

Fine Gas Company Limited

Document Number
QCS/SDS/07

Safety Data Sheet: Dissolved Acetylene (C₂ H₂)

Revision Number
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1	Product	Acetylene (C ₂ H ₂)
2	Hazard Identification	Can cause rapid Suffocation. Extremely flammable. May form Explosive mixture in air. Immediate fire and explosion hazard exists when mixed with air. High concentrations can cause rapid suffocation within the flammable range. Don't enter the range and avoid breathing gas
3	Potential Health Effects	
3.1	Breathing	May cause anesthetic effects. In high concentrations, may cause asphyxiation. Symptoms may include loss of mobility and consciousness. Patient may not be aware of this and it may bring about so quickly that patient may not be able to protect him / her self
3.2	Contact	Nil
4	Aggravated Medical Condition	Exposure to oxygen deficient atmosphere may cause Dizziness, Salivation, Nausea, Vomiting, Loss of mobility and consciousness
5	First Aid Measures	Remove Patient to uncontaminated area. Keep him / her warm and rested. Call a doctor and apply artificial respiration if breathing gets stopped
5.1	Eye Contact	Rinse immediately with plenty of water for at least 15 minutes
5.2	Skin Contact	Wash with water and soap as a precaution
6	Fire Fighting Measures	
6.1	General	Upon exposure to intense heat or flame, cylinder will vent rapidly and can rupture violently. Keep cylinders and surrounding area cool with water spray. Extinguish fire only if gas flow can be stopped. If possible, shut off the source of the gas and allow the fire to burn itself out. Don't extinguish a leaking gas flame unless absolutely necessary. Spontaneous / explosive reignition may occur. So, Evacuate personals immediately to protect them from cylinder fragments and toxic fumes should a rupture occurs. Extinguish any other fire. Move away from fire immediately and spray water on it from a protected distance. Keep adjacent cylinders cool by spraying huge amount of water on it until the fire is burnt out. Most cylinders are designed to vent contents when exposed to elevated temperatures
6.2	Specific Hazard	Wear self contained breathing apparatus for fire fighting / rescue operation if necessary
7	Accidental Release Measures	Evacuate personnel's to safe and uncontaminated areas. Remove all sources of ignition. Wear self contained breathing apparatus when entering gas concentrated areas unless atmosphere is proved to be safe

8 Handling & Storage

Acetylene cylinders are heavier than other cylinders because they are packed with a porous filter material and acetone. Never use gas in excess of 15 PSIG pressure. Protect cylinders from any physical damage like dragging, rolling, sliding, dropping etc. Don't allow storage area temperature to reach more than 50 °C (122 °F). Only experienced and trained personnel are allowed to handle compressed gases. Use trolley or cart for moving cylinder even for a shorter distance. Ensure complete gas system has been checked for leaks before use. Open valve slowly. If user feels any difficulty in the operation of the cylinder valve, never use the cylinder or try to repair / modify its valves or safety relief devices. Close valve after use or when cylinder is empty. Don't subject cylinder to any mechanical shock or lifting it by its valve. Don't use cylinders for uses for which they are not designed or specified. Never strike an arc on a compressed gas cylinder or making it a part of the electrical circuit. Don't allow any ignition, spark or flame in the cylinder handling & storage area. Never recompress the gas or its mixture or transfer gas from one cylinder to another. Never use any electrical or any other heating device to raise the pressure of the gas cylinder. Cylinders should be stored in a purpose built compound which should be well ventilated, preferably in an open air. Stored cylinders should be periodically checked for general condition or leakage. Always safe guard cylinders from rust and extreme weather conditions. Full and empty cylinders should be properly segregated in the storage area. Display board should be hanged outside storage & handling area of "No Smoking / Open Flames". Toxic and flammable gases should always be stored in a minimum quantity. Secure cylinder vertically & properly to prevent them from toppling. Return empty containers in a timely manner. Acetylene gas storage should be separated from oxygen and other oxidizers by a minimum distance of 20 ft or by a non-combustible material barrier for at least 5 ft. All electrical equipment in the storage area should be compatible with flammable materials stored.

9 Personal Protective Equipment

9.1 Hands Protection

Work gloves are recommended while handling cylinders

9.2 Eyes Protection

Safety Glasses are recommended for eyes protection

9.3 Skin & Body Protection

Wear appropriate personal protective equipment like Safety Shoes, flame resistant protective clothes etc. when handling cylinders

10 Physical & Chemical Properties

10.1 Physical Status

Dissolved / Compressed Gas

10.2 Colour

Colourless

10.3 Odour

Garlic like Smell

10.4 Boiling Point

-84 °C (-119.2 °F). Gas ignites at 305 °C (581 °F)

11 Stability & Reactivity

Stable under normal conditions. Cylinders should not be exposed to sudden shock or sources of heat. May form explosive mixtures with air and oxidizing agents. Under certain conditions, gas

11 Stability & Reactivity

can react with copper, silver and mercury to form acetylides, compounds which can act as ignition source. Brass containing less than 65% copper in the alloy and certain nickel alloys are suitable for acetylene service under normal conditions. Acetylene can react explosively when combined with oxygen and oxidizers including all halogens and their compounds. The presence of moisture, certain acids or alkaline materials tends to enhance the formation of copper acetylides

Prepared By Management Representative	Reviewed By Production Manager	Approved By General Manager	Issued On 01/04/06
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