

Material Safety Data Sheet (MSDS)

Commercial Propane

Issue 6 - May 2010



1. PRODUCT AND COMPANY DETAILS

Product Name	Commercial Propane	
Other Names	LPG, LP Gas, Liquefied Petroleum Gas	
Use	As fuel in Domestic, Commercial, Industrial and Automotive applications.	
Company	Origin Energy LPG Limited Australia Square 264 - 278 George Street Sydney NSW 2000	
General Enquiries Telephone 13 24 62	Technical Information Telephone	07 3867 0362
	Technical Information Fax	07 3867 0278

Emergency Telephone 1800 808 526 all hours

2. HAZARD IDENTIFICATION

Commercial Propane as supplied by Origin contains less than 0.1% of 1,3 Butadiene and is not classified as hazardous according to criteria of Safe Work Australia and the Australian Criteria for the Classification of Chemicals. Commercial Propane is classified as a Dangerous Good by the Australian Dangerous Goods Code.

UN Number	1978	Hazchem Code	2YE
Dangerous Goods Class	2.1	Emergency Guide	EPG 2A2
Flammable (F)	R12 – Extremely flammable		

S9, 16 Keep container in a well ventilated place away from sources of ignition – No Smoking

Smell: People with poor or no sense of smell should be made aware of the risk in the event of a gas leak.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Entity	CAS Number	Proportion
Propane	[74-98-6]	25-99%
Propene	[115-07-1]	0-60%
Butane	[106-97-8]	0-7.5%
Butene	[106-98-9]	0-2%
Ethyl Mercaptan (Odorant)	[75-08-1]	25mg/kg

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Issue 6 - May 2010



NOTICE - Origin believes that information given herein is accurate and reliable at the date of compilation, and conforms to the guidelines of Safe Work Australia for the preparation of MSDS, but no warranty, express or implied, is made. While the MSDS provides adequate information for most users, an MSDS is not a substitute for expert advice on development of engineering and safe handling practices.

4. FIRST AID

Swallowed	Due to the high volatility of the product, this is not likely to occur.
Eyes	Hold eyes open and continuously wash with clean water while seeking urgent medical attention. Eye wash bottles containing sterile water or normal saline solution should be kept readily available.
Skin	Immediately wash affected areas with plenty of water at room temperature to overcome frostbite. Do not use iced water. Warm up gently. In hot conditions, cover with damp sheet to prevent too rapid heating up of affected area. Seek urgent medical attention.
Inhaled	Move patient to fresh air and allow to rest. If patient is unconscious and breathing, place them in the coma position, check airway and observe. If patient is not breathing, clear airway and apply mouth to mouth resuscitation. If patient is not breathing and does not have a pulse, commence cardio pulmonary resuscitation. Seek urgent medical attention.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Fire/Explosion Hazard	<p>Evacuate area, remove ignition sources.</p> <p>Cut off gas supply if safe to do so - do not endanger life.</p> <p>DO NOT EXTINGUISH FIRE - allow gas to burn out.</p> <p>Use water to keep vessel(s) cool.</p> <p>NOTE: If ignition has occurred and water is not available, the tank metal may weaken from the heat and may result in an explosion.</p> <p>The area should be evacuated immediately.</p> <p>From a safe location, notify emergency services.</p> <p>Hazchem Code 2YE</p>
Combustion Products	<p>Carbon dioxide, water vapour, traces of carbon monoxide and nitrogen oxides.</p> <p>Fumes, smoke, carbon monoxide and aldehydes can be formed during incomplete combustion.</p>

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	Fire fighters may need self contained breathing apparatus.
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6. ACCIDENTAL RELEASE MEASURES

Spills and Disposal

(Contact Origin if disposal of material is required)

Any release of Commercial Propane to the atmosphere poses a risk of fire or explosion.

Move people away and upwind from a spill.

Shut off supply of gas if it is safe to do so.

Eliminate sources of ignition e.g. power supply, matches, non-intrinsically safe communication equipment.

Ventilate area.

Remove leaking cylinder to open air.

Avoid breathing vapour and contact with liquid or vapour.

Disperse vapour with water spray.

Note that vapour is heavier than air and will settle at the lowest point e.g. ditches, drains and water courses.

7. HANDLING AND STORAGE

Store in approved areas as defined by current issue of AS1596.

Comply with the current issue of the Australian Code for the Transportation of Dangerous Goods by Road and Rail, and with the relevant Dangerous Goods Legislation in each State or Territory.

Store containers in an upright position (even when empty); keep away from heat sources; do not drop; keep valves closed when not in use.

Ensure dust and rain caps are fitted at all times.

Store away from oxidising substances e.g. pool chlorine.

Store in well ventilated area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Propane is an asphyxiant – Safe Work Australia Exposure Standard

Propylene is an asphyxiant – Safe Work Australia Exposure Standard

Butane – ES-TWA 800 ppm TWA 1900mg/m³

Material Safety Data Sheet (MSDS)

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Engineering Controls	
Ignition Sources	<p>No Smoking. No Flames.</p> <p>Follow procedures to avoid static discharges.</p> <p>Use only intrinsically safe communication equipment (e.g. mobile phones and pagers).</p> <p>Use non-spark generating tools and flameproof (intrinsically safe) equipment.</p>
Ventilation	<p>Maintain adequate ventilation.</p> <p>LPG appliances can be hazardous when used in a poorly ventilated room.</p>
Usage	<p>In applications other than as a forklift cylinder, all cylinders should be used in the upright position.</p> <p>Use only equipment approved for LPG installations and install in accordance with AS1596 and AS5601.</p>
Personal Protection	
	<p>Thermally insulated gloves and either goggles or close fitting protective glasses with side visors are recommended when handling liquid.</p> <p>Long sleeved shirts and long trousers made from natural materials should be worn when handling.</p> <p>If personnel are required to work in areas where the concentration of LPG may be above the exposure standard respiratory protection should be used. This should be a supplied air facemask or self contained breathing apparatus complying with AS1715 and AS1716.</p>
9. PHYSICAL AND CHEMICAL PROPERTIES	
Physical Description/Properties	
Appearance	<p>Colourless, odourless gas supplied in compressed liquid form in a pressure container.</p> <p>A strong and distinctive odour is added to assist in the early detection of even minor leaks.</p>
Boiling Point -42°C	Flash Point -104°C
Vapour Pressure (at 40°C) 1530 kPa Max.	Flammability Limits 2.4% to 9.6% in air (v/v)
Solubility in Water (at 20°C) <200ppm	Auto ignition Temperature 494°C to 549°C
Specific Gravity Liquid 0.51 (water = 1)	Specific Gravity Gas 1.52 (air = 1)

Material Safety Data Sheet (MSDS)

Commercial Propane

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Expansion ratio: 1 volume of liquid LPG expands to 273 litres of LPG vapour

10. STABILITY AND REACTIVITY

	Stable under normal ambient conditions of storage and use. Avoid heat sources.
	Can react violently with oxidising agents - chlorine, pool chlorine or nitric acid.

11. TOXICOLOGICAL INFORMATION

Health Effects from Acute Exposure

Swallowed	Due to high volatility of product, this is not likely to occur.
Eyes	Liquid will cause severe damage. Vapour will cause irritation.
Skin	Vapourising liquid or liquid contact can result in cold contact burns.
Inhaled	May cause light-headedness, dizziness and drowsiness. Excessive exposure may cause unconsciousness or even death, due to asphyxiation. (Refers to vapour not liquid)

Health Effects from Chronic Exposure

	No chronic systemic effects reported from industrial exposures.
Carcinogenicity	No known effect.
Mutagenicity	No known effect.
Teratogenicity	No known effect.

12. ECOLOGICAL INFORMATION

	Liquid propane will vapourise rapidly when released to atmosphere. Commercial Propane consists of hydrocarbons that photo chemically decompose under atmospheric conditions.
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13. DISPOSAL CONSIDERATIONS

	Contact Origin Energy if disposal of LPG is required.
	LPG cylinders should be returned to the owning organisation stamped on the cylinder when no longer required. Small customer owned cylinders should be made safe at a Gas Cylinder Test Station before disposal. Check with local Council re acceptance for disposal

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	to landfill. Also see Section 16	
14. TRANSPORT INFORMATION		
Transport Information	UN Number UN 1978	Shipping Name PROPANE
	Class 2.1	Hazchem Code 2YE
	Cylinders must be secured in an upright position for transport.	
	Transport in accordance with the requirements of ADG Code and the Load Restraint Guide	

15. REGULATORY INFORMATION	
	Poisons Schedule Number – Non allocated
	LPG is a prescribed Dangerous Good and its storage and handling is covered by various pieces of legislation in all States. The installation of LPG equipment must be performed only by appropriately licensed or authorised persons.
16. OTHER INFORMATION	
'EMPTY' container warning:	'Empty' containers retain residue (liquid and/or vapour) and can be dangerous. Do not attempt to clean since residue is difficult to remove. 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. All containers should be returned to the supplier. Privately owned containers no longer required should be disposed of in an environmentally safe manner and in accordance with Government regulations. Seek expert advice if repairs or modifications to installation are required.

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