

Flogas LPG / Propane / Butane Safety Data Sheet

According to EC 1907/2006



www.flogas.ie

Section 1 - Identification Of The Substance/Mixture And Of The Company/Undertaking

1.1 Product Identifier

Petroleum Gases - Liquefied, under the trade names Flogas Butane, Flogas Propane, Flogas LPG, Ergas Butane, Ergas Propane, Ergas LPG, Flogas Autogas, Ergas Autogas and Flogas Patio Gas.

NB: LPG (Liquefied Petroleum Gas) is a generic term to describe mixtures of hydrocarbons predominately in the C3 or C4 range.

Name	PROPANE	BUTANE
EC Number	200-827-9	203-448-7
REACH Registration Number	Exempt from REACH registration	
CAS Number	74-98-6	106-97-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Multi-purpose product with applications including gaseous fuel for domestic, commercial and industrial uses; liquid fuel for propulsion; aerosol propellant. For specific advice, consult Flogas.

1.3 Details of the supplier of the safety data sheet

Flogas Ireland Ltd,
Knockbrack House,
Matthews Lane, Donore Road,
Drogheda,
Co. Louth.

Telephone: 041-9831041 or 021-4506688

Website: www.flogas.ie

Email: info@flogas.ie

1.4 Emergency Telephone Number: 041-9831041 (24 hours) or 021-4506688 (24 hours)

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:

Flammable gases	Category 1	H220
Gases under pressure	Liquefied gas	

2.1.2 Classification according to Directive 67/548/EEC: F+; R12

2.2 Label Elements

Signal Word: Danger

Hazard Statements: H220: Extremely flammable gas



Hazard Pictogram

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 Eliminate all ignition sources if safe to do so
P403 Store in a well ventilated place

2.3 Other Hazards

Vapour is heavier than air and may travel to remote sources of ignition (e.g. along drainage systems, into basements, etc.).

Liquid leaks generate large volumes of flammable vapour (approximately 250 : 1).

Section 3 - Composition/Information On Ingredients

3.1 Substances

Chemical Name	CAS No.	Einecs No.	CLP Classification	DSD Classification
Propane	74-98-6	200-827-9	H220	F+;R12
Butane	106-97-8	203-448-7	H220	F+;R12

Commercial LPG, Butane and Propane are blends of hydrocarbon components. Commercial Propane is C3 rich, Commercial Butane is C4 rich. For safety reasons, Ethyl Mercaptan is added as an odourising agent (approximately 20 ppm), and Methanol may be added as an anti-icing agent.

Section 4 - First-Aid Measures

4.1 Description of first aid measures following

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get immediate medical attention.

Skin Contact: In case of cold burns, immediately place affected area in warm water (40°C approx.) and keep immersed until circulation returns. Get immediate medical advice.

Inhalation: If exposure causes drowsiness, headache, blurred vision or irritation, remove to fresh air. Keep warm and at rest and seek medical attention. If unconscious, place in recovery position and immediately obtain medical assistance. While awaiting assistance, monitor pulse and breathing and administer mouth to mouth resuscitation if necessary. Severe inhalation over exposure to LPG may sensitise the heart to catecholamine-induced arrhythmics. Do not administer catecholamines to overexposed individuals. Contact the Poisons Information Service and/or seek further medical advice.

Ingestion: Not applicable

Section 5 - Fire-Fighting Measures

In the case of fire, activate emergency systems and/or sound the alarm. Call the fire brigade. Call Flogas 041-9831041 (24 hours) or 021-4506688 (24 hours). Vacate all unnecessary personnel from the area. Ensure an escape route is always available from any fire.

5.1 Extinguishing media

Water Spray, Foam, Dry Chemical, Carbon Dioxide.

5.2 Special Hazards arising from the substance

Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapour/air explosion hazard indoors or in confined spaces. Container may rupture if subjected to high temperatures.

5.3 Advice for Firefighters

If it is safe to do so, close the container valve(s), using a protective water spray if necessary. If unable to cut off supply of gas, allow it to burn, except where the fire is impinging on the vapour space of an LPG vessel and the vessel surface cannot be kept cool using water sprays - in this case, extinguish the fire to avoid the risk of the vessel rupturing. Keep LPG cylinders or tanks cool with copious quantities of water spray, as pressurised containers are liable to explode if subjected to high temperatures.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

As these substances have a very low flash point any spillage or leak is a severe fire and/or explosion hazard. If a leak has not ignited, stop gas flow at container (e.g. by turning off valves or by fitting caps to filler valves or cylinder service valves) and eliminate all sources of ignition.

If the leak cannot be stopped or if a significant leak has occurred, evacuate personnel, activate emergency systems and/or sound the alarm. Stay upwind of release. Inform the emergency services. Inform Flogas 041-9831041 (24 hours), 021-4506688 (24 hours).

If spillage has occurred in a confined space, ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry.

Do not enter a vapour cloud except for rescue or attempting to stop leakage. Self-contained breathing apparatus or protective water sprays or ideally both should be used for personnel entering a vapour cloud.

Wear protective clothing. See Exposure Controls/Personal Protection, Section 8, of this Safety Data Sheet.

In the event of a major leak, contact the appropriate authorities.

6.2 Environmental precautions

Prevent further leaks if safe to do so. Small quantities of spilled liquid may be allowed to evaporate. Vapour should be dispersed by effective ventilation.

6.3 Methods and material for containment and cleaning up

Ventilate the area, evacuate all personnel and stop the flow of gas or liquid if it is safe to do so.

Section 7 - Handling And Storage

7.1. Precautions for Safe Handling

Ensure good ventilation and avoid inhalation of vapour. Avoid contact with the eyes. Avoid contact with liquid and cold (refrigerated or ice-covered) storage containers.

When handling cylinders wear protective footwear and suitable gloves. When handling cylinders (above head height) protective headgear may be necessary. Cylinders must be upright always (in handling, storage or use).

When dispensing liquid, wear suitable gloves and safety goggles or face shields and follow the instructions provided.

7.2 Conditions for Safe Storage

Store and use only in equipment/containers for use with these products. Storage is governed by specific Regulations; storage in bulk tanks must be in accordance with Irish Standard 3216, and storage in cylinders must be in accordance with Irish Standard 3213. Installation should be in accordance with relevant codes and standards, see section 16, and work must only be carried out by competent persons. Always follow instructions and signage provided, particularly in the case of filling LPG containers by non-Flogas personnel. If any is missing, request replacements from Flogas.

Section 8 - Exposure Controls/Personal Protection

8.1 Control Parameters

	Long Term Exposure Limit (PPM) (8 HOUR TWA)	Short Term Exposure Limit (PPM) (10 HOUR TWA)
Butane	600	750
LPG	1000	1250000
Propane	None Established. Considered to be an asphyxiant at high concentration in air	

* as per HSC Eh40 and ACGIH,

Relevant DNEL and PNEC: Not applicable

8.2 Exposure Controls

Appropriate Engineering Controls

Ventilation - Store the product in a well ventilated place. Use local ventilation to control exposure of the product to below the recommended limits in the table above.

Protective Clothing

Skin Protection - Wear suitable protective overalls with long sleeves to cover exposed skin.

Eye Protection - Use chemical goggles or face shield when dispensing liquid.

Foot Protection - Wear safety boots or shoes when handling cylinders.

Hand Protection - Use impervious gloves when dispensing liquid. Use suitable protective gloves when handling cylinders.

Respiration - If significant exposure to vapour is anticipated, use approved respiratory equipment.

Head Protection - When handling cylinders above head heights, protective headgear may be necessary.

Foot Protection - Wear safety boots or shoes when handling cylinders.

Section 9- Physical and Chemical Properties

Data represents typical values and not intended to be specifications

	Units	Butane	Propane
Physical State		Gas when at atmospheric pressure and above boiling point. Liquid under pressure.	
Colour		Colourless	
Odour		Odourless, but odourant added to provide a distinctive smell	
Odour Threshold		N/A	
pH		N/A	
Melting/Freezing Point	°C	-138	-188
Boiling Point	°C	-2	-42
Flash Point (PMC)	°C	-60	-104
Evaporation Rate		N/A	
Flammability (Solid, Gas)		Extremely Flammable	
Flammability Limits (In Air)	%	1.9 to 8.5	2.3 to 9.5
Gauge Vapour Pressure	Bar	2 @ 25°C	8.6 @ 20°C
Vapour Density Relative to Air		2.0 @ 15°C	1.5 @ 15°C
Specific Gravity of Liquid		0.575	0.508
Solubility In Water		Negligible	
Partition Coefficient: n-octanol/water		Not available	
Auto flammability	°C	410 to 550	460 to 550
Decomposition Temperature		Not available	
Viscosity		Not available	
Explosive properties		N/A	
Oxidising properties		N/A	

Section 10 - Stability and Reactivity

Reactivity: Not chemically reactive.

Chemical Stability: Stable at ambient temperatures. Hazardous polymerisation reactions will not occur.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Heat will cause pressure to increase and container may burst

Material to Avoid: Avoid contact with strong oxidising agents.

Hazardous Decomposition Products: None (normally Carbon Dioxide).

Incomplete combustion will generate Carbon Monoxide, which is toxic.

Note - can form explosive mixture with air.

Section 11 - Toxicological Information

Information on toxicological effects

Acute Toxicity

Suffocation hazard - Low vapour concentrations may cause nausea, dizziness, headaches and drowsiness. High vapour concentrations may produce symptoms of oxygen deficiency which, coupled with central nervous system depression, may lead to rapid loss of consciousness. Will present a risk of serious damage to the eyes if contact with liquid or vapour pressure jet occurs. Will cause cold burns (frostbite) if skin contact with liquid occurs.

Skin corrosion/irritation:	Not classified as an irritant
Serious eye damage/irritation:	Not classified as an irritant
Respiratory or skin sensitization:	Not classified as a sensitizer
Germ cell mutagenicity:	Not assigned
Carcinogenicity:	Not assigned
Reproductive toxicity:	Not assigned
Specific target organ toxicity - Single exposure:	Not assigned
Specific target organ toxicity - Repeated exposure:	Not assigned
Aspiration hazard:	Not applicable

Section 12 - Ecological Information

Toxicity: Unlikely to cause long term effects in the aquatic environment.

Persistence and Degradability: Unlikely to cause long term adverse effects to the environment.

Will photodegrade under atmospheric conditions.

Bioaccumulative Potential: This material is not expected to bioaccumulate.

Mobility in soil: Spillages are unlikely to penetrate the soil.

Results of PBT and vPvB assessment: Not a PBT or a vPvB substance

Other adverse effects: Not available

Section 13 - Disposal Considerations

Waste treatment methods: Product discharge may only be carried out by Flogas.

Do not interfere with LPG tanks or cylinders.

Do not dispose of any LPG container. Return all cylinders to the supplier for disposal. Tanks which are the property of Flogas should only be uplifted or disposed of by Flogas. Tanks and cylinders which are not the property of Flogas should only be disposed of in consultation with the original tank or cylinder supplier.

European Waste Code: 16 05 04*

Section 14 - Transport Information

Transport product in compliance with provisions of the ADR

	Butane	Propane
UN Number	UN1011	UN1978
UN proper shipping name	BUTANE	PROPANE
Transport hazard class (es)	2.1	
Packing group	None	
Environmental hazards	None	
Special precautions for user	None	
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not Applicable	

Section 15 - Regulatory Information

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

Dangerous Substances (Conveyance of Scheduled Substances by Road) (Trade or Business) Regulations, 1980, (SI 235 of 1980)

Dangerous substances (Conveyance of Scheduled Substance by Road) (Trade or Business) Amendment Regulations 1986, (SI 268 of 1986)

Dangerous Substances (Storage of Liquefied Petroleum Gas) Regulations 1990

European Communities (Major Accident Hazards of Certain Industrial Activities) Regulations 1986 and Amendments

European Communities (Classification, Packaging, Labelling and Notification of Dangerous Preparations) Regulations 1994

EC 1272/2008 - Classification, labelling and packaging of substances and mixtures

Seveso Directive 96/82/EC: Listed

Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive environments (ATEX)

Chemical Safety Assessment: CSA has not been carried out

Section 16 - Other Information

CONCAWE Product Dossier "Liquefied Petroleum Gas"; 92/102 contains additional toxicological and ecological data. Available from CONCAWE, Madouplein 1, B-1030, Brussels, Belgium.

Irish Standard 3213, Code of Practice for the Storage of LPG Cylinders and Cartridges.

Irish Standard 3216, Code of Practice - Bulk Storage of Liquefied Petroleum Gas.

Irish Standard 820 "Non-Domestic Gas Installations"

Available from the National Standards Authority of Ireland, Ballymun Road, Glasnevin, Dublin 9

Guide to the Conveyance of Dangerous Substances by Road (published by the Department of Labour)

Health and Safety at Work Act 1989

Available from the Government Publications Office, Molesworth Street, Dublin 2.

Guide to the Code of Practice for the Storage of LPG Cylinders and Cartridges.

Flogas Customer Information Manual.

Flogas Installation Guidelines.

The Safe Installation of Propane Cylinders.

These as well as other literature and technical advice are available from Flogas, phone 041-9831041 or 021-4506688.

The information given is believed to represent good practices at the time of publication but no responsibility or liability is accepted for any loss or damage arising from the information. This product is supplied on the understanding that it will be used in the manner and for the purpose(s) specified in the Safety Data Sheet, the user having taken all precautions stipulated and complied with all Regulations, Standards and Codes of Practice. Failure to follow such directions may adversely affect any right that the user might have against the company. Before application other than as directed, advice must be obtained from Flogas.

No part of this publication may be copied or reproduced without the written permission of Flogas Ireland Ltd.