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MATERIAL SAFETY DATA SHEET

001

PRODUCT NAME **ACETYLENE (BOC LIMITED - AUS)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113
Telephone +61 131 262, (02) 8874 4400
Fax +61 132 427 (24 hours)
Emergency 1800 653 572 (24/7) (Australia only)
Web Site <http://www.boc.com.au/>
Synonym(s) DISSOLVED ACETYLENE • ETHYNE • PRODUCT CODES: 040, 041 • 001 - MSDS NUMBER
Use(s) FUEL • INDUSTRIAL APPLICATIONS
MSDS Date 27 August 2007

2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

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

UN No.	1001	DG Class	2.1	Subsidiary Risk(s)	None Allocated
Pkg Group	None Allocated	Hazchem Code	2[S]E	EPG	2A1

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
ACETYLENE	C ₂ H ₂	74-86-2	>98%

4. FIRST AID MEASURES

Eye Exposure is considered unlikely. No eye irritation is anticipated.

Inhalation Remove from area of exposure immediately. If assisting a victim avoid becoming a casualty, wear an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. If victim is not breathing apply artificial respiration and seek urgent medical attention. Give oxygen if available. Keep warm and rested.

Skin Treatment for thermal burns by immersing affected area in tepid water and lightly bandaging with sterile dressings.

Ingestion Ingestion is considered unlikely.

Advice to Doctor Treat for asphyxia.

5. FIRE FIGHTING MEASURES

Flammability Highly flammable. Heating to decomposition produces acrid smoke and irritating fumes. Product will add fuel to a fire. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, petrol engines, heaters, naked lights, pilot lights, mobile phones, static electricity (such as from plastic materials or synthetic clothing) etc. when handling.

Fire and Explosion Highly flammable. Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Call fire brigade. This product will add fuel to a fire. Cool cylinders exposed to fire by applying water

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from a protected location. Do not approach cylinders suspected of being hot. Refer to AS 4332 [2004], Appendix E, for additional information.

Extinguishing 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.

Hazchem Code 2[S]E

6. ACCIDENTAL RELEASE MEASURES

Spillage GAS CYLINDERS: If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.

7. STORAGE AND HANDLING

Storage Do not store near sources of ignition, oxidising agents, poisons, flammable liquids or combustible materials. Cylinders should be stored: upright, prevented from falling, in a secure area; below 45 C, in a dry, well ventilated enclosure 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.

Handling Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. 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.

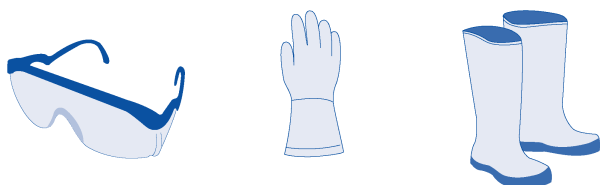
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards ACETYLENE (74-86-2)
ES-TLV (ACGIH): Simple asphyxiant
ES-TWA: Simple asphyxiant
WES-TWA: Simple asphyxiant

Biological Limit Values No biological limit allocated.

Engineering Controls Maintain adequate ventilation. Confined areas (eg. tanks) should be adequately ventilated or gas tested. Flammable/explosive vapours may accumulate in poorly ventilated areas.

PPE Wear safety boots, cotton or leather gloves and safety glasses. Where an oxygen-deficiency risk exists, wear an Air-line respirator. If undertaking welding operations, the appropriate personal protective equipment should be worn. Clothing must be 100% cotton or fire-resistant (eg. proban, nomex) rather than synthetic materials which can generate enough static electricity to cause an ignition and also can melt onto the skin at flame temperatures.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS	Solubility (water)	SOLUBLE
Odour	GARLIC-LIKE ODOUR	Specific Gravity	NOT AVAILABLE
pH	NOT AVAILABLE	% Volatiles	NOT AVAILABLE
Vapour Pressure	4700 kPa @ 25°C	Flammability	HIGHLY FLAMMABLE
Vapour Density	0.906 (Air = 1)	Flash Point	< 23°C

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Boiling Point	-84°C	Upper Explosion Limit	80 - 85 %
Melting Point	NOT AVAILABLE	Lower Explosion Limit	2.5 %
Evaporation Rate	NOT AVAILABLE	Autoignition Temperature	305°C
Critical Pressure	6, 242 kPa	Critical Temperature	36.3°C (dissolved in acetone and porous medium)
Cylinder pressure (when full)	1550 kPa @ 15°C		

10. STABILITY AND REACTIVITY

Material to Avoid Reacts with copper, copper alloys (>70% copper), silver & mercury to form explosive acetylides. May decompose violently at high temperatures and/or pressures or in the presence of a catalyst. May undergo exothermic decomposition to carbon (soot) and hydrogen gas. Hazardous by-products may be produced when this gas/gas mixture is used in welding, cutting and associated processes.

Decomposition Heating to decomposition produces acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Asphyxiant gas - non irritant. May replace oxygen in the inhaled air and cause asphyxiation. As the amount of oxygen inhaled is reduced from 21-14% the pulse rate will accelerate and the rate and volume of breathing will increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is somewhat disturbed. As oxygen decreases from 14-10% judgement becomes faulty, severe injuries may cause no pain. Muscular effort leads to rapid fatigue. Further reduction to 6% may cause nausea and vomiting. Ability to move may be lost. Permanent brain damage may result even after resuscitation from exposure to this low level of oxygen. Below 6% breathing is in gasps and convulsions may occur. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death will follow in a few minutes.

Eye Non irritating.

Inhalation Non irritating - Asphyxiant. Effects are proportional to oxygen displacement.

Skin Non irritating.

Ingestion Due to product form, ingestion is considered highly unlikely.

Toxicity Data No LD50 data available for this product.

12. ECOLOGICAL INFORMATION

Environment Fume from fabrication processes which use this gas/gas mixture may be harmful to the environment.

13. DISPOSAL CONSIDERATIONS

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

Transport Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.



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

Shipping Name ACETYLENE, DISSOLVED

UN No. 1001

DG Class 2.1

Subsidiary Risk(s) None Allocated

Pkg Group None Allocated

Hazchem Code 2[S]E

EPG 2A1

15. REGULATORY INFORMATION

Poison Schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information 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 BOC document "Welding Hazards and Risk Management" available from www.boc.com and refer to the relevant Material Safety Data Sheets for the welding consumables being used or, if available, the materials being welded.

Application method: 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.

ABBREVIATIONS:

ADB - Air-Dry Basis.

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

TWA/ES - Time Weighted Average or Exposure Standard.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert 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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Report Status This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer 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.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

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MSDS Date: 27 August 2007

End of Report