BOC Limited
ABN 95 000 029 729
10 Julius Avenue
NORTH RYDE NSW 2113
Tel + 61 131 262
Fax + 61 132 427

MATERIAL SAFETY DATA SHEET
001

Product Name **ACETYLENE (BOC AUS)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde NSW, 2113, AUSTRALIA
Telephone +61 131 262, (02) 8874 4400
Fax +61 132 427 (24 hours)
Emergency 1800 653 572 (A/H) (Australia only)

Synonyms DISSOLVED ACETYLENE, ETHYNE, PRODUCT CODES: 040, 041.

Uses FUEL, INDUSTRIAL APPLICATIONS.

2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
ACETYLENE	C2-H2	>98%	74-86-2

4. FIRST AID MEASURES

Eye Not applicable. 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 Not applicable.

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

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5. FIRE FIGHTING MEASURES cont.

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 fusible plugs.

7. HANDLING AND STORAGE

Handling Use safe work practices to avoid eye or skin contact and inhalation. Observe good personal hygiene. Prohibit eating, drinking and smoking in contaminated areas. Wash hands before eating.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Exposure Standards ACETYLENE (74-86-2)
ES-TWA : Asphyxiant

PPE Wear safety glasses, safety boots and leather or cotton gloves. 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.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: COLOURLESS GAS
Odour: GARLIC-LIKE ODOUR
pH: NOT AVAILABLE
Vapour Pressure: 4700 kPa @ 25 C
Vapour Density: 0.906 (Air = 1)
Boiling Point: - 84 C
Melting Point: NOT AVAILABLE
Evaporation Rate: NOT AVAILABLE
Solubility (water): SOLUBLE
Specific Gravity: NOT AVAILABLE
% Volatiles: NOT AVAILABLE
Flammability: HIGHLY FLAMMABLE
Flash Point: < 23 C
Upper Explosion Limit: 80 - 85 %
Lower Explosion Limit: 2.5 %
Autoignition Temperature: 305 C
Cylinder pressure (when full): 1550 kPa @ 15 C
Critical Temperature: 36.3 C (dissolved in acetone and porous medium)
Critical Pressure: 6, 242 kPa

10. STABILITY AND REACTIVITY

Reactivity 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 Products 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.

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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.

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.

UN Number 1001
Shipping Name ACETYLENE, DISSOLVED
DG Class 2.1
Subsidiary Risk(s) None Allocated
Packing Group None Allocated
Hazchem Code 2[S]E

15. REGULATORY INFORMATION

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

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).

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: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment which controls fuel gas mixture and flame.

COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

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16. OTHER INFORMATION cont.

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. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling +61 8 9322 1711.

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.

ABBREVIATIONS:
mg/m3 - Milligrams per cubic metre
ppm - Parts Per Million
TWA/ES - Time Weighted Average or Exposure Standard.
pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
M - moles per litre, a unit of concentration.
IARC - International Agency for Research on Cancer.

Report Reviewed 21st July 2005

Date Printed 21st July 2005

Report Status Chem Alert reports are compiled as an independent source of information by RMT's scientific department. The information is based on the latest chemical and toxicological research, and in compliance with relevant standards, guidance notes and legislation (where applicable). The Chem Alert report is not intended as a replacement to the manufacturer's original MSDS that is provided to Chem Alert subscribers for convenience. In many instances, Chem Alert reports are compiled on behalf of manufacturers, in which case they serve as the "Manufacturer's MSDS" and are clearly identified as such on the relevant reports.

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Colour Rating AMBER