Manual	Retail Bulk LPG Manual		
Title	**LPG Safety Data Sheet**		
Document ID	**RET-LPG-FRM-001**	Revision No:	3

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER #0002

1.1 Product identifier

Product Name	Liquefied Petroleum Gas (LPG) (NZ)
Synonym(s)	Liquid Petroleum Gas, LPG, LP Gas

1.2 Uses

Uses(s)	Fuel, Heating

1.3 Details of the supplier of the safety data sheet

Supplier Name	Genesis Energy Limited	
Address	660 Great South Road, Ellerslie, Auckland, New Zealand	
Telephone	+64 9 580 2094	
Fax	+64 9 580 4891	
Email	Residential	customercare@genesisenergy.co.nz
	Business	business@genesisenergy.co.nz
Website	www.genesisenergy.co.nz	

1.4 24hr Emergency telephone number(s)

Emergency	Residential	0800 300 400
	Business	0800 436020
	In case of fire	111

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified according to the Hazardous Substances (Classification) Notice 2017

HSNO Classification
2.1.1A Flammable gases: high hazard

2.2 Label elements

Signal word DANGER

Pictograms

Hazard

UN Number	Liquefied Petroleum Gas (LPG):	1075
	Propane:	1978
	Butane:	1011

Hazchem Code	2YE
Hazard Statement	
H220	Extremely flammable gas
Prevention	
P210	Keep away from heat/sparks/open flames and other ignition sources/hot surfaces. No smoking.
Response	
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	In case of leakage, eliminate all ignition sources.
Storage	
P403	Store in a well-ventilated place.

Classified as a dangerous Good according to Land Transport Rule: Dangerous Goods 2005; NZS 5433:2007, UN Model Regulations, IMDG, or IATA.

Disposal
None allocated.

2.3 Other hazards

No information provided

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product	CAS Number	Content
Liquefied Petroleum Gas (LPG)	68476-85-7	100%

3.1 Substances / Mixtures

Ingredient	CAS Number	Content
Butanes	68477-69-0	<100%
Propane	74-98-6	<100%
Ethane	74-84-0	<5%
Propylene	115-07-1	<5%
Unsaturated hydrocarbons other than propylene	-	<0.3%
Additive(s): Ethyl Mercaptan (odorant)	75-08-1	<0.1%
Unsaturated hydrocarbons other than butadiene	-	<0.1%
Anti-icing agents	-	Not Available

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Irritation and possible cold burn if liquid enters the eye: Immediately

	flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
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.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with cold/luke warm water for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
Advice to Doctor	Treat symptomatically.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

No information provided.

4.3 Immediate medical attention and special treatment needed

If frozen tissue has thawed since exposure do not re-warm but apply sterile dressing with loose bandaging. To thaw frozen tissue, place in a warm (41-45°C) water bath for 15 to 60 minutes, or until the skin turns pink or red. Analgesia will be necessary during thawing. For massive exposure, general body temperature may be depressed and patient must be immediately re-warmed by whole-body immersion in a warm (41-45°C) water bath. Shock may occur during re-warming. When
thawed, treat as with heat burns.

5. FIRE EXTINGUISHING MEASURES

5.1 Extinguishing media

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services or manufacturer's advisor. 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. Emergency personnel should wear full protective clothing including full-face air supplied or self-contained breathing apparatus, coveralls, thermal insulated gloves, splash-proof goggles and non-sparking boots.

5.2 Special hazards arising from the substance or mixture

Highly flammable. Heating to decomposition produces acrid smoke and irritating fumes such as carbon monoxide and other unidentifiable organic compounds. Product will add fuel to a fire. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights etc. when handling.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do

not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

5.4 Hazchem code

2YE

2	Water Fog (or fine water spray if fog unavailable)
Y	Self Contained Breathing apparatus and protective gloves.
E	Evacuation of people in the vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Pressurised liquid leaks will immediately vaporise at normal air pressures. Avoid breathing gas. Avoid contact of the liquid with skin and eyes. Clear area of all unprotected personnel.

6.2 Environmental precautions

Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Eliminate all ignition sources. Switch off power suppliers. Isolate leak if safe to do so. Contact emergency services where appropriate.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe 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.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near sources of ignition or incompatible materials. 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.

7.3 Specific end use(s)

No information provided.

7.4 LPG Cylinder Colour

Colour coding should not be used for content identification.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Workplace exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Butane	WES (NZ)	800	1900	--	--
Ethane	WES (NZ)	--	--	--	--
Propane	WES (NZ)	Asphyxiant			
Propylene	WES (NZ)	Asphyxiant			

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls: Provide suitable ventilation to minimise or eliminate exposure. Confined areas (e.g. Tanks) should be adequately ventilated or gas tested. Local exhaust ventilation is usually required. Provide explosion proof ventilation system. Performance of ventilation system should be regularly monitored. If air contaminant levels exceed exposure standard, respiratory protection will be required.

PPE
- Eye / Face: Wear safety glasses.
- Hands: Wear leather or insulated 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, Liquid under pressure. Has an unpleasant odour.
Odour: Mercaptan odour when odourised unpleasant smell resembling that of rotten eggs or garlic (otherwise odourless).

		Propane	Butane	LPG (Typical)
Boiling Point (at atmospheric pressure)		-42C	0C	
Vapour Pressure	-10C	256 kPa	-4 kPa	185 kPa
	0C	388 kPa	40 kPa	292 kPa
	10C	552 kPa	95 kPa	424 kPa
	20C	757 kPa	172 kPa	593 kPa
	30C	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		-105C	-60C	
Flammability Limits		2.2 – 9.5%	1.5 – 9.0%	2 - 10%
Auto Ignition Temperature		468C	430C	

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions (Polymerization)

Polymerization will not occur.

10.4 Conditions to avoid

No information provided.

10.5 Incompatible materials

Incompatible with oxidising agents (eg. hypochlorites), acids (eg. nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides. Also, incompatible with nickel carbonyl and oxygen (explodes at 20-40°C), barium peroxide (violent exothermic reaction) and chlorine dioxide (spontaneous explosion).

10.6 Hazardous decomposition products

Heating to decomposition produces acrid smoke and irritating fumes such as carbon monoxide and other unidentifiable organic compounds. Under normal conditions of storage hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Health hazard summary Asphyxiant. Symptoms of exposure are directly related to displacement of oxygen. 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	Direct contact with evaporating liquid may result in cold burns, similar to frostbite injury, with possible permanent damage.
Inhalation	Asphyxiant. Effects are proportional to oxygen displacement. Acts as a simple asphyxiant by displacing oxygen in the lungs thereby diminishing the supply of oxygen to the blood and tissues. May cause sensitisation by inhalation.

Skin	Direct contact with the liquefied material or escaping compressed gas may cause cold burns similar to frostbite injury. Not a skin sensitizer.
Ingestion	Ingestion is considered unlikely due to product form.
Health Hazard (Long term-chronic exposure)	None known
Toxicity data	PROPANE (74-98-6) Ethyl Mercaptan (75-08-1) LC50 (Inhalation): 2770 ppm/4 hours (mouse) LD50 (Ingestion): 682 mg/kg (rat) LD50 (Intraperitoneal): 226 mg/kg (rat)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bio accumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Aquatic toxicity

Not expected to be harmful to aquatic organisms.

12.6 Other adverse effects

No known ecological damage is caused by this product.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents. Disposal of released gas: Water spray should be used to disperse the gas. LPG is heavier than air. Do not allow gas to collect in sewers or drains. Emergency personnel should remain upwind of a gas cloud at all times.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Classified as a dangerous good according to land transport rule: dangerous goods 2005; NZS

5433:2007, UN Model Regulations, IMDG or IATA

Transport information

Class	2.1	Hazchem Code	2YE
Shipping Name	Propane	Butane	LPG
UN Number	1978	1011	1075

Pictogram for transport

(No. 2.1)
Division 2.1
Flammable gases
Symbol (flame): black or white;

		Land Transport (NZS 5433)	Sea Transport (IMDG / IMO)	Air Transport (IATA / ICAO)
14.1	UN Number	1075	1075	1075
14.2	UN proper shipping name		Liquefied Petroleum Gas	
14.3	Transport hazard classes			
DG Division		2.1	2.1	2.1
Subsidiary risk(s)		None allocated	None allocated	None allocated
14.4	Packing group	None allocated	None allocated	None allocated
14.5	Environmental hazards		No information provided	
14.6	Special precautions for user			

Hazchem code 2YE

Other information Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.

15. REGULATORY INFORMATION

15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture

Approval Code HSR001009

Group name LPG (Liquefied Petroleum Gas)

Inventory listing(s) NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)
All components are listed on the NZIoC inventory, or are exempt.

16. ADDITIONAL INFORMATION

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this 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.

INGREDIENT DESCRIPTION:

A mixture of hydrocarbon gases liquefied by application of a few atmospheres pressure and/or refrigeration below their boiling points. The mixture consists of predominantly C3 and C4 hydrocarbons (propane and butanes) with small amounts of other hydrocarbons in the C1 to C7 range and additives, subject to the limits in section 3. Composition is per the New Zealand Standard Specification for LPG, NZS 5435.

Abbreviations

ACGI	American Conference of Governmental Industrial Hygienists
CAS#	Chemical Abstract Service number - used to uniquely identify chemical compounds
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
ERMANZ	Environmental Risk Management Authority (New Zealand)
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
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
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Revision History

Revision	Description
3.0	Initial SDS creation
	Standard SDS Review
	Standard SDS Review

Report Status	This document has been compiled by Genesis Energy on behalf of the manufacturer, importer or supplier of the product and servers as their Safety Data Sheet ('SDS'). It 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. While Genesis Energy 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. Genesis Energy 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	Genesis Energy

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