

SAFETY DATA SHEET



Product Name Liquid Petroleum Gas (LPG)

1. Identification of material and supplier

Supplier Name	Nova Energy
Address	118 Newton Street, Mount Manganui
Telephone	0800 668 257
Emergency	0800 668 257
Email	info@novaenergy.co.nz
Website	http://www.novaenergy.co.nz/contact-nova-energy
Synonym(s)	LP Gas • L.P.G. • Petroleum gas liquefied
Use(s)	Fuel • Heating
Date of issue	2 March 2012

2. Hazard identification

Classified as hazardous according to 'Hazardous Substances [Classification] Regulations: 2001'.

HSNO Classification	2.1.1A Flammable gases: high hazard
Hazard Statement	H220 Extremely flammable gas
Prevention Statement	P103 Read label before use (applies only where the substance is available to the general public). P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Response Statement	P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 Eliminate all ignition sources if safe to do so.
Storage Statement	P403 Store in a well-ventilated place.

Classified as a Dangerous Good according to Land Transport Rule: Dangerous Goods 2005; NZS 5433:2007, UN, IMDG OR IATA

UN No.	1075
DG Class	2.1
Subsidiary Risk(s)	None Allocated.
Packing Group	None Allocated.
Hazchem Code	2YE

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3. Composition and information on ingredients

<u>Product</u>	<u>CAS No.</u>	<u>Concentration</u>
LPG*	68476-85-7	100%

* Composition in accordance with NZS 5435: 1996. Major ingredients are typically:

<u>Ingredient</u>	<u>CAS No.</u>	<u>Concentration</u>
Propane	74-98-6	25 – 99 %
Butane	106-97-8	0 – 50 %
Ethane	74-84-0	< 5%
Pentane	109-66-0	< 2%
Ethyl Mercaptan (odorant)	75-08-1	< 0.1%

4. First aid measures

Eye	Irritation and possible if liquid enters the eye. Immediately flush eye(s) gently with tepid water for at least 15 minutes. Seek medical attention.
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.
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. Seek medical help immediately.
Ingestion	Not considered a potential route of exposure.
Advice to Doctor	Treat symptomatically.
First Aid Facilities	Eye wash facilities and sterile dressings should be available.

5. Fire fighting measures

Flammability	Highly flammable gas - potentially explosive. May form explosive mixtures with air. Combustion products include carbon dioxide, carbon monoxide, and water vapour.
Fire and Explosion	Temperatures in a fire may cause cylinders/gas pipes to rupture and pressure relief devices to be activated. Cool cylinders/gas pipeline or containers exposed to fire by applying water from a protected location. Do not approach cylinders/gas pipeline or containers suspected of being hot. This material is capable of forming explosive mixtures in air. Its vapours are heavier than air and will concentrate in lower areas e.g. drains, sumps etc. A hazard of re-ignition or explosion exists if flame is extinguished without stopping gas flow. Evacuate personnel upwind of gas source.

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Extinguishing	<p>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.</p> <p>Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders. If it is absolutely necessary to extinguish the flame, use dry chemical, foam or water (for pipeline fires dry powder is preferable). Water may be ineffective on flames but useful for other purposes, including cooling.</p>
Hazchem Code	2YE

6. Accidental release measures

Release	<p>If the cylinder or gas pipe is leaking, eliminate all potential ignition sources and evacuate area of personnel. Move impacted personnel upwind. Prevent spreading of vapours through drains and ventilation systems. Inform manufacturer/supplier of leak. Use personal protective equipment. For cylinders, carefully move material to a well-ventilated remote area and then allow discharging to atmosphere. Do not attempt to repair leaking valve or cylinder safety devices.</p>
Environmental Precautions	<p>Do not discharge gas into any place where its accumulation could be dangerous. Wherever possible gas should not be released into the environment.</p>

7. Storage, handling and identification

Storage	<p>Do not store near sources of ignition, oxidising agents, poisons, flammable liquids or combustible materials.</p> <p>Cylinders should be stored: upright, prevented from falling, in a secure area; below 45°C, 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.</p>
Handling	<p>Before use, carefully read the product label. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking, smoking and the use of non-intrinsically safe equipment in contaminated areas.</p>
LPG Cylinder Colour	<p>Colour coding should not be used for content identification.</p>

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8. Exposure controls and personal protection

Exposure Standards

Ingredient	Reference	TWA		STEL	
Ethyl mercaptan	WES (NZ)	0.5 ppm	1.3 mg/m ³	-	-
LPG	WES (NZ)	1,000 ppm	1,800 mg/m ³		

Engineering Controls

Avoid inhalation. Use in well ventilated areas. Generally no vapour hazard exists unless accidental discharge occurs. Gas is lighter than air and will disperse readily in well ventilated areas. Use explosion proof extraction ventilation where required. Maintain vapour levels below the recommended exposure standard.

PPE

When handling gas cylinders, the wearing of appropriate hand, eye and foot protection is recommended. Where an inhalation risk exists, wear: Self Contained Breathing Apparatus (SCBA) or an air-line respirator.



9. Physical and chemical properties

Appearance	Colourless gas	Solubility (water)	Very slight (0.039% vol./vol.)
Odour	Mercaptan odour when odourised unpleasant smell resembling that of rotten eggs or garlic (otherwise odourless)	Specific Gravity	Not applicable
pH	Not applicable	% Volatiles	100 %
Vapour Pressure	1050 kPa @ 25°C (Propane)	Flammability	Highly flammable
Vapour Density	1.53 to 2.00 (Air = 1)	Flash Point	-105°C (Propane)
Boiling Point	-42.1°C (Propane)	Upper Explosion Limit	9.5 %
Melting Point	-187.7°C (Propane)	Lower Explosion Limit	1.8 %
Evaporation Rate	Not applicable	Auto ignition Temperature	460°C (approx.)

10. Stability and reactivity

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid heat, sparks, open flames and other ignition sources.
Materials to Avoid	Incompatible with oxidising agents (e.g. hypochlorites, peroxides), acids (e.g. nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.
Hazardous Decomposition Products	May evolve carbon dioxide and carbon monoxide. Under normal conditions of storage hazardous decomposition products should not be produced.
Polymerization	Polymerization will not occur.

11. Toxicological information

Health Hazard (Short term – acute exposure)	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	Non-irritant.
Inhalation	Non-irritant - Asphyxiant. Effects are proportional to oxygen displacement.
Skin	Non-irritant.
Ingestion	Exposure is considered unlikely.
Health Hazard (Long term – chronic exposure)	None known
Toxicity Data	Ethyl Mercaptan (75-08-1) LC50 (Inhalation): 2770 ppm/4 hours (mouse) LD50 (Ingestion): 682 mg/kg (rat) LD50 (Intraperitoneal): 226 mg/kg (rat)
Sensitisation	Not a skin sensitiser

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12. Ecological information

Environment	No known adverse ecological damage is caused by this product.
Aquatic toxicity	Not expected to be harmful to aquatic organisms.

13. Disposal considerations

Waste Disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents. DO NOT incinerate LPG cylinders.
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, IMDG OR IATA

Shipping Name	Methane, Compressed or Natural Gas, Compressed with high methane content				
UN No.	1075	DG Class	2.1	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated	Hazchem Code	2YE		
IATA					
Shipping Name	Methane, Compressed or Natural Gas, Compressed with high methane content				
UN No.	1075	DG Class	2.1	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated				
IMDG					
Shipping Name	Methane, Compressed or Natural Gas, Compressed with high methane content				
UN No.	1075	DG Class	2.1	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated				



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15. Regulatory information

Group Name	LPG • Liquid Petroleum Gas
Approval Code	HSR001009
HSNO Controls	Refer to the ERMA website for more information: www.ermanz.govt.nz

16. Other information

Additional Information

Abbreviations:
ACGIH - American Conference of Industrial Hygienists.
ADG - Australian Dangerous Goods.
BEI - Biological Exposure Indice(s).
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EC No - European Community Number.
HSNO - Hazardous Substances and New Organisms.
IARC - International Agency for Research on Cancer.
mg/m³ - Milligrams per Cubic Metre.
NOS - Not Otherwise Specified.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
STEL - Short Term Exposure Limit.
TWA - Time Weighted Average.
WES (NZ) – Workplace Exposure Standards (2011)

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 Safety Data Sheet that would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Personal protective equipment guidelines:

The recommendation for protective equipment contained within this Safety Data Sheet 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.

While all due care to include accurate and up-to-date information in this Safety Data Sheet, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Nova 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 Safety Data Sheet.