

# PURE GASES

## ETHYLENE $C_2H_4$

**General Characteristics:** A colorless, flammable gas with a faint odor.  
**Health Hazards:** A simple asphyxiant.

GAS GRADE/PURITY SPEC.	CYLINDER SIZE	CONTENTS	EQUIPMENT RECOMMENDATIONS
<b>RESEARCH GRADE</b> Min. Purity 99.99% <small>O<sub>2</sub> &lt; 15 ppm, N<sub>2</sub> &lt; 10 ppm, H<sub>2</sub>O &lt; 30 ppm,                      CH<sub>4</sub> &lt; 50 ppm, C<sub>2</sub>H<sub>6</sub> &lt; 50 ppm</small>	E01	1 lb	Double-stage high purity regulator, refer to page 137  High purity lecture bottle regulator, refer to page 148
	LB	0.25 lb	
Larger quantities available on request.			
<b>ULTRA HIGH PURITY</b> Min. Purity 99.9%	044	30 lbs	
<b>C. P. GRADE</b> Min. Purity 99.5%	016	11 lbs	
	LB	0.3 lb	
	044	30 lbs	
	016	11 lbs	
	LB	0.25 lb	

### TECHNICAL INFORMATION

Molecular Weight .....	28.05	Dot Name .....	Ethylene, Compressed
Specific Volume .....	13.8CF/lb	UN No. ....	UN1962
Fire Potential .....	2.7 - 36% in Air	Dot Class .....	2.1
TLV-TWA .....	None established	Dot Label .....	Flammable Gas
CGA Valve .....	350	Cas Registry .....	74-85-1
LB.....	180	Cylinder Pressure @ 70°F .....	1200 psig

## ETHYLENE OXIDE $C_2H_4O$

**General Characteristics:** A colorless, flammable, and liquefied gas.

**Health Hazards:** Toxic. Irritates the eyes and the mucous membranes. Can cause lung damage. Is considered to be carcinogenic and could possibly cause genetic damage. Liquid contact with skin causes irritation and damages similar to cold burns.

GAS GRADE/PURITY SPEC.	CYLINDER SIZE	CONTENTS	EQUIPMENT RECOMMENDATIONS
<b>HIGH PURITY</b> Min. Purity 99.9% (Liquid Phase) Ethylene Oxide may polymerize on storage, we recommend use within 3 months	016 <sup>1</sup>	2 lbs	Stainless-steel high purity single-stage regulator, refer to page 144
	LB	0.5 lb	
1. Available with full length dip tube, pressurized with nitrogen.			Stainless-steel lecture bottle regulator, refer to page 149
<b>C. P. GRADE</b> Min. Purity 99.7%	016	2 lbs	
	LB	0.5 lb	

### TECHNICAL INFORMATION

Molecular Weight .....	44.05	Dot Name .....	Ethylene Oxide
Specific Volume .....	8.8CF/lb	UN No. ....	UN1040
Fire Potential .....	3.0 - 100% in Air	Dot Class .....	2.3
TLV-TWA .....	1 ppm (ACGIH 1991-1992)	Dot Label .....	Poison Gas, Flammable Gas
CGA Valve .....	510	Cas Registry .....	75-21-8
LB.....	180	Cylinder Pressure @ 70°F .....	7 psig

## FLUORINE $F_2$

**General Characteristics:** Pale yellow gas with a sharp odor. Ignites most organic materials and many metals. Strongest oxidizing agent known. Reacts violently with water. Do not use fluorine without having obtained complete handling instructions.

**Health Hazards:** Highly toxic. Attacks the eyes and mucous membranes. Causes lung damage.

GAS GRADE/PURITY SPEC.	CYLINDER SIZE	CONTENTS	EQUIPMENT RECOMMENDATIONS
<b>ULTRA HIGH PURITY</b> Min. Purity 99.0%	008	100 L	* Only use equipment which is carefully cleaned and inert. Nickel and monel are recommended, please ask our representative.
	003	34 L	
<b>C. P. GRADE</b> Min. Purity 98.0%	008	100 L	
	<sup>1</sup> 003	34 L	

### TECHNICAL INFORMATION

Molecular Weight .....	38.00	Dot Name .....	Fluorine, Compressed
Specific Volume .....	10.2CF/lb	UN No. ....	UN1045
Fire Potential .....	Nonflammable	Dot Class .....	2.3
TLV-TWA .....	1ppm (ACGIH 1991-1992)	Dot Label .....	Poison Gas, Oxidizer
CGA Valve .....	679	Cas Registry .....	7782-41-4
LB.....	N/A	Cylinder Pressure @ 70°F .....	160 psig

<sup>1</sup>Size 003 = 4" (o.d.) x 16" (h)