



Material Safety Data Sheet

LPG

1 Chemical product and company identification

Supplier	: Sasol Oil PO Box 4211 Randburg 2125 South Africa	Manufacturer	: Various
Synonym	: liquified petroleum gas (dot); liquified petroleum gas (l.p.g.)	Code	: 21111
Trade name	: Not available.	MSDS#	: Not available.
Material uses	: Fuel	Validation date	: 07/08/2003.
In case of emergency	: +27 11 889 7600 0800 11 28 90 (after hours)	Print date	: 18/08/2003.
		Prepared by	: Sasol Oil Technical Services - Randburg

2 Composition / information on ingredients

Substance/preparation : Substance

Chemical name*	CAS No.	%	EC Number	Classification
Europe Petroleum gases, liquified See Section 16 for the full text of the R Phrases declared above	68476-85-7	100	270-704-2	F+; R12

* Occupational exposure limit(s), if available, are listed in section 8

3 Hazards identification

The substance is classified as dangerous according to Directive 67/548/EEC and its amendments.

Classification	: F+; R12
Additional Hazards	: Container explosion may occur under fire conditions or when heated. Liquid can cause burns similar to frostbite.
Effects and symptoms	: Simple asphyxiant. Inhalation of vapors may cause dizziness, an irregular heartbeat, narcosis, nausea or asphyxiation.
Aggravating conditions	: Repeated or prolonged exposure is not known to aggravate any medical condition.

See Toxicological Information (section 11)

4 First-aid measures

First-aid measures

Inhalation	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	: Since the product is a gas and that it is mostly probable that it will be inhaled more than ingested, please consider first to look at the preventive measures in case of inhalation.
Skin contact	: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

LPG

Eye contact : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Notes to physician : No specific treatment, treat symptomatically. If breathing is difficult give oxygen, if respiratory arrest occurs provide artificial respiration and seek immediate medical assistance.

Protection of first-aiders : No additional remark.

5 Fire-fighting measures**Extinguishing Media**

Suitable : **SMALL FIRE:** Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet. Move containing vessels from fire area if without risk. Cool containing vessels with flooding quantities of water until well after fire is out. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Do not extinguish a leaking gas flame unless leak can be stopped. Extinguish secondary fire. Handle damaged cylinders with extreme care. Use extinguishing media suitable for surrounding materials.

Special fire-fighting procedures : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Hazardous thermal (de)composition products : These products are carbon oxides (CO, CO2)

Protection of fire-fighters : Be sure to use an approved/certified respirator or equivalent.

Unusual fire/explosion hazards : Container explosion may occur under fire conditions or when heated.

6 Accidental release measures

Personal precautions : See section 8 for appropriate PPE and respirator selection criteria. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Environmental precautions and clean-up methods : Let evaporate. If possible, turn leaking container so that gas escapes rather than liquid. Do not touch spilled material. Do not direct water at spill or source. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas. Eliminate all ignition sources.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

7 Handling and storage

Handling : Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Keep container tightly closed and in a well-ventilated place. Keep away from incompatibles such as oxidizing agents.

Storage : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Segregate from oxidizing materials. Avoid all possible sources of ignition (spark or flame).

Packaging materials

Recommended use : Use original container.

8 Exposure controls/personal protection

Engineering measures : Ventilation is normally required when handling or using this product.

Hygiene measures : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Occupational exposure limits :

Ingredient Name LPG	Occupational Exposure Limits ACGIH (United States). TWA: 1800 mg/m ³ TWA: 1000 ppm ACGIH TLV (United States, 2003). TWA: 1800 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s).
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Recommended monitoring procedures : No additional remark.

Personal protective equipment

Respiratory system : A respirator is not needed under normal and intended conditions of product use. Wear appropriate respirator when ventilation is inadequate. Respirator selection (NIOSH/OSHA) :

IDLH (2000 ppm): Any supplied-air respirator. (Assigned Protection Factor = 10). Any self contained breathing apparatus with a full facepiece. (Assigned Protection Factor = 50)

Emergency or planned entry into unknown concentrations or IDLH conditions: Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode (Assigned Protection Factor = 10000). Any supplied air respirator that has a full facepiece and is operated in a pressure-demand or other positive pressure mode in combination with and auxilliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode. (Assigned Protection Factor = 10000)

Escape: Any appropriate escape-type, self controlled breathing apparatus.

Skin and body : No special protective clothing is required under normal conditions of use. If contact with liquid can be expected during handling, use appropriate protective equipment.

Hands : No special protective clothing is required during normal conditions of use. If contact with liquid during handling can be expected, use appropriate hand protection.

Eyes : No special protective clothing is required during normal conditions of use. Wear appropriate splash goggles if contact with liquid can be expected during handling.

9 Physical and chemical properties

Physical state : Gas. (Liquefied Petroleum Gas)

Color : Colorless.

Odor : Unpleasant.

Odor threshold : Not available.

Boiling point : >-42.17°C (-43.9°F)

Melting point : Not available.

Density : 0.50 - 0.59 (Liquid)

Vapor density : 1.5 - 2.1

Vapor pressure : Not applicable.

Evaporation rate (butyl acetate = 1) : Not available.

Solubility : Insoluble in cold water, hot water.

Octanol/water partition coefficient : Not available.

pH : Not applicable.

Flash point : Closed cup: -104.44°C (-156°F).

Autoignition temperature : 434.9°C (814.8°F)

Explosion Limits : LOWER: 1.9% UPPER: 8.5%

Viscosity : Not available.

10 Stability and reactivity

Stability	: The product is stable.
Conditions to avoid	: Not available.
Materials to avoid	: Reactive with oxidizing agents.
Hazardous Decomposition Products	: These products are carbon oxides (CO, CO ₂)
Hazardous Polymerization	: Will not occur.

11 Toxicological information

Potential Acute Health Effects

Eyes	: Liquid can cause burns similar to frostbite.
Skin	: Liquid can cause burns similar to frostbite.
Inhalation	: Simple asphyxiant. Inhalation of vapors may cause dizziness, an irregular heartbeat, narcosis, nausea or asphyxiation.
Ingestion	: Not an expected route of entry.
Routes of Entry	: Absorbed through skin. Eye contact. Inhalation.
Target Organs	: Causes damage to the following organs: central nervous system (CNS)
Acute toxicity	:

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
No additional information.				

Special Remarks on Toxicity to Animals : Simple asphyxiant.

Specific effects :

<u>Ingredient Name</u>	<u>Carcinogenic Effects</u>	<u>Mutagenic Effects</u>	<u>Developmental toxicity</u>	<u>Impairs fertility</u>
No evidence of risk in humans.				

Special Remarks on Chronic Effects on Humans : No additional remark.

Special Remarks on Other Toxic Effects on Humans : Narcotic in high concentrations.

12 Ecological information

Ecotoxicity Data :

<u>Ingredient Name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
No additional information.			

Ecological information :

Mobility	: Not available.
Soil/Water Partition Coefficient (K_{OC})	: Not available.
Persistence/degradability	: Readily biodegradable
Bioaccumulative potential	: Not expected to bioaccumulate.

<u>Ingredient Name</u>	<u>Persistence/degradability</u>						<u>Bioaccumulative potential</u>		
	<u>BOD₅</u>	<u>COD</u>	<u>ThOD</u>	<u>Aquatic Half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>	<u>LogP_{ow}</u>	<u>BCF</u>	<u>Potential</u>
No additional information.									





Remarks : No additional remark.

13 Disposal considerations

Methods of disposal : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14 Transport information

International transport regulations

Regulatory Information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Class	1075	PETROLEUM GASES, LIQUEFIED	2.1			Hazard Identification Number 23 Limited Quantity LQ0 CEPIC Tremcard 20G2F
ADN Class	1075	PETROLEUM GASES, LIQUEFIED	2			-
IMDG Class	1075	PETROLEUM GASES, LIQUEFIED	2.1			-
IATA-DGR Class	1075	PETROLEUM GASES, LIQUEFIED	2.1			Packaging Instruction Passenger Aircraft Quantity limitation: Forbidden. Cargo Aircraft Quantity limitation: 150 kg Packaging instructions: 200

15 Regulatory information

EU Regulations

Hazard symbol(s) :



Extremely flammable

Indication of Danger

Risk phrases

: R12- Extremely flammable.

Safety phrases

: S53- Avoid exposure - obtain special instructions before use.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains

: Not applicable.

Product use

: Classification and labeling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amendments and the intended use.
- Consumer applications.

16 Other information

Full text of R-Phrases with no. appearing in Section 2 : R12- Extremely flammable.

Text of classifications appearing in Section 2 : F+ - Extremely flammable

Other special considerations : None identified.

History

Date of printing : **18/08/2003.**

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Prepared by : **Sasol Oil Technical Services**

Notice to reader

This MSDS summarises at the date of issue our best knowledge of the health, safety and environmental hazard information related to the product, and in particular how to safely handle, use, store and transport the product in the workplace. Since SASOL and its subsidiaries cannot anticipate or control the conditions under which the product may be handled, used, stored or transported, each user must, prior to usage, review this MSDS in the context of how the user intends to handle, use, store or transport the product in the workplace and beyond, and communicate such information to all relevant parties. If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

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