

SAFETY DATA SHEET

0204

Product Name **ETHYLENE, BULK REFRIGERATED**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Emergency 1800 653 572 (24/7) (Australia only)
Web Site <http://www.boc.com.au/>
Synonym(s) 0204 - SDS NUMBER • ETHENE • PRODUCT CODE: 0725
Use(s) INDUSTRIAL APPLICATIONS
SDS Date 26 Mar 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R12 Extremely Flammable.

SAFETY PHRASES

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

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

UN No.	1038	DG Class	2.1	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated	Hazchem Code	2WE	EPG	2A2

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
ETHYLENE	C2-H4	74-85-1	>99%
IMPURITIES	Not Available	Not Available	<1%

4. FIRST AID MEASURES

Eye Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

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 Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor.

Skin Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.

Ingestion Due to product form and application, ingestion is considered unlikely.

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Advice to Doctor Treat for asphyxia and cold burns.

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, heaters, naked lights, pilot lights etc. when handling.

Fire and Explosion Temperatures in a fire may cause containers to rupture. Heating to decomposition produces acrid smoke and irritating fumes. Product will add fuel to a fire. To fight fire stop flow of gas, if safe to do so, and use carbon dioxide, dry chemical extinguisher or fine water spray. Cool containers exposed to fire by applying water from protected location. Do not approach containers suspected of being hot. Evacuate area if unable to keep containers cool. If flame from container is impinging on flammable materials or other containers evacuate the area. If the container is standing alone then let the flame continue until all gas has been consumed. Ensure working area is well ventilated before re-entry. This material is capable of forming explosive mixtures in air.

Extinguishing Dry chemical, carbon dioxide, dry agent or water fog. Prevent contamination of drains or waterways.

Hazchem Code 2WE

6. ACCIDENTAL RELEASE MEASURES

Spillage CONTAINERS: If the container is leaking, eliminate all potential ignition sources and evacuate area of personnel. Warn occupants of downwind areas of fire and explosion hazard. Inform manufacturer/supplier of leak. Use personal protective equipment. Prevent spill entering drains or waterways. Contain spillage, then cover / absorb spill with non-combustible absorbant material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Allow to evaporate. Consult with an expert on disposal of recovered material and ensure conformity to local disposal regulations.

7. STORAGE AND HANDLING

Storage Do not store near sources of ignition or incompatible materials. Bulk containers should be stored in a secure area, 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. Suitable storage containers: stainless steel, aluminium, copper. Unsuitable storage containers: mild steel

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.

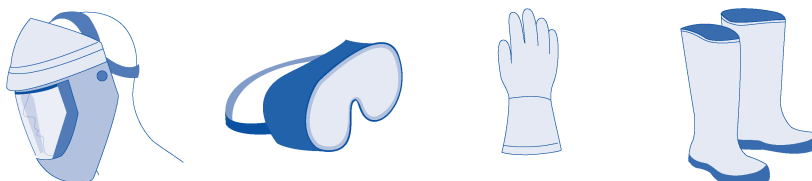
8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds	Ingredient	Reference	TWA		STEL	
			ppm	mg/m3	ppm	mg/m3
	Ethylene	ASCC (AUS)	Asphyxiant			

Biological Limits No biological limit allocated.

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas.

PPE Wear splash-proof goggles, safety boots, insulated gloves and a faceshield. When handling this product, it is recommended that personnel wear 100% cotton long sleeve shirts and trousers or overalls, preferably with flame retardant treatment or materials. Where an inhalation risk exists, wear: an Air-line respirator or self Contained Breathing Apparatus (SCBA).



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS AND LIQUID	Solubility (Water)	SOLUBLE
Odour	SWEETISH ODOUR	Specific Gravity	NOT APPLICABLE
pH	NOT APPLICABLE	% Volatiles	100 %

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Vapour Pressure	NOT AVAILABLE	Flammability	HIGHLY FLAMMABLE
Vapour Density	0.98 (Air = 1)	Flash Point	-100°C
Boiling Point	-104°C	Upper Explosion Limit	36 %
Melting Point	-169°C	Lower Explosion Limit	2.30 %
Evaporation Rate	NOT APPLICABLE		
Autoignition Temperature	425°C	Density	1.26 kg/m ³ (gas)
Liquid Density	568 kg/m ³ @ -103.7°C and 101.325 kPa		

10. STABILITY AND REACTIVITY

Material to Avoid	Explodes spontaneously when mixed with chlorine in sunlight. Reacts vigorously with some oxidising agents.
Decomposition	Heating to decomposition produces acrid smoke and irritating fumes.
Hazardous Reactions	Violent polymerisation catalysed by copper above 400°C and 5,400 kPa.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Asphyxiant. Also a weak anaesthetic. Symptoms of exposure are directly related to displacement of oxygen. As the amount of oxygen inhaled is reduced from 21-14% volume, the pulse rate may accelerate and the rate and volume of breathing may increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is somewhat disturbed. As oxygen decreases from 14-10% volume, judgement becomes faulty, severe injuries may result in no pain. Muscular effort may lead to rapid fatigue. Further reduction to 6% may result in 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 may follow in minutes. Ethylene is not classifiable as to its carcinogenicity (IARC Group 3).
Eye	Non irritant. However, direct contact with evaporating liquid may result in severe cold burns with possible permanent damage.
Inhalation	Non irritant - Asphyxiant. Effects are proportional to oxygen displacement.
Skin	Non irritant. However, direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Ingestion	Ingestion is considered unlikely due to product form.
Toxicity Data	No LD50 data available for this product.

12. ECOLOGICAL INFORMATION

Environment	Toxic to plants. This substance is highly volatile and will rapidly evaporate to the air if released into the environment. No information on the biodegradability of this substance is available.
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13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION



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

Shipping Name	ETHYLENE, REFRIGERATED LIQUID			Subsidiary Risk(s)	None Allocated
UN No.	1038	DG Class	2.1	EPG	2A2
Packing Group	None Allocated	Hazchem Code	2WE		

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 ABBREVIATIONS:
ADB - Air-Dry Basis.
BEI - Biological Exposure Indice(s)
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EINECS - European INventory of Existing Commercial chemical Substances.
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.
NTP - National Toxicology Program.
OSHA - Occupational Safety and Health Administration.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
TWA/ES - Time Weighted Average or Exposure Standard.

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.

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.

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

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 SDS, 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 SDS.

Prepared By Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

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End of Report