

MATERIAL SAFETY DATA SHEET

FOR

RazorGas™

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name	Elgas Ltd, A.C.N. 002 749 260
Address	Level 1, 10-18 Cliff Street, Milsons Point NSW 2061 PO Box 818, Milsons Point NSW 2061 AUSTRALIA
Telephone	(02) 9927 3200
Fax	(02) 9925 0454
Emergency	1800 819 783 (24 hours)
Other Names	Commercial grade cutting gas containing propane
Use	Propane based cutting gas for use in the commercial markets

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

Main Component		CAS Number
Propane		0074 – 98 – 6
Cyclopentane	Composition in accordance with the appropriate LPG Australia specifications and state regulations (see Sec 16)	287 – 92 – 3
n-Pentane		109 – 66 – 0
2,2-Dimethylbutane		75 – 83 – 2
2-Methylpentane		107 – 83 – 5
Isopentane		78 – 78 – 4
2,3-Dimethylbutane		79 – 29 – 8
3-Methylpentane		96 – 14 – 0
1,3-Butadiene		<0.1%
Odourant: Ethylmercaptan	Approx 25ppm	75 – 08 – 1

4. FIRST AID MEASURES

In all cases seek medical attention and see the Elgas Super Cold Contact Injuries Hospital Information Sheet for further information and procedures.	
Eye	Treatment for cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	Remove from area of exposure immediately. 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	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	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor. Ingestion is considered unlikely due to product form.
Advice to Doctor	Treat symptomatically. Severe inhalation over exposure may sensitise the heart to catecholamine induced arrhythmias. Do not administer catecholamines to an overexposed person.

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, mobile phones etc. when handling and not in use.
- 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 and vessels exposed to fire by applying water from a protected location and with water spray directing spray primarily onto the upper surface. Do not approach any LPGas container suspected of being hot.
- Extinguishing** Stop flow of gas if safe to do so, such as by closing valves. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services. 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. Evacuate the area of persons not fighting the fire. Carbon monoxide fumes may be produced should burning occur within an enclosed space (ie causing a deficiency of oxygen). Fire fighters should wear full protective clothing and be aware of the risk of possible explosion (especially in a confined space). Flashback may occur along vapour trail. Where possible, remove cool cylinders from the path of the fire. Do not re-use a fire-exposed vessel or cylinder – seek advice of supplier.

Hazchem Code 2WE

6. ACCIDENTAL RELEASE MEASURES

- Spillage** As this product has a very low flash point any spillage or leak is a fire and / or explosion hazard. If a leak has not ignited, stop gas flow, isolate sources of ignition and evacuate personnel.
- Ensure good ventilation.
- Liquid leaks generate large volumes of heavier than air flammable vapour which may travel to remote sources of ignition (eg along drainage systems). Where appropriate, use water spray to disperse the gas or vapour and to protect personnel attempting to stop leakage.
- Vapour may collect in any confined space.
- 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 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

Precautions for Safe Handling Avoid inhalation of vapour. Avoid contact with liquid and cold storage containers. When handling cylinders wear protective footwear, eye protection and suitable gloves. Always ensure that cylinders are within test date, are fit for use and are leak checked prior to use. Do not fill excessively dented, gouged or rusty containers (refer AS2337.1). Only fill cylinders to 80% fill level (ullage tube via decanting or mass via mechanical filling). Avoid contact with eyes. Class 2.1 Flammable Gas products may only be loaded in the same vehicle or packed in the same freight container with the classes of products as permitted in the ADG Code (see references). Cylinders shall only be transported in an upright, secure position in accordance with the National Road Transport Commission Load Restraint Guide and shall not be dropped.

Conditions for Safe Storage Store and use only in equipment / containers designed for use with this product. Store and dispense only in well ventilated areas away from heat and sources of ignition. Do not enter storage tanks. If entry to tanks is necessary, contact the supplier. Containers must be properly labelled. Do not remove warning labels from containers. Cylinders shall be stored in accordance with the requirements of the ADG Code, AS 4332 and AS/NZS1596. Do not store in pits and basements where vapour may collect. Store cylinders securely in an upright position. Note: forklift cylinders may be stored horizontally. Store away from incompatible materials particularly oxidising agents. Check vessels and cylinders are clearly labelled. Do not contaminate cylinders with other products.

Other Information Product spilt on clothing may give rise to delayed evaporation and subsequent fire hazard. Check for leaks by sound and smell and by locating with soapy water or with approved detection devices. Use only equipment and pipework designed and approved (where applicable) for RazorGas™ applications. Ensure that cylinders cannot be struck by forklift vehicles or by dropped or rolled objects, etc. Refer to Australian state and territory dangerous good regulations.

- Cylinders should always be used in the upright position and in a well ventilated area.
- The off-take valve is specifically designed for vapour service. Prior to making the connection check that the face of the coupling is not damaged and that the synthetic washer is in position and in good condition.
- Flexible hoses should be suitable for use with Liquefied Petroleum Gas (LP Gas).
- Flexible hoses should have a nominal bore as small as possible and be of the shortest practical length to minimise the amount of product contained in the connection. Consideration should be given to the fitting of a ball valve of fire safety design so that the contents remaining in the hose after transfer can be safely discharged.
- Jointing compounds suitable for LP Gas use or PTFE tape should be used for all other screwed connections. Hemp should never be used.
- Before transferring the product, the user should ensure that all materials used in the cutting or other systems, including non-metallic components, (hoses and "O" ring seals, etc) are resistant to the action of LP Gas under conditions of pressure and temperature to which they may be subjected in service and that the system is leak free.
- Connect the other end of the flexible hose using suitable jointing compound or tape as appropriate and open the cylinder off-take valve *slowly* to its full extent.
- When the cutting (or other operation) is complete close the cylinder valve and safely vent any product remaining in the hose assembly.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation	Maintain adequate ventilation. Confined areas (eg tanks) should be adequately ventilated and gas tested and must NEVER be entered unless under supervision via a Permit Procedure.
Exposure Standards	PROPANE (74-98-6) ES-TWA : 1000 ppm (OSHA PEL)
PPE	Wear suitable gloves and overalls to prevent cold burns, frostbite and eye protection. In filling operations wear protective clothing including impervious gloves, safety glasses or face shield. All clothing should be of the anti-static, low flame spread type. When handling cylinders wear protective footwear.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	PROPANE: see Elgas MSDS
	RazorGas™
Appearance	Clear, colourless liquefied gas – evaporating to clear colourless vapour with smell of rotten eggs
Boiling Point (°C)	-42°C
Vapour Pressure (at 25°C)	960 kPa.
Specific Gravity of liquid (at 20°C)	0.500
Specific Gravity of vapour (at 15°C) (Air = 1.0)	1.56
Viscosity of Liquid (at 30°C)	0.09
Flammability Limits	
Lower Explosive Limit (LEL)	2.0
Upper Explosive Limit (UEL)	10.0
Other Properties	RazorGas™ is incompatible with strong oxidising agents, peroxides, chlorine and concentrated nitric acid
Other Properties:	Solubility (water): 0.07cm ³ / cm ³
Other name/numbers:	
LPGas	UN 1075
Propane	UN 1978
Butane	UN 1011
IsoButane	UN 1969

10. STABILITY AND REACTIVITY

Reactivity	Incompatible with oxidising agents, acids, heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.
Decomposition Products	Heating to decomposition produces acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Asphyxiant gas. Symptoms of exposure are directly related to displacement of oxygen from air.
Eye	Non irritating. However, direct contact with evaporating liquid may result in severe cold burns with possible permanent damage.
Inhalation	Non irritating – Asphyxiant. Effects are proportional to oxygen displacement. Low vapour concentrations may cause nausea, dizziness, headaches and drowsiness. May have a narcotic effect if high concentrations of vapour are inhaled. High vapour concentrations may produce symptoms of oxygen deficiency which, coupled with central nervous system depression, may lead to rapid loss of consciousness.
Abuse	Under normal conditions of use the product is non hazardous, however abuse involving deliberate inhalation of very high concentrations of vapour can produce unconsciousness and / or result in a sudden fatality or brain damage.
Skin	Non irritating. Contact with evaporating liquid or supercold vessels or pipes may result in frost-bite with severe tissue damage.
Ingestion	Due to product form, ingestion is considered highly unlikely.
Toxicity Data	PROPANE (74-98-6) LC50 (Inhalation) : 50,000 ppm
Exposure Standards	The minor ingredients of RazorGas™ have the following threshold limit values for both Time Weighted Averages (TLV – TWA) and Short Term Exposure Limits (TLV – STEL)

Ingredient	TLV – TWA	TLV – STEL	Other
Cyclopentane	600ppm	600ppm	-
n-Pentane	600ppm	600ppm	-
2,2-Dimethylbutane	500ppm	500ppm	-
2-Methylpentane	500ppm	500ppm	-
Isopentane	NE	NE	-
2,3-Dimethylbutane	500ppm	500ppm	-
3-Methylpentane	500ppm	500ppm	-

12. ECOLOGICAL INFORMATION

Environment	No known ecological damage is caused by this product.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal Cylinders should be returned to the manufacturer or supplier for disposal. Empty cylinders may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed. RazorGas™ containers should NEVER be inadvertently disposed of in any land fill facility without being rendered unusable before disposal. 'EMPTY' container warning: 'empty' containers can sometimes retain residue (liquid and / or vapour) and can be dangerous. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS AND OTHER SOURCES OF IGNITION THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean.

Legislation Dispose of in accordance with relevant legislation.

14. TRANSPORT INFORMATION

Transport Transport of RazorGas™ is controlled in accordance with the requirements of the ADG Code and the Load Restraint Guide.

UN Number 1075

Shipping Name PETROLEUM GASES, LIQUEFIED

DG Class 2.1

Subsidiary Risk(s) None Allocated

Packing Group None Allocated

Hazchem Code 2WE

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).

Principal Retail Centres

NSW 22 Holbeche Road
Blacktown Blacktown NSW 2148
Phone: (02) 9672 0777
Fax: (02) 9672 1481

VIC 331-347 Police Road
Mulgrave Mulgrave VIC 3170
Phone: (03) 9767 7222
Fax: (03) 9767 7372

QLD Tanker Street
Brisbane Lytton QLD 4178
Phone: (07) 3396 2769
Fax: (07) 3893 1495

SA 1 Newfield Road
Adelaide Para Hills West SA 5096
Phone: (08) 8349 5050
Fax: (08) 8349 4624

ACT 9 Lithgow Street
Canberra Fyshwick ACT 2609
Phone: (02) 6280 6355
Fax: (02) 6280 4217

References ALPGA (now LPG Australia) Specification for Liquefied Petroleum Gas for Automotive use 2004.

ALPGA (now LPG Australia) Specification for Liquefied Petroleum Gas for Heating use 2004.

Petroleum and Gas Legislation / Queensland: 2004

Australian Standards as detailed within this document.

The Australian Code for the Transport of Dangerous Goods by Road and Rail (commonly known as the ADG Code).

The Load Restraint Guide as prepared by the National Transport Commission.