PURITY

#258
Material Safety Data Sheet

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Acetylene

ISSUE DATE: April 12, 1986	TRADE NAME AND SYNONYMS: Acetylene, Ethyne		CAS NUMBER: 74-86-2
	CHEMICAL NAME AND SYNONYMS: Acetylene, Ethyne		
	FORMULA: C_2H_2	MOLECULAR WEIGHT: 26.0	CHEMICAL FAMILY: Alkyne

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT

Acetylene is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg. (ACGIH, 1984-85)

SYMPTOMS OF EXPOSURE

Inhalation: Low concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs cause unconsciousness.

TOXICOLOGICAL PROPERTIES

As a narcotic gas or intoxicant causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels has not shown deleterious effects. The major property is the exclusion of an adequate supply of oxygen to the lungs.

Listed as Carcinogen or Potential Carcinogen	National Toxicology Program	Yes ☐ No ☒	I.A.R.C. Monographs	Yes ☐ No ☒	OSHA	Yes ☐ No ☒

RECOMMENDED FIRST AID TREATMENT

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ACETYLENE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND EXPLOSION HAZARD.

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Medical assistance should be sought immediately.

RESPIRATORY PROTECTION (Specify type)
Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.

VENTILATION	LOCAL EXHAUST	SPECIAL
Hood with forced ventilation	To prevent accumulation above the LEL.	N/A
	MECHANICAL (Gen.) In accordance with electrical codes	OTHER N/A

PROTECTIVE GLOVES
PVC or rubber in laboratory; as required for cutting & welding.

EYE PROTECTION
Safety goggles or glasses

OTHER PROTECTIVE EQUIPMENT
Safety shoes, safety shower

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION
DOT Shipping Name: Acetylene DOT Hazard Class: Flammable gas
DOT Shipping Label: Flammable gas ID No.: UN 1001

SPECIAL HANDLING RECOMMENDATIONS
Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when removing gas from the cylinder. DO NOT ALLOW THE FREE GAS TO EXCEED 30 PSIA (207 kPa) @ 70°F (21.1°C). Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

SPECIAL STORAGE RECOMMENDATIONS
Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "No Smoking or Open Flames" signs in the storage or use area. There should be no sources of ignition in the storage or use area.

SPECIAL PACKAGING RECOMMENDATIONS
Since acetylene will explode or combust if its pressure exceeds 30 psia (207 kPa) it is shipped dissolved in acetone or dimethylformamide which is dispersed in a porous mass within the cylinder. A single cylinder of acetylene cannot be used if the volumetric demand is high, since acetone may be drawn from the cylinder with the acetylene. It has, therefore, become standard practice to limit the withdrawal of acetylene from a single cylinder to an hourly rate not exceeding one tenth of the cylinder's volumetric contents.

Most metals, except silver, copper, mercury or brasses with more than 66% copper, are compatible (non corrosive) with acetylene.