

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Flammable over an extremely wide range in air. Explosive reactions may occur on ignition. Reacts explosively with halogens and halogenated compounds.

PHYSICAL DATA

BOILING POINT Sublimation point = -118.8°F (-83.8°C)	LIQUID DENSITY AT BOILING POINT Solid density @ sublimation point = 45.51 lb/ft ³ (729 kg/m ³)
VAPOR PRESSURE 645 psia (4450 kPa) @ 70°F (21.1°C)	GAS DENSITY AT 70°F 1 atm @ 60°F (15.6°C) = .0691 lb/ft ³ (1.107 kg/m ³)
SOLUBILITY IN WATER @ 68°F (20°C) Bunsen coefficient = 1.047	FREEZING POINT Triple point = -113°F (-80.55°C)
APPEARANCE AND ODOR Pure acetylene is a colorless gas with an ethereal odor. Commercial (carbide) acetylene has a distinctive garlic-like odor. Spec. Grav. (Air = 1.0) = 0.91 @ 70°F.	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED) Gas	AUTO IGNITION TEMPERATURE 585°F (296°C)	FLAMMABLE LIMITS % BY VOLUME LEL = 2.2; UEL = 80-85.
Note: Pure acetylene can ignite by decomposition above 30 psia (207 kPa); therefore, the UEL is 100% if the ignition source is of sufficient intensity.		
EXTINGUISHING MEDIA Carbon dioxide; dry chemical		ELECTRICAL CLASSIFICATION Class 1, Group A
SPECIAL FIRE FIGHTING PROCEDURES If possible, stop flow of escaping gas. Use water spray to cool surrounding containers. Keep personnel away since heated or burning cylinders can rupture violently.		
UNUSUAL FIRE AND EXPLOSION HAZARDS GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURES ABOVE 30 PSIA (207 kPa). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate.		

REACTIVITY DATA

STABILITY Unstable	X	CONDITIONS TO AVOID Do not allow the free gas (outside of cylinder) to exceed 30 psia. Cylinders should not be exposed to sudden shock or sources of heat.
Stable	N/A	N/A
INCOMPATIBILITY (Materials to avoid) Oxygen and other oxidizers including all of the halogens and halogen compounds. Forms <u>explosive acetylides</u> compounds with copper, mercury, silver, brasses containing more than 66% copper and brazing materials containing silver or copper.		
HAZARDOUS DECOMPOSITION PRODUCTS Carbon and hydrogen		
HAZARDOUS POLYMERIZATION May Occur	N/A	CONDITIONS TO AVOID N/A
Will Not Occur	X	N/A

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact the closest Purity Cylinder Gases, Inc. location.
WASTE DISPOSAL METHOD Do not attempt to dispose of waste or unused quantities. Return in the shipping container <u>properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place</u> to Purity Cylinder Gases, Inc. for proper disposal. For emergency disposal, contact the closest Purity Cylinder Gases, Inc. location.

**OTHER RECOMMENDATIONS OR PRECAUTIONS**

Earth-ground and bond all lines and equipment associated with the acetylene system. Electrical equipment should be *non-sparking or explosion proof*. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).

Transport cylinders in well-ventilated vehicles, upright and suitably restrained to prevent movement. Possible increasing fire intensity and explosion hazard if cylinders are so piled or stacked that burning gas escaping from a melted fuse plug (pressure relief device) plays on other cylinders.

*Various Government agencies (e.g., 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 may not be contained herein. The customer or user of this product should be familiar with these regulations.