

# Material Safety Data Sheet (MSDS)

Commercial Butane

Issue 6- May 2010



## 1. PRODUCT AND COMPANY DETAILS

Product name	Commercial Butane
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 Enquires Telephone 13 24 62	Technical Information Telephone 07 3867 0362 Technical Information Fax 07 3867 0278

Emergency Telephone 1800 808 526 all hours

## 2. HAZARDS IDENTIFICATION

Commercial Butane 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. Commercial Butane is classified as a Dangerous Good by the Australian Dangerous Goods Code.

UN number 1011	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
Butane (Mixture of Isomers)	[106-97-8]	50-98%
Butene (Mixture of Isomers)	[106-98-9]	0-40%
Propane	[74-98-6]	0-2%
Propene	[115-07-1]	0-2%
Ethyl Mercaptan (Odorant)	[75-08-1]	25mg/kg

**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.

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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	Remove 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><b>DO NOT EXTINGUISH FIRE</b> - allow gas to burn out.</p> <p>Use water to keep vessel(s) cool.</p> <p><b>Note:</b> 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><b>The area should be evacuated immediately.</b></p> <p><b>From a safe location, notify emergency services.</b></p> <p>Hazchem Code <b>2YE</b></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> <p>Fire fighters may need self contained breathing apparatus.</p>



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## 6. ACCIDENTAL RELEASE MEASURES

Spills and disposal

(Contact Origin if disposal of material is required)

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

Move people away and upwind from 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:** 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

Butane – ES-TWA 800 ppm TWA 1900mg/m<sup>3</sup>

Propane is an asphyxiant – Safe Work Australia Exposure Standard

Propylene is an asphyxiant – Safe Work Australia Exposure Standard

### Engineering controls

Ignition sources

**No Smoking. No Flames.**

Follow procedures to avoid static discharges.

Use only intrinsically safe communication equipment (e.g. mobile phones and pagers).

Use non-spark generating tools and flameproof (intrinsically safe) equipment.

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	LPG appliances can be hazardous when used in a poorly ventilated room.
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>
<b>Personal protection</b>	
	<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>
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>Physical description/properties</b>	
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 0°C	Flash Point -60°C
Vapour Pressure (at 40°C) 520 kPa Max	Flammability Limits 1.8% to 8.6% in air (v/v)
Solubility in Water (at 20°C) <200ppm	Auto ignition Temperature 482°C to 538°C
Specific Gravity Liquid 0.58 (water = 1)	Specific Gravity Gas 2.01 (air = 1)
<b>10. STABILITY AND REACTIVITY</b>	
	<p>Stable under normal ambient conditions of storage and use.</p> <p>Avoid heat sources.</p>
	Can react violently with oxidising agents - chlorine, pool chlorine or nitric acid.



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## 11. TOXICOLOGICAL INFORMATION

### Health effects from acute exposure

Swallowed	Due to the high volatility of the 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 Butane will vapourise rapidly when released to atmosphere.  
Commercial Butane consists of hydrocarbons that photo chemically decompose under atmospheric conditions.

## 13. DISPOSAL CONSIDERATIONS

Contact Origin 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 to landfill.

Do not incinerate LPG cylinders.

Also see Section 16

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14. TRANSPORT INFORMATION		
Transport information	UN number <b>UN 1011</b>	Shipping name <b>Butane</b>
	<b>Class 2.1</b>	Hazchem Code <b>2YE</b>
	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 – none 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	<p>'Empty' containers retain residue (liquid and/or vapour) and can be dangerous. Do not attempt to clean since residue is difficult to remove.</p> <p><b>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.</b></p> <p>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.</p> <p>Seek expert advice if repairs or modifications to installation are required.</p>	

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