Safety Data Sheet (SDS)
Liquefied Petroleum Gas (LPG)

Issue 5 – October 2015

1. Product And Company Details		
Product name	Liquefied Petroleum Gas (LPG)	
Other names	LPG, LP Gas, Propane, Butane, Rockgas	
Use	Automotive, residential and commercial fuel	
Company	Contact Energy Limited L2 Harbour City Tower, 29 Brandon Street, Wellington	
Telephone	0800 762 542	
Emergency telephone	**0800 427 345**	
Fax	03 373 6443	
2. Hazards Identifications		
Hazard		
UN Number	Liquefied Petroleum Gas (LPG):	1075
	Propane:	1978
	Butane:	1011
Hazchem Code	2YE	
Dangerous Goods Class	2.1.1A	
Emergency guide		
3. Composition/Information on Ingredients		
Chemical Entity	**CAS Number**	**Proportion**
Propane	74-98-6	100% maximum
Butane	106-97-8	100% maximum
4. First Aid Measures		
Swallowed	Due to high volatility of product, this is not likely to occur.	
Eyes	▪ Do Not Delay – Flood eye gently with clean fresh water. ▪ Continue washing for at least 15 minutes. ▪ Obtain medical aid as soon as possible.	
Skin	▪ Do Not Delay – Handle patient gently. ▪ Remove contaminated clothing. ▪ Immerse affected area in tepid water. ▪ Obtain medical aid as soon as possible.	
Inhaled	▪ Remove victim to fresh air. ▪ If breathing has stopped, or irregular, apply artificial respiration.	
Advice to doctor	Treat symptomatically.	

5. Fire Fighting Measures

Fire/Explosion hazard	▪ Evacuate area, remove ignition sources. ▪ Cut off gas supply if safe to do so – Do NOT endanger life. ▪ Do NOT extinguish fire – allow gas to burn out. ▪ Use water to keep vessels cool. **Note:** If ignition has occurred and water is not available, the tank metal may weaken from the heat and explode. The area should be evacuated immediately and emergency services notified from a safe location.
Combustion products	Carbon dioxide, water vapour, traces of carbon monoxide and nitrogen oxides. Fumes, smoke, carbon monoxide and aldehydes can be formed during incomplete combustion. **Note:** Fire fighters may need self-contained breathing apparatus.

6. Accidental Release Measures

Spills and disposal	▪ No smoking or naked flames within 50 meters. ▪ Move people from immediate area, keep upwind. ▪ Contact fire service. ▪ Stop flow of gas/liquid if safe to do so. ▪ Spray water to disperse gas cloud but avoid spraying water directly on leaking container as this may increase leakage. ▪ Prevent spillage from spreading or entering underground drains by blocking with sand or earth.

7. Handling and Storage

Details contained in the:

- Hazardous Substances and New Organisms Act (HSNO)
- Hazardous Substances Regulations
- NZS 5433 Transport of Dangerous Goods on Land
- relevant LPGA Codes of Practice
- AS/NZS 1596 Storage and Handling of LP Gas.

Note: Keep cylinders in an upright position and away from heat sources. Keep closed when not in use.

8. Exposure Controls/Personal Protection

Workplace exposure standard (DOL 2013):

- Propane is a simple asphyxiant and displaces oxygen from air. It presents an explosion hazard.
- Butane TWA 800 ppm, 1900 mg/m^3

Engineering controls

Ignition sources	▪ Follow procedures to avoid static discharges. ▪ Use only intrinsically safe communication equipment (e.g. do not use mobile phones and pagers). ▪ Use non-spark generating tools (intrinsically safe) and flameproof equipment.
Ventilation	Maintain adequate ventilation. **Note:** LP Gas appliances can be hazardous when used in a poorly ventilated room.

Usage	▪ In applications other than as a forklift cylinder, all cylinders should be used in the upright position. ▪ Use only equipment approved for LP Gas installations and install in accordance with HSNO, the relevant LPGA Codes of Practice and/or AS/NZS 1596:2008

Personal protection

To protect against accidental release of pressurised LPG:
- Thermal insulating gloves and safety glasses
- Full anti-static body cover to protect against cold burn.

9. Physical and Chemical Properties

Appearance	Colourless gas, liquid under pressure. Has unpleasant odour.			
		Propane	**Butane**	**LPG (typical)**
Boiling Point (at atmospheric pressure)		-42°C	0°C	
Vapour Pressure	-10°C	256 kPa	-4 kPa	185 kPa
	0°C	388 kPa	40 kPa	292 kPa
	10°C	552 kPa	95 kPa	424kPa
	20°C	757kPa	172 kPa	593 kPa
	30°C	1004 kPa	266 kPa	796 kPa
Solubility in Water		75 mg/l	88 mg/l	
Specific Gravity Liquid (Water = 1)		0.508	0.573	0.537
Specific Gravity Gas (Air = 1)		1.58	2.06	1.73
Flash Point		-105°C	-60°C	
Flammability Limits		2.2 – 9.5%	1.5 – 9.0%	2 – 10%
Auto Ignition Temperature		468°C	430°C	

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	Vaporising liquid or liquid contact can result in cold 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	
LPG will vaporise rapidly when released to atmosphere. There are no known adverse ecological effects.	
13. Disposal Considerations	
Get hold of Contact Energy if disposal of LPG is required.	
▪ LPG cylinders should be returned to the owning organisation stamped on the cylinder when no longer required. ▪ Do **NOT** incinerate LPG cylinders.	
14. Transport Information	

Transport information	**Class**	2.1	Hazchem code	2YE
	Shipping name	Propane	Butane	LPG
	UN Number	1978	1011	1075

15. Regulatory Information	
Poisons schedule number	None allocated
▪ LPG is a prescribed Hazardous Substance and its storage and handling is covered by various pieces of legislation. ▪ 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. ▪ Seek expert advice if repairs or modifications to installation are required.

ERMA Approval Numbers

Butane HSR000989 Propane HSR001010
LPG HSR001009