

MATERIAL SAFETY DATA SHEET**LIQUID CARBONIC INDUSTRIES**

810 JORIE BLVD. • OAK BROOK, IL 60521-2216 • 708 572-7500

ACETYLENE, Dissolved

 DOT: UN 1001
 HAZ. CL.: Division 2.1
 LABEL: Flammable Gas

May 1991

24 Hour Emergency Phone Numbers: (504) 673-8831; CHEMTREC (800) 424-9300

SECTION I--PRODUCT IDENTIFICATION
 CHEMICAL NAME: Acetylene
 COMMON NAME AND SYNONYMS: Ethyne, Ethine
 CHEMICAL FAMILY: Alkyne FORMULA: C₂H₂
SECTION II--HAZARDOUS INGREDIENTS

MATERIAL	VOLUME %	CAS NO.	1990-1991 ACGIH TLV UNITS
Acetylene	99+	74-86-2	Simple Asphyxiant OSHA 1989 TWA = None Listed

SECTION III--PHYSICAL DATA
 BOILING POINT (°F.): -118 (Subl. Pt.) SPECIFIC GRAVITY (H₂O=1): N/A (Gas)
 VAPOR PRESSURE: @ 70°F = 645 psia % VOLATILE BY VOLUME: N/A (Gas)
 VAPOR DENSITY (AIR=1): @ 70°F = .92 EVAPORATION RATE (BUTYL ACETATE=1): N/A (Gas)
 SOLUBILITY IN WATER: Soluble
 APPEARANCE AND ODOR: Colorless gas with garlic-like odor
SECTION IV--FIRE AND EXPLOSION HAZARD DATA
 FLASH POINT (METHOD USED): N/A (Gas) FLAMMABLE LIMITS: $\frac{LEL}{2.2}$ $\frac{UEL}{80-85}$
 EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical
 SPECIAL FIRE FIGHTING PROCEDURES: Stop flow of gas. Cool exposed containers with water spray. If possible, allow fire to burn itself out. Containers may rupture violently when heated by a fire. Vapors may travel a considerable distance to a source of ignition.
 UNUSUAL FIRE AND EXPLOSION HAZARDS:
 Acetylene decomposes above 30 psia in air if not dissolved in acetone. Metal fuse safety relief devices in the cylinders melt above 212°F releasing acetylene.
 Acetylene may decompose violently when heated or shocked. Refer to CGA Bulletin SB-4 "Handling Acetylene Cylinders in Fire Situations."
SECTION V--HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Yes	Skin?	No	Ingestion?	No
Carcinogenicity:	NTP?	No	IARC Monographs?	No	OSHA?	No

 EFFECTS OF OVEREXPOSURE: Inhalation: Moderate concentrations excluding an adequate air supply cause dizziness, drowsiness and eventual unconsciousness. May act as an anesthetic. Persons in ill health where such illness would be aggravated by exposure to acetylene should not be allowed to work with or handle this product.

 EMERGENCY AND FIRST AID PROCEDURES: If Inhaled: Remove to fresh air. If unconscious or breathing is difficult, administer artificial respiration with supplemental oxygen. Keep warm and at rest. Caution when entering contaminated area due to fire and explosion hazard. Safely ventilate area to less than LEL concentration.

(Continued on Supplemental Sheet)

SECTION VI--REACTIVITY DATA

STABILITY: UNSTABLE (x) STABLE ()

CONDITIONS TO AVOID: Undissolved gas dissociates above 30 psia. Can decompose violently when heated or shocked; even in the absence of air or oxygen.

INCOMPATABILITY (MATERIALS TO AVOID): Oxidizers, halogens, copper, silver, mercury.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen

HAZARDOUS POLYMERIZATION: MAY OCCUR () WON'T OCCUR (x)

CONDITIONS TO AVOID: N/A

SECTION VII--SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Evacuate all personnel upwind and away from affected area. Stop leak if possible. Personnel involved in attempting to stop leak should use self-contained breathing apparatus. Eliminate sources of ignition. Supply maximum ventilation with explosion-proof equipment.

WASTE DISPOSAL METHOD:

Locate leaking containers in a remote downwind area outside and allow to vent to atmosphere. Incinerate gas by controlled burning in flare if possible. Follow federal, state or local regulations.

SECTION VIII--SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Self-contained breathing apparatus available in event of leak or spill.

VENTILATION: LOCAL EXHAUST (x)
MECHANICAL (GENERAL) (x) To prevent accumulation above the LEL

PROTECTIVE GLOVES: PVC or rubber

EYE PROTECTION: Safety goggles or glasses

OTHER PROTECTIVE EQUIPMENT: Safety shoes, safety shower.

Use appropriate protective equipment when welding or cutting.

SECTION IX--SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect cylinders against physical damage. Store in cool, dry, well ventilated area, away from sources of heat and ignition and direct sunlight. Do not allow area where the cylinders are stored to exceed 125°F. Isolate from oxidizers such as oxygen, chlorine, and fluorine. Use a check valve or trap in acetylene discharge line to prevent hazardous backflow. Post "No Smoking or Open Flames" signs in storage or use area. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Electrical equipment should be non-sparking or explosion proof.

OTHER PRECAUTIONS: To avoid dissociation, do not allow the undissolved (free) gas to exceed 30 psia. Use only DOT or ASME coded containers. Earth ground and bond all lines and equipment associated with the acetylene system. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Close valve after each use and when empty. Acetylene cylinders must not be recharged except by or with consent of Liquid Carbonic. For more information refer to CGA Bulletin SB-2 "Oxygen Deficient Atmospheres" and CGA Pamphlet P-1 "Safe Handling of Compressed Gases in Containers" and NFPA Bulletin No. 58.

(Continued on Supplemental Sheet)

SUPPLEMENTAL SHEET - ACETYLENE MATERIAL SAFETY DATA SHEET

SECTION V--HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES: (Continued)

CAUTION: Welding or brazing may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z-49.1 "Safety in Welding and Cutting" published by the American Welding Society and OSHA safety regulations under 29 CFR 19.10.252 "Welding, Cutting and Brazing." Also see ACGIH TLVs 1990-1991 Appendix B, Section B2, "Welding Fumes." ARC RAYS can injure eyes and burn skin.

SECTION IX--SPECIAL PRECAUTIONS

OTHER PRECAUTIONS: (Continued)

Consult manufacturer's MSDS sheet on welding consumables and related products for reactivity and health hazard data, and for further information regarding welding fumes.

Acetylene cylinders contain acetone. Acetone is a toxic chemical subject to the reporting requirements of SARA, Title III, Section 313.

NFPA 704 NO. for acetylene = 1 4 3