

SAFETY DATA SHEET

Product Name 7 COMPONENT MIXTURE (C3H8S, C3H8S, C4H10S, C2H6S, C2H6S2, C2H6S2, C4H8S, BALANCE N2)

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) 1218 - MSDS NUMBER · PRODUCT CODES: 285, 292 · SPECIAL GAS MIXTURE
Use(s) CALIBRATION · INDUSTRIAL APPLICATIONS
SDS Date 26 April 2012

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS (GHS) ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

None allocated

SAFETY PHRASES

None allocated

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

UN Number	1956	DG Division	2.2
Packing Group	None Allocated	Subsidiary Risk(s)	None Allocated
Hazchem Code	2TE		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
DIMETHYL DISULPHIDE	CAS: 624-92-0 EC: 210-871-0	Xi;R36/38	<0.0005%
TETRAHYDROTHIOPHENE	CAS: 110-01-0 EC: 203-728-9	F;R11 Xn;R20/21/22 Xi;R36/38 N;R52/53	<0.0005%
1-PROPANETHIOL	CAS: 107-03-9 EC: 203-455-5	Not Available	<0.0005%
DIMETHYL SULPHIDE	CAS: 75-18-3 EC: 200-846-2	Not Available	<0.0005%
ISOPROPYL MERCAPTAN	CAS: 75-33-2 EC: 200-861-4	Not Available	<0.0005%
TERTIARY BUTYL MERCAPTAN	CAS: 75-66-1 EC: 200-890-2	Not Available	<0.0005%
NITROGEN	CAS: 7727-37-9 EC: 231-783-9	Not Available	Remainder

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
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	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable.
Fire and Explosion	Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot.
Extinguishing	Use water fog to cool containers from protected area.
Hazchem Code	2TE 2 Water Fog (or fine water spray if fog unavailable) T 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, evacuate area of personnel. 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.
----------	--

7. STORAGE AND HANDLING

Storage	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
Nitrogen	SWA (AUS)	Asphyxiant			

Biological Limits	No biological limit allocated.
-------------------	--------------------------------

Product Name **7 COMPONENT MIXTURE (C3H8S, C3H8S, C4H10S, C2H6S, C2H6S2, C2H6S2, C4H8S, BALANCE N2)**

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather gloves.
Body	Wear safety boots.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS
Odour	PUNGENT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT APPLICABLE
Solubility (water)	NOT AVAILABLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Cylinder pressure (when full)	11000 kPa @ 15°C
% Volatiles	100 %

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.
Material to Avoid	Compatible with most commonly used materials. Avoid heating cylinders. Mercaptans will react with oxidising agents, water and steam to produce toxic and flammable vapours. They decompose on heating to form toxic sulphur oxides. Tetrahydrothiophene has potentially explosive reactions with hydrogen peroxide. This product will corrode most materials when moist.
Hazardous Decomposition Products	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Asphyxiant gas - irritant. May replace oxygen in the inhaled air and cause asphyxiation. 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.
Eye	Irritant vapour. Injury to eyes may occur if wearing contact lenses. Dimethyl sulphide may irritate the eye. Persons with potential exposure should not wear contact lenses.

Product Name **7 COMPONENT MIXTURE (C3H8S, C3H8S, C4H10S, C2H6S, C2H6S2, C2H6S2, C4H8S, BALANCE N2)**

Inhalation Irritant - asphyxiant. Effects are proportional to oxygen displacement.

Skin Irritating vapour. Contact may result in irritation. May irritate the skin.

Ingestion Ingestion is considered unlikely due to product form.

Toxicity Data DIMETHYL DISULPHIDE (624-92-0)
LC50 (inhalation) 12.3 mg/m³/2 hours (mouse)
TCLo (inhalation) 250 ppm/6 hour/13 days-intermittent (rat)
TDLo (skin) 2126 mg/kg/4 weeks-intermittent (rabbit)

TETRAHYDROTHIOPHENE (110-01-0)
LC50 (inhalation) 27 gm/m³/2 hours (mouse)

1-PROPANETHIOL (107-03-9)
LC50 (inhalation) 4010 ppm/4hrs (mouse)
LD50 (ingestion) 1790 mg/kg (rat)
LD50 (intraperitoneal) 515 mg/kg (rat)

DIMETHYL SULPHIDE (75-18-3)
LC50 (inhalation) 31.62 mg/m³ (mouse)
LD50 (ingestion) 3300 mg/kg (rat)
LD50 (intraperitoneal) 8000 mg/kg (mouse)
LD50 (skin) 5000 mg/kg (rabbit)
TDLo (ingestion) 3412 mg/kg/33 weeks intermittently (rabbit)

TERTIARY BUTYL MERCAPTAN (75-66-1)
LC50 (inhalation) 16500 ppm/4 hours (mouse)
LD50 (ingestion) 4729 mg/kg (rat)
LD50 (intraperitoneal) 590 mg/kg (rat)
TCLo (inhalation) 201 ppm/6 hours/2 weeks - intermittently (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.

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	1956	-	-
Proper Shipping Name	COMPRESSED GAS, N.O.S.	-	-
DG Class/ Division	2.2	-	-
Subsidiary Risk(s)	None Allocated	-	-
Packing Group	None Allocated	-	-
GTEPG	2C1		
Hazchem Code	2TE		

Product Name	7 COMPONENT MIXTURE (C3H8S, C3H8S, C4H10S, C2H6S, C2H6S2, C2H6S2, C4H8S, BALANCE N2)
Other Information	Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport.

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.

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.
-------------------------------	--

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
1.0	Standard SDS Review.

Product Name **7 COMPONENT MIXTURE (C3H8S, C3H8S, C4H10S, C2H6S, C2H6S2, C2H6S2, C4H8S, BALANCE N2)**

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

Revision: 1
SDS Date: 26 April 2012

End of SDS