

**Acetylene**  
**Material Safety**  
**Data Sheet**

**BOGGS GASES**

620 Main Street  
 Titusville, FL 32796  
 Phone: (321) 267-4110  
 FAX: (321) 267-7171

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<b>EMERGENCY PHONE #:</b> Chemtrec 1-800-424-9300		Created: January 01, 2003   Revised: January 01, 2007	
<b>MANUFACTURER'S NAME:</b> BOGGS GASES 620 Main Street Titusville, FL 32796 Ph: (321) 267-4110 FAX: (321) 267-7171		<b>TRADE NAME AND SYNONYMS:</b> Acetylene, Ethyne, Ethine	<b>CHEMICAL NAME AND SYNONYMS:</b> Acetylene, Ethyne, Ethine
		<b>FORMULA</b> C <sub>2</sub> H <sub>2</sub> MW: 26.04	<b>CHEMICAL FAMILY:</b> Alkynes CAS #74-86-2

**HEALTH HAZARD DATA**

**EXPOSURE LIMITS:**

Acetylene is classified as a simple asphyxiant and has no threshold limit value (TLV).

**SYMPTOMS IF INGESTED, CONTACTED WITH SKIN, OR VAPOR INHALED:**

Symptoms such as headaches, dizziness, shortness of breath, and loss of consciousness may occur if the gas is present in quantities sufficient to dilute the oxygen concentration in air. Symptoms of anoxia occur only when the gas concentrations are within the flammable range and the mixture has not ignited. (DO NOT ENTER AREAS WITHIN THE FLAMMABLE RANGE DUE TO THE IMMEDIATE FIRE AND EXPLOSION HAZARD.) Use a suitable flammable gas meter (explosimeter) calibrated for acetylene to measure concentrations of gas in air.

**TOXICOLOGICAL PROPERTIES:**

Acetylene is a simple asphyxiant, irritant, and anesthetic. about 100 mg per liter may be tolerated for 0.5-1.0 hour. There is no experimental evidence of chronic harmful effects.

**RECOMMENDED FIRST AID TREATMENT**

First degree and minor second degree thermal burns from fires should be immersed in cool water for 30 minutes. Major second and third degree burns should be covered in the cleanest material available. Seek immediate aid of a physician. Persons suffering from lack of oxygen should be moved to areas with normal atmosphere. Assisted respiration and supplemental oxygen should be given if the victim is not breathing.

**FIRE AND EXPLOSION HAZARD DATA**

<b>FLASH POINT (Method Used)</b> 0F (-18C) (CC)	<b>AUTO IGNITION TEMP</b> 581F (305C)	<b>FLAMMABLE LIMITS</b> In air @ 1 atm	<b>LEL</b> 2.50%	<b>UEL</b> 100%
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<b>EXTINGUISHING MEDIA</b> Carbon dioxide, dry chemical, Halon	<b>ELECTRICAL CLASSIFICATION GROUP</b> Class 1, Group A
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**SPECIAL FIRE FIGHTING PROCEDURES**

Stop gas flow and fight fire conventionally. Use water spray to keep cylinders or other containers cool if exposed to fire. Keep personnel well away since containers can rupture violently when exposed to fire. For additional information, see Compressed Gas Association Safety Bulletin SB-4.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

ACETYLENE IS EXTREMELY FLAMMABLE AND EXPLOSIVE. IT MAY DECOMPOSE VIOLENTLY IN ITS FREE STATE UNDER PRESSURE IN EXCESS OF 15 PSIG. It burns with an intensely hot flame. Potential explosion hazard exists from reignition if fire is extinguished without shutting off acetylene sources. Ignites very easily due to low minimum ignition energy; very wide flammable limits. Acetylene gas has an approximate specific gravity of 1.0 and tends to stay in pockets rather than dissipate.

**PHYSICAL DATA**

<b>BOILING POINT (F)</b> @ 1 atm -119.2F (-84.0C)	<b>FREEZING POINT (F)</b> @ 1 atm -113.4F (-80.8C)
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<b>VAPOR PRESSURE (psia)</b> @ 62.2F (16.8C) 590 psia (40 atm)	<b>SOLUBILITY IN WATER</b> @ 64F (18C), 1 atm 1.0 cu.ft./cuftH <sub>2</sub> O	<b>VAPOR DENSITY (lb/cu ft)</b> @ 68F (20C), 1 atm 0.0681
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<b>SPECIFIC GRAVITY (AIR=1)</b> @ 68F (20C), 1 atm 0.906	<b>LIQUID DENSITY (lb/cu ft)</b> @ -116F (-82C), 1 atm 38.76	<b>SPECIFIC GRAVITY (H<sub>2</sub>O=1)</b> @ -116F (-82C), 1 atm 0.621
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**APPEARANCE AND ODOR**

Pure acetylene is colorless and odorless. Impurities in carbide generated acetylene impart a characteristic garlic-like odor.

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REACTIVITY DATA			
STABILITY	UNSTABLE	X	CONDITIONS TO AVOID Never utilize free gas outside the cylinder at pressures in excess of 15 psig. Avoid mechanical shocks to containers of acetylene. Never expose container to heat.
	STABLE		
<b>INCOMPATIBILITY (Materials to avoid)</b> Oxidizers such as oxygen and halogens. Forms explosive compounds with copper, brass, copper salts, Hg and Hg salts, K, Ag and Ag salts, and HNO <sub>3</sub> .			
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Acetylene will decompose into elemental carbon and hydrogen under the above conditions.			
HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	
SPILL OR LEAK PROCEDURES			
<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b> Ventilate area to prevent flammable mixture from forming. Remove sources of ignition, heat, sparks, etc. Avoid entering area of flammable atmosphere. Carefully remove cylinders with slow leaks to a remote outdoor location. Contact Boggs Gases for assistance.			
<b>WASTE DISPOSAL METHOD</b> Do not attempt to dispose of residual gaseous acetylene in cylinders. Return to Boggs Gases for disposal.			
SPECIAL PROTECTION INFORMATION			
<b>RESPIRATORY PROTECTION (Specify type)</b> Oxygen deficient atmospheres are in flammable range. DO NOT ENTER. Respirators will not function			
VENTILATION	LOCAL EXHAUST	SPECIAL Mechanical ventilation for enclosed storage areas must meet National Electric Code requirements for Class 1, Group A.	
Natural or mechanical where gas is present	MECHANICAL (General)		
<b>PROTECTIVE GLOVES</b> Ordinary leather work gloves are recommended for cylinder handling. Welders gloves are required for cutting and welding operations.			
<b>EYE PROTECTION</b> Safety glasses are recommended when handling cylinders. Welders goggles, etc., are required for cutting and welding.			
<b>OTHER PROTECTIVE EQUIPMENT</b> Leather sleeves, leather apron and other standard protective equipment for cutting and welding.			
SPECIAL PRECAUTIONS*			
<b>SPECIAL LABELING INFORMATION</b> DOT Shipping Name: Acetylene DOT Hazard Class: Flammable Gas DOT Shipping Label: Flammable Gas I.D. Number: UN 1001			
<b>SPECIAL HANDLING RECOMMENDATIONS</b> Acetylene shipments must be in accordance with Department of Transportation (DOT) regulations using the DOT "FLAMMABLE GAS" label. Consult DOT regulations for details on the shipping of hazardous materials.			
<b>SPECIAL STORAGE RECOMMENDATIONS</b> Use only in well ventilated areas. Acetylene gas cylinders contain gas at high pressure and should be handled with care. Use a pressure reducing regulator set at less than 15 psig. Always keep acetylene cylinders upright and secure cylinders when in use. Never expose and acetylene cylinder to heat. Always open and close acetylene valves slowly. Return cylinders to Boggs Gases with positive pressure and cylinder valve closed. Avoid dragging, rolling, or sliding cylinders, even for a short distance. Use a suitable handtruck. For additional handling recommendations on compressed gas cylinders, consult Compressed Gas Association Pamphlet P-1. is not in use. Avoid exposure to areas where salt or other corrosive chemicals are present. See Compressed Gas Association Pamphlet P-1 for additional storage recommendations.			
<b>SPECIAL PACKAGING RECOMMENDATIONS</b> Storage of 2500 cubic feet or less is permissible within buildings. Storage in excess of 2500 cubic feet must be outdoors or in well ventilated special rooms or buildings. Keep cylinders away from sources of heat. Storage should not be in heavy traffic areas to			
<b>OTHER RECOMMENDATIONS OR PRECAUTIONS</b>			

\* Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that s/he is in full compliance.