Flammability Limits: 1.5 - 11.5% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Propadiene, Inhibited  
Hazard Class: 2.1  
DOT No.: UN 2200  
DOT Label: Flammable Gas  
CAS No.: 463-49-0

# PROPADIENE (C3H4)



**PROPANE (C3H8): A colorless, flammable, liquefied gas with a faint odor**

| Purity:                 | Grade 2     | Grade 3     | Grade 3.5  | Grade 4    | Grade 4.5 | Grade 5   |
|-------------------------|-------------|-------------|------------|------------|-----------|-----------|
| Specifications:         | 99.0%       | 99.9%       | 99.95%     | 99.99%     | 99.995%   | 99.999%   |
| Nitrogen                | < 800 ppmv  | < 100 ppmv  | < 30 ppmv  | < 10 ppmv  | < 5 ppmv  | < 2 ppmv  |
| Oxygen                  | < 200 ppmv  | < 25 ppmv   | < 10 ppmv  | < 2 ppmv   | < 1 ppmv  | < 1 ppmv  |
| Carbon Dioxide          | < 200 ppmv  | < 20 ppmv   | < 10 ppmv  | < 2 ppmv   | < 2 ppmv  | < 1 ppmv  |
| Propylene               | < 800 ppmv  | < 200 ppmv  | < 50 ppmv  | < 10 ppmv  | < 10 ppmv | < 2 ppmv  |
| Other Hydrocarbons      | < 9000 ppmv | < 900 ppmv  | < 400 ppmv | < 80 ppmv  | < 40 ppmv | < 8 ppmv  |
| Moisture                | < 10 ppmv   | < 5 ppmv    | < 5 ppmv   | < 3 ppmv   | < 3 ppmv  | < 2 ppmv  |
| <b>Total Impurities</b> | < 1%        | < 1000 ppmv | < 500 ppmv | < 100 ppmv | < 50 ppmv | < 10 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
This product is analyzed liquid phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 420               |
| LP30          | 100               |
| LP15          | 50                |
| LP05          | 20                |
| LP01          | 5                 |
| 49L/Size 300  | 45                |
| 44L/Size 200  | 40                |
| 16L/Size 80   | 14                |
| 7L/Size 35    | 6                 |

**Technical Data:**

Mol. Wt: 44.1  
Sp. Volume: 8.5 cf/lb  
Pressure @ 70°F: 109 psig  
Flammability Limits: 2.1 - 9.5% in Air  
Valve Outlet: CGA 510  
LB CGA 170

**Shipping Information:**

DOT Name: Propane  
Hazard Class: 2.1  
DOT No.: UN 1978  
DOT Label: Flammable Gas  
CAS No.: 74-98-6

## PROPYLENE (C<sub>3</sub>H<sub>6</sub>): A colorless, flammable, liquefied gas with a detectable odor

| Purity:                 | Grade 2     | Grade 3     | Grade 3.5  | Grade 3.7  | Grade 4    | Grade 4.5 |
|-------------------------|-------------|-------------|------------|------------|------------|-----------|
| Specifications:         | 99.0%       | 99.9%       | 99.95%     | 99.97%     | 99.99%     | 99.995%   |
| Nitrogen                | < 100 ppmv  | < 20 ppmv   | < 10 ppmv  | < 10 ppmv  | < 5 ppmv   | < 5 ppmv  |
| Oxygen                  | < 5 ppmv    | < 2 ppmv    | < 2 ppmv   | < 2 ppmv   | < 1 ppmv   | < 1 ppmv  |
| Carbon Dioxide          | < 10 ppmv   | < 4 ppmv    | < 2 ppmv   | < 1 ppmv   | < 1 ppmv   | < 1 ppmv  |
| Other Hydrocarbons      | < 9000 ppmv | < 950 ppmv  | < 470 ppmv | < 290 ppmv | < 90 ppmv  | < 45 ppmv |
| Moisture                | < 10 ppmv   | < 4 ppmv    | < 3 ppmv   | < 3 ppmv   | < 2 ppmv   | < 2 ppmv  |
| <b>Total Impurities</b> | < 1 %       | < 1000 ppmv | < 500 ppmv | < 300 ppmv | < 100 ppmv | < 50 ppmv |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
This product is analyzed liquid phase.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 430               |
| LP30          | 105               |
| LP15          | 50                |
| LP05          | 20                |
| LP01          | 5                 |
| 49L/Size 300  | 45                |
| 44L/Size 200  | 40                |
| 16L/Size 80   | 15                |
| 7L/Size 35    | 6                 |

### Technical Data:

Mol. Wt: 42.08  
Sp. Volume: 9.4 cf/lb  
Pressure @ 70°F: 136.6 psig  
Flammability Limits: 2.0 - 11.0% in Air  
Valve Outlet: CGA 350/510  
LB CGA 170

### Shipping Information:

DOT Name: Propylene  
Hazard Class: 2.1  
DOT No.: UN 1077  
DOT Label: Flammable Gas  
CAS No.: 115-07-1

## SILANE (SiH<sub>4</sub>): A colorless, flammable gas with a sharp smell

| Purity:             | Grade 6     |
|---------------------|-------------|
| Specifications:     | 99.9999%    |
| Nitrogen            | < 0.5 ppmv  |
| Oxygen + Argon      | < 0.06 ppmv |
| Carbon Dioxide      | < 0.05 ppmv |
| Carbon Monoxide     | < 0.08 ppmv |
| Hydrogen            | < 20 ppmv   |
| Water               | < 0.5 ppmv  |
| Helium              | < 1 ppmv    |
| Methane             | < 0.04 ppmv |
| THC (Sum of C2-C4)  | < 0.1 ppmv  |
| Total Chlorosilanes | < 0.1 ppmv  |
| Disilane            | < 0.5 ppmv  |
| Disiloxane          | < 0.5 ppmv  |
| Resistivity, N-Type | > 10,000    |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 22                |
| 150 AL        | 11                |

*\*RFO available*

### Technical Data:

Mol. Wt: 32.12  
Sp. Volume: 12.1 cu.ft/lb  
Pressure @ 70°F: 275-1250 psig  
Valve Outlet: CGA 350  
DISS 632

### Shipping Information:

DOT Name: Silane  
Hazard Class: 2.1  
DOT No.: UN 2203  
DOT Label: Flammable Gas  
CAS No.: 7803-62-5

## SILICON TETRAFLUORIDE (SiF<sub>4</sub>): A colorless, corrosive, non-flammable toxic gas

|                        |                |
|------------------------|----------------|
| <b>Purity:</b>         | <b>Grade 4</b> |
| <b>Specifications:</b> | <b>99.99%</b>  |
| Nitrogen               | < 3 ppmv       |
| Oxygen + Argon         | < 1 ppmv       |
| Carbon Dioxide         | < 1 ppmv       |
| Carbon Monoxide        | < 0.5 ppmv     |
| Methane                | < 10 ppmv      |
| Hydrogen Fluoride      | < 50 ppmv      |
| Arsenic                | < 0.5 ppmv     |
| Boron                  | < 0.5 ppmv     |
| Phosphorus             | < 0.5 ppmv     |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 50                |

*\*RFO available*

### Technical Data:

Mol. Wt: 104.8  
Sp. Volume: 3.7 cu.ft/lb  
Pressure @ 70°F: 1000psig  
Valve Outlet: CGA 330  
DISS 642

### Shipping Information:

DOT Name: Silicon Tetrafluoride  
Hazard Class: 2.3  
DOT No.: UN 1859  
DOT Label: Poison Gas, Corrosive  
CAS No.: 7783-61-1

# SILICON TETRAFLUORIDE (SiF<sub>4</sub>)



## SULFUR HEXAFLUORIDE (SF6): A colorless, odorless, non-toxic liquified gas

| Purity:         | Grade 3     | Grade 4     | Grade 4.5   | Grade 5     |
|-----------------|-------------|-------------|-------------|-------------|
| Specifications: | 99.9%       | 99.99%      | 99.995%     | 99.999%     |
| Nitrogen        |             | < 40 ppmv   | < 20 ppmv   | < 5 ppmv    |
| Oxygen          |             | < 10 ppmv   | < 10 ppmv   | < 2 ppmv    |
| Air (N2 + O2)   | < 400 ppmv  |             |             |             |
| CF4             | < 400 ppmv  | < 15 ppmv   | < 15 ppmv   | < 5 ppmv    |
| Water           | < 8 ppmv    | < 8 ppmv    | < 5 ppmv    | < 2 ppmv    |
| Acidity (HF)    | < 0.3 ppm/w | < 0.3 ppm/w | < 0.1 ppm/w | < 0.1 ppm/w |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 115               |
| 16L/Size 80   | 35                |
| 10L/Size 60   | 22                |
| 7L/Size 35    | 18                |

### Technical Data:

Mol. Wt: 146.05  
Sp. Volume: 2.65 cu.ft/lb  
Pressure @ 70°F: 298 psig  
Valve Outlet: CGA 590  
DISS 716

### Shipping Information:

DOT Name: Sulfur Hexafluoride  
Hazard Class: 2.2  
DOT No.: UN 1080  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 2551-62-4

SULFUR HEXAFLUORIDE - SF6



## SULFUR HEXAFLUORIDE (SF6) FOR ELECTRICAL INSULATING: A colorless, odorless, non-toxic, liquified gas.

|  |                  |
|--|------------------|
| <b>Purity:</b>                         | <b>Grade 3.0</b> |
| <b>Specifications:</b>                 | <b>99.9%</b>     |
| Nitrogen                               |                  |
| Oxygen                                 |                  |
| Air (N <sub>2</sub> + O <sub>2</sub> ) | < 400 ppmv       |
| CF <sub>4</sub>                        | < 400 ppmv       |
| Water                                  | < 8 ppmv         |
| Acidity (HF)                           | < 0.3 ppm/w      |

Exceeds ASTM D2472-00 & IEC 376 SPECS FOR  
ELECTRICAL INSULATING

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 115               |
| 16L/Size 80   | 35                |
| 7L/Size 35    | 18                |

**Technical Data:**

Mol. Wt: 146.05  
Sp. Volume: 2.65 cu.ft/lb  
Pressure @ 70°F: 298 psig  
Valve Outlet: CGA 590  
DISS 716

**Shipping Information:**

DOT Name: Sulfur Hexafluoride  
Hazard Class: 2.2  
DOT No.: UN 1080  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 2551-62-4

SULFUR HEXAFLUORIDE FOR ELECTRICAL INSULATING - SF6





## TETRAFLUOROMETHANE/HALOCARBON 14 (CF4): A colorless, non-flammable, non-corrosive gas

| Purity:             | Grade 4     | Grade 4.5   | Grade 5     |
|---------------------|-------------|-------------|-------------|
| Specifications:     | 99.99%      | 99.995%     | 99.999%     |
| Nitrogen            | < 60 ppmv   | < 30 ppmv   | < 5 ppmv    |
| Oxygen              | < 20 ppmv   | < 5 ppmv    | < 1 ppmv    |
| Carbon Monoxide     | < 5 ppmv    | < 1 ppmv    | < 0.5 ppmv  |
| Carbon Dioxide      | < 5 ppmv    | < 1 ppmv    | < 0.5 ppmv  |
| Moisture            | < 5 ppmv    | < 5 ppmv    | < 2 ppmv    |
| Halocarbon 116      |             |             | < 1 ppmv    |
| Other Halocarbons   | < 5 ppmv    | < 5 ppmv    |             |
| Sulfur Hexafluoride |             |             |             |
| Hydrocarbons        |             | < 1 ppmv    |             |
| Acidity (HF)        | < 0.1 ppm/w | < 0.1 ppm/w | < 0.1 ppm/w |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 49L/Size 300  | 72                |
| 44L/Size 200  | 70                |
| 16L/Size 80   | 25                |
| 7L/Size 35    | 11                |

### Technical Data:

Mol. Wt: 88.01  
Sp. Volume: 4.39 cu.ft/lb  
Pressure @ 70°F: 2000 psig  
Valve Outlet: CGA 580  
CGA 320

### Shipping Information:

DOT Name: Tetrafluoromethane  
Hazard Class: 2.2  
DOT No.: UN 1982  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 75-73-0

TETRAFLUOROMETHANE/HALOCARBON 14 - CF4



## TRANS-2-BUTENE (C4H8): A colorless, flammable, liquefied gas with a slight aromatic odor

|                         |                |
|-------------------------|----------------|
| <b>Purity:</b>          | <b>Grade 2</b> |
| <b>Specifications:</b>  | <b>99.0%</b>   |
| Other Hydrocarbons      | < 1%           |
| Sulfur                  | < 1 ppmv       |
| Moisture                | < 5 ppmv       |
| <b>Total Impurities</b> | <b>&lt; 1%</b> |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
This product is analyzed liquid phase.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 540               |
| LP30          | 128               |
| LP15          | 77                |
| LP05          | 25                |
| LP01          | 6                 |
| 49L/Size 300  | 55                |
| 44L/Size 200  | 50                |
| 16L/Size 80   | 18                |
| 7L/Size 35    | 8                 |

### Technical Data:

Mol. Wt: 56.11  
Sp. Volume: 7.6 cu.ft/lb  
Pressure @ 70°F: 15 psig  
Flammability Limits: 1.6 - 9.7% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Butylene  
Hazard Class: 2.1  
DOT No.: UN 1012  
DOT Label: Flammable Gas  
CAS No.: 624-64-6



**TRIFLUOROMETHANE/HALOCARBON 23 (CHF<sub>3</sub>): A colorless, non-toxic, non-flammable gas with slightly ethereal odor.**

| Purity:   | Grade 3     | Grade 3.5   | Grade 4.5 | Grade 5     |
|---|-------------|-------------|-----------|-------------|
| Specifications:   | 99.9%       | 99.95%      | 99.995%   | 99.999%     |
| Air (N <sub>2</sub> +O <sub>2</sub> +CO+CO <sub>2</sub> ) | < 500 ppmv  | < 400 ppmv  | < 30 ppmv | <5 ppmv     |
| Moisture  | < 10 ppm/w  | < 10 ppmv   | < 4 ppmv  | < 2 ppmv    |
| Other Organics  | < 1000 ppmv |             | < 10 ppmv | < 3 ppmv    |
| Methane   |             |             | < 1 ppmv  |             |
| Acidity (HCL)   | < 0.1 ppm/w | < 0.1 ppm/w | < 1 ppm/w | < 0.1 ppm/w |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 44L/Size 200  | 70                |
| 16L/Size 80   | 25                |
| 7L/Size 35    | 11                |

**Technical Data:**

Mol. Wt: 70.01  
Sp. Volume: 5.5 cu.ft/lb  
Pressure @ 70°F: 635 psig  
Valve Outlet: CGA 660/320  
DISS 716

**Shipping Information:**

DOT Name: Trifluoromethane  
Hazard Class: 2.2  
DOT No.: UN 1984  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 75-46-7

**TRIFLUOROMETHANE/HALOCARBON 23 - CHF<sub>3</sub>**

## TRIMETHYLAMINE (C<sub>3</sub>H<sub>9</sub>N): a colorless, flammable liquefied gas with a characteristic fishy odor

|                   |           |
|-------------------|-----------|
| Purity (Minimum): | Grade 2.5 |
| Specifications:   | 99.5%     |

Chemically Pure

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.  
All concentrations are on a mol/mol basis unless otherwise stated.  
Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| HT            | 550               |
| LP30          | 125               |

### Technical Data:

Mol. Wt: 59.1103  
Specific Volume: 6.54 cu.ft/lb  
Flammability Limits in Air: 2-11.6%  
Pressure @ 70°F: 13 psig  
Valve Outlet: CGA 705

### Shipping Information:

DOT Name: Trimethylamine, Anhydrous  
Hazard Class: 2.1  
DOT No.: UN 1083  
DOT Label: Flammable Gas  
CAS No.: 75-50-3

# Trimethylamine (C<sub>3</sub>H<sub>9</sub>N)



## VINYL CHLORIDE (C<sub>2</sub>H<sub>3</sub>Cl): A colorless flammable gas with a faint sweet odor.

|                           |                      |
|---------------------------|----------------------|
| <b>Purity:</b>            | <b>Grade 3.6</b>     |
| <b>Specifications:</b>    | <b>99.96%</b>        |
| Methyl Chloride & Ethyl C | < 150 ppmv           |
| Moisture                  | < 150 ppmv           |
| <b>Total Impurities</b>   | <b>&lt; 400 ppmv</b> |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*This product is analyzed liquid phase.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Weight (lbs) |
|---------------|-------------------|
| 1/2 ton       | 840               |
| LP30          | 200               |
| LP15          | 120               |
| LP05          | 39                |
| LP01          | 10                |
| 49L/Size 300  | 85                |
| 44L/Size 200  | 75                |
| 16L/Size 80   | 25                |
| 7L/Size 35    | 12                |

### Technical Data:

Mol. Wt: 62.50  
Pressure @ 70°F: 34 psig  
Flammability Limits: 3.6 - 33% in Air  
Valve Outlet: CGA 510  
LB CGA 170

### Shipping Information:

DOT Name: Vinyl Chloride, Stabilized  
Hazard Class: 2.1  
DOT No.: UN1086  
DOT Label: Flammable Gas  
CAS No.: 75-01-4



## XENON (Xe): A colorless, odorless, nonflammable inert gas

| Purity:             | Grade 4.5 | Grade 5    | Grade 5.5   |
|---------------------|-----------|------------|-------------|
| Specifications:     | 99.995%   | 99.999%    | 99.9995%    |
| Nitrogen            | < 5 ppmv  | < 4 ppmv   | < 1 ppmv    |
| Oxygen              | < 2 ppmv  | < 0.5 ppmv | < 0.05 ppmv |
| Carbon Monoxide     | < 1 ppmv  | < 0.5 ppmv | < 0.1 ppmv  |
| Carbon Dioxide      | < 1 ppmv  | < 0.5 ppmv | < 0.1 ppmv  |
| Moisture            | < 2 ppmv  | < 2 ppmv   | < 0.05 ppmv |
| Total Hydrocarbons  | < 1 ppmv  | < 0.5 ppmv | < 0.1 ppmv  |
| Krypton             | < 25 ppmv | < 2 ppmv   | < 2 ppmv    |
| Total Fluorocarbons |           |            | < 0.1 ppmv  |
| Argon               |           |            | < 1 ppmv    |
| Hydrogen            |           |            | < 0.5 ppmv  |
| Halocarbon 14       |           | < 0.1 ppmv |             |

*\*\*Moisture level guaranteed only when Electronic Fluorocarbons prepares the cylinders.*

*All concentrations are on a mol/mol basis unless otherwise stated.*

*Product sold on the basis of total impurities. Individual impurities may vary slightly.*

| Cylinder Size | Fill Volume (L) |
|---------------|-----------------|
| 49L/Size 300  | 10000           |
| 44L/Size 200  | 7500            |
| 16L/Size 80   | 2000            |
| 7L/Size 35    | 500             |

### Technical Data:

Mol. Wt: 131.3  
Sp. Volume: 2.9 cu.ft/lb  
Pressure @ 70°F: 1000 psia  
Valve Outlet: CGA 580

### Shipping Information:

DOT Name: Xenon  
Hazard Class: 2.2  
DOT No.: UN 2036  
DOT Label: Green, Non-Flammable Gas  
CAS No.: 7440-63-3

XENON - Xe