



# SHELL LPG

## Material Safety Data Sheet

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 Date of Issue: 18 June 1997  
 Reviewed: 21 Dec 2005  
 Amended: 21 Dec 2005

**STATEMENT OF HAZARDOUS NATURE** Shell Liquid Petroleum Gas is classified as a Dangerous Good according to NZS 5433. Extremely flammable compressed gas or liquid. Will cause cold burns or frostbite if skin contact occurs with liquid

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### IDENTIFICATION

<b>Product Name</b>	<b>Shell Brand Name and Grade</b>	<b>Code</b>
SHELL LIQUID PETROLEUM GAS		23100
<b>Other Names</b>	LPG; Liquid Petroleum Gas, Automotive Mix; Industrial LPG	
<b>Uses</b>	Automotive, domestic (bottled) and industrial fuel	
<b>U.N. Number</b>	1075	
<b>Dangerous Goods Class</b>	2.1	
<b>Hazchem Code</b>	2WE	
<b>Toxic Substances Schedule</b>	Exempted	
<b>Packaging Group</b>		
<b>Shipping Name</b>	Petroleum Gases, liquefied	

### PHYSICAL DESCRIPTION / PROPERTIES

CHARACTERISTIC	UOM	
Appearance and Odour		Colourless gas, liquid under pressure. Unpleasant distinctive, mercaptan like odour.
Chemical Reactivity		Dangerous reaction with oxidising agents and concentrated nitric acid. Reacts violently with oxides of nitrogen.
Specific Gravity,	@ 15°C	0.532
Boiling Point,	°C	-42 (propane component); 0 (butane component)
Vapour Pressure	kPa	580 kPa @ 15C; 810 kPa @ 25C
Vapour Density	Air = 1	1.4 @ 15C
Solubility [water]		0.01% wt @ 20C
Flash Point	°C,	n/ap
Autoignition	°C,	430 for Butane; 486 for Propane
Flammability Limits	% v/v in air	LEL 2%   UEL 10%

Petroleum vapours are flammable (explosive) in proportions between approximately 1% and 10% of vapour in air by volume at ambient temperatures and pressures.

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<b>INGREDIENTS</b>	<b>Cas No</b>	<b>Proportion; %m/m</b>
Mixture of simple hydrocarbons having 3 or 4 carbon atoms, mainly propane and butane.	68476-85-7	100
Propane	74-98-6	
Butane	106-97-8	
Ethyl mercaptan as stenching agent	75-08-1	< 50 ppm

**HEALTH HAZARD INFORMATION**

**HEALTH EFFECTS**

- SWALLOWED** Ingestion of the product is unlikely.
- SKIN** Contact may lead to frostbite and low temperature tissue damage.  
Symptoms: pain, redness, blisters  
Frozen tissues: are painless and appear with waxy with very pale yellowish colour.
- EYE** Risk of serious damage to eyes. Evaporating liquid can cause cold burns.  
Symptoms: redness, pain, blurred vision.
- INHALED** May cause somnolence and narcosis. May also lead to headaches and dullness.  
Unconsciousness and death by asphyxiation may result from exposure exceeding the TLV (see exposure limits). There is a risk of low temperature tissue damage.

**FIRST AID**

- SWALLOWED** Not applicable.
- EYE** Hold eyes open, flood with water for at least 15 minutes. Urgently seek medical advice.
- SKIN – COLD BURNS** Remove from contaminated area. Remove any tight clothing with may impair the circulation.  
Immerse affected area in water from cold tap. **DO NOT REWARM RAPIDLY.**  
Alcoholic beverages reduce circulation to the frozen tissues and must not be administered.  
Seek immediate medical advice.
- INHALED** Remove affected person from contaminated area. If not breathing, apply artificial respiration. Urgently seek medical advice.

**ADVICE TO DOCTOR**

**SKIN - COLD CONTACT BURNS**

Frozen tissues are painless and appear wax and pale yellow in colour. If the part has thawed since the incident, do not re-warm but apply sterile dressings with loose bandaging. If the part has not thawed, place in warm water bath of temperature range 41-45 °C. Thawing may take 15 to 60 minutes and should be continued until the skins turns pink or red. Thawing tissue can be extremely painful. ANALGESIA will be necessary during thawing.

If there has been massive exposure, the general body temperature may be depressed and the patient must be immediately re-warmed by whole-body immersion in a bath at the above temperature - if necessary without removing clothes. Shock may occur during re-warming. When thawed, treat as with heat burns.

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After hospitalisation, administer tetanus toxoid booster.

Prophylactic antibiotics useful.

Anti-coagulants and oxygen may be required. When respiratory depression is present administer O<sub>2</sub> and ventilation assistance. Monitor for cardiac arrest.

### PRECAUTIONS FOR USE

### EXPOSURE STANDARDS

Threshold Limit Value (TLV) - 1000ppm, 1800mg/m<sup>3</sup> TWA ACGIH.

### ENGINEERING CONTROLS

Use in well ventilated area only. Local exhaust ventilation usually required. Provide explosion proof ventilation system. Performance of ventilation system should be regularly monitored. If air contaminant levels exceed TLV, respiratory protection required.

### PERSONAL PROTECTION

Since we cannot anticipate or control the many different conditions under which this information and our products may be used, each user should review these recommendations in the specific context of the intended application and follow where appropriate.

For normal industrial use, where contaminant vapour/mist levels are well below the TLV the following equipment is recommended:

- (1) Eye protection - goggles
- (2) Thermal insulating gloves.

If personal contamination occurs, leave the area and change clothing under a shower to prevent ignition by static electricity discharge.

Eye wash fountains and safety showers should be available for emergency use.

Emergency personnel should wear full protective clothing including:-

Full-face air supplied or self contained breathing apparatus. Refer to NZS/AS1715 and 1716 for selection and use of correct type. Non-sparking boots. A lifeline should be available, especially in confined areas.

### FLAMMABILITY

Highly flammable. Isolate from sources of heat, naked flames or sparks. Take precautions against static electricity discharges. Explosive air-vapour mixture may form, ensure adequate ventilation. See Safe Handling Information - Fire/Explosion Hazard.

Gas collects at floor level and flows to low-lying points such as drains. It readily forms an explosive mixture with air. Weak concentrations of gas can be ignited and the flame will travel back to the source of the leak.

### SAFE HANDLING INFORMATION

### STORAGE AND TRANSPORT

Store, maintain and use container in well-ventilated place.

This product is Classified as a Class 2.1 – Flammable Gas according to NZS5433:1999 Transport of Dangerous Goods on Land. Apply correct labels for transport purposes.

UN No.: 1075

Proper shipping name: PETROLEUM GASES, LIQUIFIED

DG Class: 2.1

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Hazchem code: 3WE

### Marine Transport:

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by Sea

UN No.: 1075  
Class: 2.1 Flammable Gas

### Packing Group:

Proper shipping Name: PETROLEUM GASES, LIQUIFIED

### Air Transport:

Classified as Dangerous Goods by the Criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No.: 1075  
Class: 2.1 Flammable Gas

### Packing Group:

Proper shipping Name: PETROLEUM GASES, LIQUIFIED

## SPILLS AND DISPOSAL

**GENERAL:** Leaks may be detected by the odour of the stenching agent. Pressurised liquid leaks will immediately vaporise at normal air pressures. Avoid breathing the gas. Avoid contact of the liquid with skin and eyes. Clear area of all unprotected personnel. Extinguish or remove all sources of ignition. Switch off power supplies. Shut off source of leak if safe to do so. Contact emergency authorities (Fire Brigade) and advise nature of hazard.

**EVACUATION:** Evacuate personnel and remove fire sources to beyond those at which the gas detector indicates a gas concentration less than 5% of the lower explosion limit (LEL). Regular monitoring is to be carried out until area is free of dispersed gas. Determine safe distance by use of a combustible gas detector. If gas detector is unavailable move personnel and portable ignition sources to at least 50 metres away.

**WASTE MATERIAL DISPOSAL:-** A 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.

## FIRE / EXPLOSION HAZARD

Evacuate personnel and remove fire sources to distances beyond those at which the gas detector indicates a gas concentration less than 5% of the lower explosion limit (LEL).

Explosive air-vapour mixture may form. Advise Fire Brigade of nature of hazard. In this case: LPG with a HAZCHEM CODE of 2WE.

In smoke or fume wear self-contained breathing apparatus. Carbon Monoxide and unidentifiable organic compounds may be formed during combustion.

### IN GENERAL

The best way to extinguish a gas fire is to close the nearest isolating valve to the leak. If this is impossible then it is safer to allow a pressurised gas stream that has ignited to burn itself out. This prevents the formation of an invisible gas cloud that could ignite and explode, as well as relieving the pressure on gas storage vessels.

Cool containers by directing water spray primarily onto the upper surfaces. Where possible and safe to do so, remove cool containers from endangered area.

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After the gas supply has been isolated, it will be necessary to evaluate, depending on the local circumstances, whether to extinguish the remaining fire (risk of reignition and explosion of any residual gas) or to allow the fire to burn out (risk of heat radiation and fire spreading to other materials).

#### **REGULATORY INFORMATION**

This product is classified as a 2.1.1A – Flammable Gas; High Hazard, according to the Hazardous Substances (Classification) Regulations 2001.

#### **OTHER INFORMATION**

#### **SPECIAL NOTES**

- (i) Refer to the Vocational Register of Dermatologists; published by the Medical Council of New Zealand. Telephone 04-384 7635
- (ii) In dry-cleaning oil contaminated clothing it is important that the machine is not overloaded and that freshly distilled solvent is used for each batch, also that clothing is given a final rinse in clean solvent. If filtered, rather than distilled solvent is used or the rinse is omitted, oil will be left in the clothing.

#### **CONTACT POINT**

Shell New Zealand Customer Service Centre  
0800 474 355