



Material Safety Data Sheet

Safety data sheet Code

Issue Date

Propane  
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May 1, 2006**SECTION 1: Identification of substance/preparation and company**

Identification of substance:

**Propane.**

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**SECTION 2: Composition/information on ingredients**

<u>SUBSTANCE</u>	<u>CONCENTRATION</u>	<u>CAS #</u>	<u>EEC #</u>	<u>HAZARD</u>
Propane	99.5%	106-97-8	601 004 00 0	R12

R12 Extremely flammable.

Contains ethyl mercaptan/ethanethiol as an odour agent.

Contains no other substances or impurities that are classified as hazardous for supply as defined in the Dangerous Substances Directive 67/548/EEC (with subsequent amendments and adaptations) and Dangerous Preparations Directive 88/379/EEC (with subsequent amendments and adaptations). In particular, the concentration of dienes, including 1,3 butadiene is less than 0.1%.

**SECTION 3: Hazards identification**

Liquefied gas under pressure.

Extremely flammable - explosive air/vapour mixtures may form at ambient temperature.

Abuse involving wilful inhalation of high concentrations of vapour can produce unconsciousness and may cause death.

Skin contact with liquid will cause cold burns and frostbite.

**SECTION 4: First aid measures**

Inhalation: May cause drowsiness, headache, blurred vision and irritation of eyes, nose or throat. Remove to fresh air and keep patient warm and calm. If symptoms persist obtain medical advice. Unconscious casualties must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed respiration should be assisted, preferably by mouth to mouth method. Administer cardiac massage if necessary. **SEEK MEDICAL ATTENTION IMMEDIATELY**

Eye contact: Contact with liquid - Flush with water for at least 15 minutes. Apply sterile, dry dressing. SEEK MEDICAL ATTENTION IMMEDIATELY a

Skin contact: Contact with liquid - Flush with water for at least 15 minutes. Apply sterile, dry dressing. SEEK MEDICAL ATTENTION IMMEDIATELY a

Ingestion: Not considered a potential route of exposure.

## SECTION 5: Fire fighting measures

Propane supplied and stored above its flash point - avoid all naked flames.

Pressurised containers may rupture/explode.

If possible, stop flow of product. Move container away and cool with water from protected position.

Do not extinguish a leaking gas flame unless absolutely necessary - spontaneous explosive re-ignition may occur. Extinguish any other fire.

Extinguishing media: All known extinguishers can be used.  
Dry powder recommended for small fires.

Exposure hazards from preparation, combustion products, resulting gases etc.: Incomplete combustion may form carbon dioxide.

Special protective equipment: In confined space use self-contained breathing apparatus.

## SECTION 6 Accidental release measures

**Extremely flammable gas severe fire +/- or explosion risk.**

Extinguish all sources of ignition. Evacuate area, ensure adequate ventilation. If possible, stop flow.

In case of major escape of gas wear self contained breathing apparatus when entering area unless atmosphere is proved to be safe. Prevent accumulation of propane in sewers, basements other enclosed areas - severe explosion risk.

Small quantities of spilled liquid may be allowed to evaporate - vapour should be dispersed by effective ventilation.

## SECTION 7: Handling and storage

Handling: Open valve slowly to avoid pressure shock.

Avoid suck back of water into cylinder.

Avoid back feed into the container.

Only use equipment which is suitable for this product, its supply, pressure and temperature - contact your supplier in all cases of doubt.

Before using this product in any new process, a thorough material compatibility and safety study should be carried out.

Always check cylinders when first collected, delivered or used, using an approved leak detection fluid.

Storage: Keep container below 50°C in a well ventilated area.

Ensure equipment is electrically bonded and earthed to prevent static accumulation.

Segregate from acetylene, oxidant gases and other oxidants in store.

Cylinder sizes A, B, D and E should remain upright at all times and in the open air.

Refer to supplier's container handling instructions

## SECTION 8: Exposure controls/personal protection

Do not smoke while handling product.

Wear suitable head, hand and body protection.

Ensure adequate ventilation.

Keep self-contained breathing apparatus readily available for emergency use.

## OCCUPATIONAL EXPOSURE LIMITS

	<u>Long term exposure limit</u>		<u>Short term exposure limit</u>	
LPG	1000ppm	1750mg/m <sup>3</sup>	1250ppm	2180mg/m <sup>3</sup>
Ethyl mercaptan	0.5ppm	1.3mg/m <sup>3</sup>	2ppm	5.2mg/m <sup>3</sup>

## SECTION 9: Physical and chemical properties

Appearance: Colourless gas.

Odour: Sulphurous due to stenching agent.

Vapour heavier than air.

Boiling point: - 42.1°C

Melting point: - 188°C

Critical temperature: 97°C

Auto ignition temperature: 470°C

Flammability range: 2.2 - 9.5 vol% in air.

Relative density, gas: 1.5 (air = 1)

Relative density, liquid: 0.58 (water = 1)

Vapour pressure @ 20°C: 8.3 bar

Solubility in water: 75mg/l

## SECTION 10: Stability and reactivity

May form explosive mixtures with air.

May react violently with oxidants.

Hazardous polymerisation will not occur.

## SECTION 11: Toxicological information

Eyes: Contact with liquid will result in serious damage.

Skin: Contact with liquid will cause cold burns and frostbite.

Inhalation: May cause drowsiness, headache, blurred vision and irritation of eyes, nose or throat. High concentrations may have a narcotic effect.

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Wilful inhalation of propane may produce unconsciousness and/or death.

## SECTION 12: Ecological information

Propane is a greenhouse gas.

No data available.

## SECTION 13: Disposal considerations

Do not dispose of any non-empty LPG container. Cylinders should be emptied and returned to a hazardous waste collection facility.

Do not discharge into any area where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Empty cylinders still contain flammable vapour.

Disposal of waste gas cartridges and aerosols must be disposed of in compliance with the current national and local legislation.

In England and Wales, this is primarily The Hazardous Waste Regulations 2005 and in Scotland, The Special Waste Regulations 2005.

The implications of this legislation may require you to register your premises as a producer of hazardous waste and consign this waste in compliance with the above regulations. All waste from commercial activities is controlled waste and therefore, unless used by private individuals for no commercial gain, these articles must be disposed of as such.

The List of Wastes (England) Regulations provides the European Waste Codes (EWC) for these as:

16 05 04\* gases in pressure containers (including halons) containing dangerous substances

## SECTION 14: Transport information

UN Nr.:	1075
Class/Division:	2.1
ADR/RID item Nr.:	2,2f
ADR/RID Hazard Nr.:	23
Tremcard Nr.:	27a
Group card Nr.:	20gl I
Labelling ADR	Label 3: flammable gas

### Further transport advice:

Avoid transport on vehicles where the load space is not separated from the drivers compartment.

Ensure that the vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers ensure that they are firmly secured and:

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- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- adequate ventilation
- compliance with applicable regulations

**SECTION 15: Regulatory information**

Classification:	Extremely flammable.
- Symbols	F+
- Risk phrases	R12 Extremely flammable
- Safety phrases	S2 Keep out of reach of children S3/9 keep in a cool and well ventilated place. S16 Keep away from sources of ignition - no smoking S36/37/39 Wear suitable protective clothing, gloves eye/face protection.

**SECTION 16: Other information**

CONCAWE Product dossier "Liquefied Petroleum Gas", 92/102 contains additional toxicological and ecological data.

For further safety information please refer to "Safe Under Pressure" and "Safe handling, storage and transport of industrial gas cylinders".