



Material Safety Data Sheet

ACETYLENE, Compressed Dissolved (C₂H₂)

Infosafe™ 8AEFA **Issue Date** April 2008 **Status** ISSUED by AIRLIQUI **BS:** 1.9.21
No.

Not classified as hazardous

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name ACETYLENE, Compressed Dissolved (C₂H₂)

Product Use Acetylene is used as a fuel gas for oxy-welding, cutting, heating, hardening, flame cleaning, spalling of concrete, etc.

Company Name Air Liquide Australia Limited (ABN 57 004 385 782)

Address Level 9, 380 St. Kilda Road Melbourne
Victoria 3004

Emergency Tel. 1800 812588 (24hr)

Telephone Number/Fax Tel: (03) 9697 9888
Fax: (03) 9690 7107

Other Names Not Available

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
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3. HAZARDS IDENTIFICATION

Heating may cause an explosion.
Explosive with or without contact with air.
Extremely Flammable.

Chronic Effects Long term exposure to acetylene has no known health effects.

Inhalation Asphyxiant in high concentrations. Low concentrations (10-20% in air) cause symptoms similar to those of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs, causes unconsciousness. Symptoms of asphyxiation include rapid and gasping respiration, rapid fatigue and vomiting.

Ingestion Unlikely route of exposure considering acetylene is gaseous at room temperature.

Skin Unlikely route of exposure considering acetylene is gaseous at room temperature. Contact of liquid acetylene may cause temporary irritation.

Eye Unlikely route of exposure considering acetylene is gaseous at room temperature. Contact of liquid acetylene may cause temporary irritation.

4. FIRST AID MEASURES

Inhalation Remove the source of contamination or move the victim to fresh air. Ensure airways are clear and have qualified person give oxygen through a face mask if breathing is difficult. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion Unlikely route of exposure.

Skin Wash affected area thoroughly with copious amounts of running water. Remove contaminated clothing and wash before reuse. If symptoms develop seek medical attention.

Eye If in eyes wash out immediately with water. If symptoms persist seek medical attention.

First Aid Facilities Eyewash and normal washroom facilities must be provided, and a safety shower is strongly recommended.

Advice to Doctor Advise doctor that victim has been exposed to an oxygen deficient atmosphere and exposed to acetylene which is a known anaesthetic. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media Use dry agent, foam or water mist.

Specific Methods Use water spray to cool surrounding gas cylinders.

Specific Hazards Extremely flammable. Avoid all sources of ignition, heat and naked flames. Ensure adequate ventilation to prevent formation of an explosive mixture with air and flashback. Remove sources of re-ignition. Prevent build-up of electrostatic charges (i.e. by grounding). Containers may rupture/explode when heated.

Hazardous Combustion Products Under fire conditions this product may emit toxic and/or irritating fumes including carbon monoxide and carbon dioxide.

Precautions in connection with Fire Fire-fighters should wear full protective clothing and self contained breathing apparatus (SCBA) operated in positive pressure mode.

Flash Point Not applicable

Ignition Temperature 305°C

Flammable Limits UEL 85%

Flammable Limits LEL 2.2%

Flammability Extremely flammable substance. Remove all sources of ignition, heat and naked flames. May emit toxic fumes under fire conditions. Earth all containers to reduce the possibility of sparks from static electricity. May form flammable mixtures with air.

6. ACCIDENTAL RELEASE MEASURES

Remove all sources of ignition. Evacuate all unnecessary personnel. Use self-contained breathing apparatus (S.C.B.A) and full protective clothing to minimise exposure. Allow gas to vent safely to atmosphere, preferably in well ventilated, remote location. Monitor oxygen concentration in confined spaces. Check for leaks using pressure drop test or soapy

water on joints and outlets. Shut cylinder valve to stop leak if possible and safe to do so. Use non-sparking tools. Contact Air Liquide for emergency assistance. If leak is in equipment, purge thoroughly with inert gas prior to repair attempts.

7. HANDLING AND STORAGE

Handling

Use in a well ventilated area. Wear appropriate protective equipment. It is essential that all who come into contact with this material, maintain high standards of personal hygiene i.e. washing hands prior to eating, drinking, smoking or going to the toilet. DO NOT enter confined spaces where gas may have collected. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Disconnect regulator before transporting or storing cylinders. Cylinders should be moved by hand-truck or cart designed for that purpose. Avoid any contact with oil or grease particularly to the cylinder valve. During maintenance operations that require the opening of contaminated process equipment, the flow of gas should be stopped and a delay enforced to allow levels decline. The atmosphere must be checked prior to maintenance entering any area where gas has previously accumulated and protective equipment worn prior to entering area or working on contaminated process equipment to prevent skin contamination, ingestion or inhalation of any hazardous residue. Do NOT pressurise, cut, heat or weld empty containers as they contain hazardous residues.

Storage

Store in a cool, dry, well ventilated area and away from heat and ignition sources. Outside or detached storage is preferred. Cylinders shall be stored upright on a level, fireproof floor, secure in position and protected from damage. Full cylinders shall be stored separately from empties. Keep cylinder valve cover on. Label empty cylinders and store full cylinders separately from empty ones. Consider leak detection and alarm systems, as required. Limit quantity in storage.

Restrict access to storage area and post warning signs. Inspect periodically for deficiencies such as damage or leaks. Have fire extinguishers available in and near the storage area. Comply with all applicable regulations for the storage and handling of compressed gases.

Acetylene in a free state under pressure may decompose with explosive violence. NEVER USE FREE GAS OUTSIDE THE CYLINDER AT PRESSURES EXCEEDING 150 kPa (GAUGE).

Acetylene is dissolved in acetone or other solvents under pressure and supplied in cylinders.

CYLINDER COLOUR: AS2700 R65 Claret.

CYLINDER VALVE OUTLET: AS 2473 Type 20.

Storage

Temperatures < 55°C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure standards have been established for this material by the National Occupational Health And Safety Commission (NOHSC). Acetylene is an asphyxiant gas which, when present in an atmosphere in high concentrations, can lead to reduction of oxygen concentration by displacement or dilution. It is not appropriate to recommend an exposure standard for an asphyxiant, rather it should be required that a sufficient oxygen concentration be maintained.

Respiratory Protection Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. Reference should be made to AS/NZS 1715, Selection, Use and maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.

Eye Protection Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection Wear gloves of impervious material such as PVC or rubber gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection Suitable protective clothing should be worn e.g. cotton overalls buttoned at neck and wrist. When large quantities are handled the use of plastic aprons and rubber boots is recommended.

Eng. Controls Do not reticulate at pressure > 150 kPa. (Acetylene can ignite by decomposition above 200 kPa). Provide ventilation to area of use to prevent accumulation of acetylene at flammable concentrations. Provide adequate local exhaust and dilution (general) ventilation and supply sufficient replacement air to maintain oxygen concentration above 18%.

Biological Limit Values No biological limit allocated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colourless gas with a slight 'garlic' odour.

Melting Point Not applicable.

Boiling Point	-75°C
Solubility in Water	1.72 m ³ /kg @ 0°C
Specific Gravity (H₂O=1)	Not applicable
pH Value	Not applicable
Vapour Pressure	Not applicable
Vapour Density (Air=1)	0.908 @ 15°C (air=1)
Density	1.113 kg/m ³ @ 101.3 kPa & 15°C
Flash Point	Not applicable
Flammability	Extremely flammable substance. Remove all sources of ignition, heat and naked flames. May emit toxic fumes under fire conditions. Earth all containers to reduce the possibility of sparks from static electricity. May form flammable mixtures with air.
Ignition Temperature	305°C
Flammable Limits LEL	2.2%
Flammable Limits UEL	85%
Molecular Weight	26.04
Other Information	Critical Temperature = 35.2°C

10. STABILITY AND REACTIVITY

Stability	UNSTABLE - shock sensitive in the liquid state. Do not allow free gas (outside of cylinder) to exceed 100 kPag.
Hazardous Polymerization	Temperatures as low as 121°C at high pressure, or at low pressure in the presence of a catalyst are sufficient to initiate a polymerisation reaction. The hazard here is that the polymerisation normally liberates heat and may, therefore, lead to ignition and decomposition of acetylene if conditions permit.
Materials to	Oxygen and other oxidizers including all halogens and halogen

Avoid compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing >66% copper and brazing materials containing silver or copper.

Hazardous Decomposition Products Thermal decomposition will result in the release of toxic and/or irritating fumes.

Hazardous Reaction Acetylene will decompose violently with cylinder failure. Heating may cause explosion and explosive with or without air contact.

Conditions to Avoid Do not expose cylinders to sudden shock or heat.

11. TOXICOLOGICAL INFORMATION

Toxicology Information No toxicity data is available for this product.

Inhalation Asphyxiant in high concentrations. Low concentrations (10-20% in air) cause symptoms similar to those of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs, causes unconsciousness. Symptoms of asphyxiation include rapid and gasping respiration, rapid fatigue and vomiting.

Ingestion Unlikely route of exposure considering acetylene is gaseous at room temperature.

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Chronic Effects Long term exposure to acetylene has no known health effects.

12. ECOLOGICAL INFORMATION

Environment Protection Do not allow this material to enter the environment.

Mobility Not available.

Persistence / Degradability Not available.

Ecotoxicity No data is available for this material.

13. DISPOSAL CONSIDERATIONS

Waste treatment procedures must be performed by trained, experienced personnel with appropriate protective equipment in approved treatment facilities, and in accordance with all federal, state and local government requirements. Reuse or recycling may also be possible and should be investigated. Alternatively, return properly labelled cylinders to the supplier with all valve outlet plugs, caps and protection caps secured, for proper disposal.

14. TRANSPORT INFORMATION

This material is classified as a Class 2.1 Dangerous Good according to the Australian Code for the Transport of Dangerous Goods. Class 2.1 Flammable Gases shall not be loaded or packed in the same vehicle or freight as: - Class 1, Explosives - Class 3, Flammable Liquids (If both the Class 2.1 and Class 3 dangerous goods are in bulk), - Class 4.1, Flammable Solids - Class 4.2, Spontaneously Combustible Substances - Class 4.3, Dangerous When Wet Substances - Class 5.1, Oxidising Agents - Class 5.2, Organic Peroxides - Class 7, Radioactive Substances.

U.N. Number 1001

Proper Shipping

Name ACETYLENE, DISSOLVED

DG Class 2.1

Hazchem Code 2[S]E

Packaging

Method 3.8.2

Packing Group

EPG Number 2A1

IERG Number 04D

15. REGULATORY INFORMATION

Risk Phrase

R5 Heating may cause an explosion.
R6 Explosive with or without contact with air.
R12 Extremely Flammable.

Safety Phrase S9 Keep container in a well ventilated place.
S16 Keep away from sources of ignition - No smoking.
S33 Take precautionary measures against static discharges.

**Poisons
Schedule** Not Scheduled

Hazard Category Extremely Flammable

16. OTHER INFORMATION

**Contact
Person/Point** 24 HOUR EMERGENCY CONTACT: The Operator: 1800 812 588

Regional Offices:
Victoria
40 Bunnett Street, North Sunshine 3020. Tel. (03) 9290 1100
Fax (03) 9290 1199
New South Wales
43-47 Pine Road, Fairfield 2165. Tel. (02) 9892 9777 Fax (02)
9892 1454
4 Kullara Close, Beresfield. 2322. Tel (02) 4949 1700 Fax (02)
4949 1750
Lot 5, Shellharbour Road, Port Kembla 2505. Tel. (02) 4274
4044 Fax (02) 4276 3879
South Australia
164 Philip Highway, Elizabeth 5112. Tel. (08) 8209 3600 Fax
(08) 8255 9885
Queensland
759 Progress Road, Wacol 4076. Tel. (07) 3246 6363 Fax (07)
3271 2589
Ingham Road, Cnr. Dundee Street,
Bohle, Townsville, 4818
Tel. (07) 4774 8276 Fax (07) 4774 8313
Featherstone Street, Parkhurst
Rockhampton, 4702. Tel. (07) 4936 1066 Fax (07) 4936 1024
68 Bunda Street, Cairns 4870. Tel. (07) 4031 1566 Fax (07)
4051 4293
Tasmania
11 Windsor Street, Invermay 7248. Tel. (03) 6334 9666 Fax (03)
6334 9600
Air Liquide W.A. Pty Ltd
A.B.N. 52 008 694 166
Wesfarmers Energy Building, Campus Drive (off Murdoch Drive),
Murdoch, WA 6150
Tel. (08) 9312 9111 Fax (08) 9313 8108
AIR LIQUIDE AUSTRALIA LIMITED
A.B.N. 57 004 385 782
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(03) 9697 9888 Fax (03) 9690 7107
www.airliquide.com.au

SDS History MSDS Reviewed: April 2008
MSDS Created: April 2003

Poisons
Schedule Not Scheduled

Hazard Category Extremely Flammable

Molecular
Weight 26.04

End of MSDS

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