
1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name ACETYLENE
Synonym(s) 001 - SDS NUMBER • DISSOLVED ACETYLENE • ETHYNE • PRODUCT CODES: 040, 041

1.2 Uses and uses advised against

Use(s) FUEL • INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Website <http://www.boc.com.au>

1.4 Emergency telephone number(s)

Emergency 1800 653 572 (24/7) (Australia only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO AUSTRALIAN WHS REGULATIONS

GHS classification(s) Gases Under Pressure: Dissolved gas
Flammable Gases: Category 1

2.2 Label elements

Signal word DANGER

Pictogram(s)



Hazard statement(s)

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Prevention statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Response statement(s)

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.

Storage statement(s)

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statement(s)

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
ACETYLENE	74-86-2	200-816-9	>98%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Adverse effects not expected from this product.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor.
Skin	Adverse effects not expected from this product.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	No information provided.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

4.3 Immediate medical attention and special treatment needed

Treat for asphyxia.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services or manufacturer's advisor. Drench and cool cylinders with water spray from protected area at a safe distance. If it is absolutely necessary to extinguish the flame, use only a dry chemical powder extinguisher. Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders.

5.2 Special hazards arising from the substance or mixture

Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

5.4 Hazchem code

2SE	
2	Fine Water Spray.
S	Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Dilute spill and run-off.
E	Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Eliminate all sources of ignition. Consider the risk of potentially explosive atmospheres.

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6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Use of safe work practices are recommended to avoid inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement. Never open an acetylene cylinder valve without the regulator attached. Gas regulator of suitable pressure and flow rating fitted to cylinder and manifold with low pressure gas distribution equipment which controls fuel gas mixture and flame. The regulator and other equipment must be compatible with the product and suited for the particular use. Never "sniff" acetylene as it may ignite spontaneously. Instead, carefully inspect the outlet and if there are any signs of dirt, blow it out with a jet of clean compressed air or nitrogen.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible substances and sources of ignition. Cylinders should be stored: upright, prevented from falling, in a secure area; below 45°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits. Post "No Smoking or Open Flames" signs in the storage areas. Refer to applicable legislation on flammable storage quantity restrictions. Never transfer acetylene to another cylinder or other container.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Acetylene	SWA (AUS)	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Provide suitable ventilation to minimise or eliminate exposure. Confined areas (e.g. tanks) should be adequately ventilated or gas tested. Flammable/explosive vapours may accumulate in poorly ventilated areas.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or cotton gloves.
Body	Wear coveralls and safety boots.
Respiratory	If using product in a confined area, wear an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	GARLIC-LIKE ODOUR
Flammability	EXTREMELY FLAMMABLE
Flash point	< 23°C
Boiling point	-84°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	0.906 (Air = 1)
Specific gravity	NOT APPLICABLE
Solubility (water)	SOLUBLE
Vapour pressure	4700 kPa @ 25°C
Upper explosion limit	80 % to 85 %
Lower explosion limit	2.5 %
Partition coefficient	NOT AVAILABLE
Autoignition temperature	305°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Critical temperature	36.3°C (dissolved in acetone and porous medium)
Cylinder pressure (when full)	1550 kPa @ 15°C
% Volatiles	100 %
Critical pressure	6,242 kPa

10. STABILITY AND REACTIVITY

10.1 Reactivity

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.

10.2 Chemical stability

Stable under recommended conditions of storage. However, sensitive to heat or shock and may become explosive.

10.3 Possibility of hazardous reactions

Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators.

10.4 Conditions to avoid

Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), copper, copper alloys (>70% copper), silver and mercury to form explosive acetylides. May decompose violently at high temperatures and/or pressures or in the presence of a catalyst. Hazardous by-products may be produced when this gas/gas mixture is used in welding, cutting and associated processes.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant.
Eye	Not classified as an eye irritant.
Sensitization	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.

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Reproductive	Not classified as a reproductive toxin.
STOT – single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT – repeated exposure	Not classified as causing organ effects from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No ecological damage is expected to be caused by this product.

12.2 Persistence and degradability

This product is not readily biodegradable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Waste disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1001	1001	1001
14.2 Proper Shipping Name	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED
14.3 Transport hazard class	2.1	2.1	2.1
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards No information provided

14.6 Special precautions for user

Hazchem code	2SE
GTEPG	2A1
EMS	F-D, S-U
Other information	Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).	
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals. The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].	
Hazard codes	E	Explosive
	F+	Extremely flammable
Risk phrases	R5	Heating may cause an explosion.
	R6	Explosive with or without contact with air.
	R12	Extremely Flammable.
Safety phrases	S9	Keep container in a well ventilated place.
	S16	Keep away from sources of ignition - No smoking.
	S33	Take precautionary measures against static discharges.
Inventory listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.	

16. OTHER INFORMATION

Additional information The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders. When using this gas/gas mixture for welding, cutting and associated processes, additional hazards may be generated by the process such as radiation, noise and fume. Risk assessments should be made for each activity to identify and quantify the individual hazards involved. Please refer to the relevant Safety Data Sheets for the welding consumables being used or, if available, the materials being welded.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

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Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

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