



MATERIAL SAFETY DATA SHEET (MSDS) Dissolved Acetylene (C₂H₂)

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name	Acetylene
Chemical Formula	C ₂ H ₂
Trade Names	Acetylene, Compressed
Colour coding	Compressed, IG, EP, IG Zero & UHP cylinders all have maroon bodies. Relevant decals or stencilling depict actual grades. maroon body with a Brass or Metal valves valve guard
Valve	Compressed, IG, EP, IG Zero & Medical grades have 3 SO- Brass, 5/8 inch BSP right hand female valves. UHP grade has the Neriki-Brass 5/8 inch BSP Left hand female valve fitted.
Company Identification	Rakeeth industrial gases co. LLC 483/1 AL SAJAA industrial area Sharjah, UAE Tel No: 065265161 Fax No: 0565264603

EMERGENCY NUMBER 997 UAE CIVIL DEFENCE

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Acetylene
Chemical Family	Alkynes
CAS No	74-86-2
UN No	1001
Hazchem Warning	flammable Gas

3 HAZARDS IDENTIFICATION

Main Hazards

All cylinders are transportable gas containers. Acetylene is flammable, but readily supports combustion. Never permit oil, grease or other readily combustible substance to come into contact with high concentrations of Acetylene. Acetylene is a highly flammable colourless gas of distinct odour. The high solubility of acetylene in acetone (300:1) acetone. Acetylene cylinders are filled with porous material which carries the acetone.

Hazards

- Forms an explosive mixture with air
- Can form explosive acetylides with unalloyed copper, silver, mercury, brass containing more than 66% copper, and brazing materials containing copper and silver
- Can spontaneously decompose within equipment and pipework under certain flow, temperature and pressure conditions.

Label Elements

Hazard Pictograms



Signal Word: Danger

Precautionary Statements:

- P220: Keep/Store away from clothing/.../ combustible materials (manufacturer/supplier or the competent authority to specify applicable ignition sources).
- P244: Keep reduction valves free from grease and oil.
- P370+P376: In case of fire: stop leak if safe to do so.
- P403: Store in well ventilated place.

Hazard Statements:

- H270: May cause or intensify fire; oxidiser.

4 PRECAUTION TO USE

- Fit and maintain flashback arrestors in equipment
- Keep hot work and sparks away from cylinder relief
- Use only approved equipment
- Do not use at pressure greater than 150 kPa
- Open cylinder valve slowly
- Close cylinder valve when not in use
- Cylinders should be secured from falling over
- Excessive flow rates may remove acetone from the
- Use personal protective equipment

5 FIRE FIGHTING MEASURES

Extinguishing Media

As Acetylene flammable, but strongly supports combustion; the correct type of extinguishing should be used depending on the combustible material involved.

Specific Hazards

Acetylene vigorously accelerates combustion. Materials that would not normally burn in air could combust vigorously in atmospheres having high concentrations of Acetylene.

Emergency Actions

If possible, shut off the source of escaping Acetylene. Evacuate area. All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance. Cylinders which have been exposed to excessive heat should be clearly identified and returned to supplier.

Protective Clothing Safety goggles, gloves and safety shoes should be worn when handling cylinders.

Environmental Precautions

As the gas is heavier than air, pockets of Oxygen-enriched air could occur. These could lead to the fire spreading rapidly. If possible, ventilate the affected area.

6 Uses and Features

- Acetylene is the best and most versatile fuel gas for welding, straightening, bending, forming, hardening, cutting
- compared to MAPP gas, propylene and propane and natural gas (2,910°C, 2,895°C, 2,800°C and 2,780°C respectively)
- Acetylene is used as a fuel gas for oxy-acetylene welding, cutting, general localised heating, flame hardening, flame
- other processes requiring a high temperature flame
- Specially purified instrument grade acetylene which has such impurities (arsine, phosphine, ammonia and hydrogen
- instrumentation and navigational beacons.

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Cylinders of acetylene should not be stored near cylinders of oxygen or other combustible gases. Acetylene cylinders may be stacked horizontally provided that they are firmly secured at each end to



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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Hazards

Avoid exposure to gas-enriched atmospheres, as this could result in clothing becoming saturated by the effect. On ignition the clothing could burn fiercely resulting in serious burns.

Engineering Control Measures

Engineering control measures are preferred to reduce exposure to gas-enriched atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near, floor level.

Personal Protection

Safety goggles, gloves and shoes should be worn when handling cylinders.

Skin

No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Chemical Symbol	C ₂ H ₂
Molecular Weight	26.04g/mol
Specific Volume @ 1atm 60°C	14.463 ml/g
Boiling Point	103 °C
Density, gas @ 101,325 kPa and 20°C	1,1 kg/m ³
Relative density (Air = 1) @ 101,325 kPa 1,053	
Solubility in Water @ 101.325 kPa @ 25 °C	
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid

Acetone is added to acetylene cylinders to help stabilize the gas. If an operator exceeds recommended flow rates, the cylinder will not only withdraw gas but will also withdraw the acetone. The reduction of acetone can cause the cylinder to become unstable and dangerous

Chronic Toxicity	No known effect
Carcinogenicity	No known effect
Mutagenicity	No known effect
Reproductive Hazards	No known effect

11 REGULATORY INFORMATION

EEC Hazard class flammable

Reference SANS 10234 and its supplement.

12 DISPOSAL CONSIDERATIONS

Disposal Methods

Small amounts may be blown to atmosphere under controlled conditions. Large amounts should only be handled by gas supplier.

Disposal of Packaging

The disposal of containers must only be handled by the gas supplier. prevent rolling. Prevent dirt, grit of any sort, oil or any other lubricant from entering the cylinder valves, and store cylinders well clear of any corrosive influence, e.g., battery acid. Compliance with all relevant legislation is essential. Use a "first in – first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Keep out of reach of children

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

UN No	1001
Hazchem warning	2 flammable Gas



SEA TRANSPORTATION

IMDG	1001
Class	
Packaging group	
Label	flammable Gas

AIR TRANSPORTATION

ICAO/IATA Code	1001
Class	flammable
Packaging group	N/A
Packaging instructions	
- Cargo	200
- Passenger	200
Maximum quantity allowed	
- Cargo	100kg
- Passenger	75kg