

# PURE GASES

## HYDROGEN H<sub>2</sub>

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

**Health Hazards:** A simple asphyxiant.

GAS GRADE/PURITY SPEC.	CYLINDER SIZE	CONTENTS	EQUIPMENT RECOMMENDATIONS
<b>ULTRA HIGH PURITY</b> Min. Purity 99.999% H <sub>2</sub> O < 3 ppm, O <sub>2</sub> < 5 ppm	049	6.6 m <sup>3</sup>	Double-stage high purity regulator, refer to page 134  High purity lecture bottle regulator, refer to page 146
	044	6.0 m <sup>3</sup>	
	016	2.0 m <sup>3</sup>	
	010	1.3 m <sup>3</sup>	
	LB	57 L	
<b>HIGH PURITY</b> Min. Purity 99.995% H <sub>2</sub> O < 10 ppm, O <sub>2</sub> < 10 ppm	049	6.6 m <sup>3</sup>	
	044	6.0 m <sup>3</sup>	
	016	2.0 m <sup>3</sup>	
	010	1.3 m <sup>3</sup>	
<b>INDUSTRIAL</b> Min. Purity 99.8% H <sub>2</sub> O < 20 ppm, O <sub>2</sub> < 0.2%	049	6.6 m <sup>3</sup>	
	044	6.0 m <sup>3</sup>	
	016	2.0 m <sup>3</sup>	
	010	1.3 m <sup>3</sup>	
<b>EXTRA HIGH PRESSURE</b> Min. Purity 99.999% H <sub>2</sub> O < 3 ppm, O <sub>2</sub> < 5 ppm	6K (6000 psig)	14.5 m <sup>3</sup>	Piston regulator, refer to page 145

### TECHNICAL INFORMATION

Molecular Weight.....	2.02	Dot Name.....	Hydrogen Compressed
Specific Volume.....	192CF/lb	UN No.....	UN1049
Fire Potential.....	4.0 - 75% in Air	Dot Class.....	2.1
TLV-TWA.....	None established	Dot Label.....	Flammable Gas
CGA Valve.....	350, 3HP-703, 2HP-695	Cas Registry.....	1333-74-0
LB.....	180		

\* For ULSI (6N) and VLSI (5N5) grades hydrogen, see Electronic Gas section page 91.

## HYDROGEN BROMIDE HBr

**General Characteristics:** A colorless, non-flammable, liquefied and corrosive gas with a penetrating odor. Fumes in moist air. Highly corrosive in the presence of moisture.

**Health Hazards:** Toxic. Attacks the mucous membranes and the eyes. Can cause lung damage.

GAS GRADE/PURITY SPEC.	CYLINDER SIZE	CONTENTS	EQUIPMENT RECOMMENDATIONS
<b>C.P.</b> Min. Purity 99.8% (Liquid Phase)	044	31.8 kg	Stainless-steel high purity single-stage regulator, refer to page 142
	016	13.6 kg	
	010	5.0 kg	Stainless-steel lecture bottle regulator, refer to page 147
	LB	454 g	

### TECHNICAL INFORMATION

Molecular Weight.....	80.92	Dot Name.....	Hydrogen Bromide, Anhydrous
Specific Volume.....	4.8CF/lb	UN No.....	UN1048
Fire Potential.....	Non-flammable	Dot Class.....	2.3
TLV-TWA.....	3 ppm (ACGIH 1991-1992)	Dot Label.....	Poison Gas, Corrosive
CGA Valve.....	330	Cas Registry.....	10035-10-6
LB.....	180	Cylinder Pressure @ 70°F.....	320 psig

\* For ULSI (5N) and VLSI (4N5) grades hydrogen bromide, see Electronic Gas section page 92.