

SAFETY DATA SHEET

2508

Product Name **7 COMPONENT MIXTURE BALANCE ETHYLENE**

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) SG 2508 - SDS NUMBER
Use(s) CALIBRATION · INDUSTRIAL APPLICATIONS
SDS Date 25 January 2012

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R12 Extremely Flammable.
R67 Vapours may cause drowsiness and dizziness.

SAFETY PHRASES

S2 Keep out of reach of children.
S9 Keep container in a well ventilated place.
S16 Keep away from sources of ignition - No smoking.
S33 Take precautionary measures against static discharges.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

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

UN Number	1954	DG Division	2.1
Packing Group	None Allocated	Subsidiary Risk(s)	None Allocated
Hazchem Code	2SE		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	Cas No.	Content (v/v)
HYDROGEN	H2	1333-74-0	4%
ETHANE	C2-H6	74-84-0	2%
ISOPENTANE	C5-H12	78-78-4	1%
METHANE	C-H4	74-82-8	0.5%
ETHYLENE	C2-H4	74-85-1	Remainder
NITROGEN	N2	7727-37-9	12%
1-HEXENE	C6-H12	592-41-6	0.2%

4. FIRST AID MEASURES

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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.
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	Not considered a potential route of exposure.
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 cylinders to rupture and internal pressure relief devices to be activated. 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 cylinders exposed to fire by applying water from protected location. Do not approach cylinders suspected of being hot. Remove cool cylinders from the path of the fire. Evacuate area if unable to keep cylinders cool. If flame from cylinder is impinging on flammable materials or other cylinders evacuate the area. If the cylinder 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 agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.
Hazchem Code	2SE 2 Water Fog (or fine water spray if fog unavailable) S Self Contained Breathing apparatus and protective gloves. E Evacuation of people in the vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

Spillage	If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Prevent spreading of vapours through drains and ventilation systems. Inform manufacturer/supplier of leak. Use personal protective equipment. Carefully move material to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
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7. STORAGE AND HANDLING

Storage	Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored 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.
Handling	Use of safe work practices are recommended to avoid eye or skin contact and 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Ethane	SWA (AUS)	Asphyxiant			
Ethylene	SWA (AUS)	Asphyxiant			
Hydrogen	SWA (AUS)	Asphyxiant			
Methane	SWA (AUS)	Asphyxiant			
Nitrogen	SWA (AUS)	Asphyxiant			

Product Name **7 COMPONENT MIXTURE BALANCE ETHYLENE****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. Maintain vapour levels below the recommended exposure standard.**PPE****Eye / Face** Wear safety glasses.**Hands** Wear leather or cotton gloves.**Body** Wear safety boots.**Respiratory** If spraying, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS
Odour	SLIGHT ODOUR
Flammability	HIGHLY FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	0.97 (Air = 1) (Ethylene)
Specific gravity	NOT APPLICABLE
Solubility (water)	0.23 cm ³ /cm ³ (Ethylene)
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Autoignition temperature	490°C (Ethylene)
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
% Volatiles	100 %

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to Avoid	Explodes spontaneously when mixed with chlorine in sunlight. Reacts vigorously with some oxidising agents.
Hazardous Decomposition Products	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	<p>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). A weak anaesthetic.</p> <p>Low irritant. However, direct contact with evaporating liquid may result in severe cold burns with</p>
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Eye	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	METHANE (74-82-8)	
	LC50 (inhalation)	326 gm/m3/2h (mouse)
	1-HEXENE (592-41-6)	
	LC50 (inhalation)	32000 ppm/4hr (rat)

12. ECOLOGICAL INFORMATION

Environment	Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.
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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

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN Number	1954	1954	1954
Proper Shipping Name	COMPRESSED GAS, FLAMMABLE, N.O.S. (CONTAINS ETHYLENE)		
DG Class/ Division	2.1	2.1	2.1
Subsidiary Risk(s)	None Allocated	None Allocated	None Allocated
Packing Group	None Allocated	None Allocated	None Allocated
GTEPG	2A1		
Specific EPG	None Allocated		
Environmental Hazards		None Allocated	
Hazchem Code	2SE		
EMS		None Allocated	
MARPOL 73/78		None Allocated	
Other Information	Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.		

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 Medicines and Poisons (SUSMP)
Inventory Listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.
	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Product Name **7 COMPONENT MIXTURE BALANCE ETHYLENE****Additional Information**

The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this ChemAlert 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.

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
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
mg/m ³	Milligrams per Cubic Metre
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
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
TLV	Threshold Limit Value
TWA/OEL	Time Weighted Average or Occupational Exposure Limit

Revision History

Revision	Description
1.1	Standard SDS Review
1.0	Standard SDS Review

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.

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Revision: 1.1

SDS Date: 25 January 2012

End of SDS