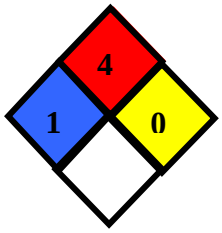
SAFETY DATA SHEET

BPCL KOCHI REFINERY



NFPA 704 (Sec 16)

LIQUEFIED PETROLEUM GAS

Section 1 – IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY / UNDERTAKING

Chemical Name	Liquefied Petroleum Gas (LPG)	CAS Number:	68476-85-7
Product name	Liquefied Petroleum Gas (LPG)	UN No.	1075
Chemical Formula	Mixture of C_3H_8 and C_4H_{10}	Synonyms	LPG, Gas, Burshane
Hazchem No.		Hazardous waste ID No.	
Product use	Domestic fuel, Motor fuel		
Manufacturer's name	Bharat Petroleum Corporation Limited		
Address	4&6, Currimbhoy Road, Ballard Estate Mumbai- 400 001, INDIA		
Contact information	Telephone No. : 091-22-24176354 Fax No. : 091-22-24166512/24182511 Emergency Coordination Centre Contact : BPCL Kochi Refinery, Ambalamugal,Kochi, Kerala **EMERGENCY CONTACT DETAILS** : BPCL – KOCHI REFINERY, Ambalamugal Dist. Ernakulam, Kerala, India 091-484-2722061 24*7 Emergency contact No : +91 9495001031		

Section 2 – Composition / Information on ingredients

Composition:	Propane 24 % v Propylene 11 % v Butane 65 % v
Hazardous Components:	Propane, Propylene, Butane,

Section 3 – Hazards Identification

Primary Entry Routes	Inhalation, skin

Acute Health Effects	Concentration in air greater than 10% causes dizziness in few minutes. 1% conc. gives the same symptoms in 10 mts. High concentration causes asphyxiation. Liquid on skin causes frostbite			
Chronic Effects	No data available			
Carcinogenicity	Not listed as carcinogenic			
NFPA hazard signals	Flammability	Health	Reactivity	Special
	4	1	0	
Other (Specify)				

Section 4 – First Aid Measures

Eyes:	Flush with water for 15 min. Get medical attention
Skin:	Frost bite can occur and appropriate treatment for it to be given. Remove the wetted clothes. Wash with warm water & soap.
Inhalation:	Remove to fresh air. Consult a physician if irritation persists
Ingestion:	

Section 5 – Fire fighting measures

Flash Point	Propane: -156°F (cc); butane: -76°F (cc	Auto ignition Temperature	426 °C
Flash Point Method	Abel	TDG Flammability Classification	
LEL	2.2 %	UEL	9.5 %
Combustible liquid		Explosive material	
Corrosive material		Flammable material	Flammable
Oxidiser		Pyrophoric material	
Organic peroxide		Explosion sensitivity to impact	
Explosion sensitivity to static electricity		Hazardous polymerisation	
Extinguishing Media	Foam, Dry Chemical Powder, CO2		
Fire or Explosion Hazards	Heat produces vapours and can cause violent rupture of Hazards: containers. Tanks can explode due to BLEVE effect. Being heavier than air vapours may travel long distance and flash back. Static electricity generation highly possible.		
Hazardous combustion Products	Carbon di oxide, carbon mono oxide,		
Fire-Fighting Instructions and procedures	Fires should not be extinguished until flow of LPG is not stopped. Shut off gas and allow the product to burn. Cool the surroundings with water spray. Fire fighters should wear self breathing apparatus while fighting fire		

Section 6 – Accidental Release Measures

Small Spills	Shut off leaks if safe to do so. Disperse vapours with water spray. Isolate area and take a gas test before entering. Warn everyone that the mixture is explosive.
Containment	Prevent spillage from entering drains or water sources
Clean-up	As the product vaporizes clean up not necessary.

Other (Specify)	

Section 7 – Handling and Storage

Handling Precautions	Do not use/store near heat/open flame. Avoid contact with liquid as frost bites can occur. Use gumboots, gloves while handling the product. Do not inhale. Stay upwind while handling the product. Tanks and dispensing equipments should be grounded to reduce static charge fires. It should be stored in closed containers away from heat & source of ignition. Avoid contact with skin and eyes. Wash thoroughly after handling
Storage Requirements	Do not use/store near heat/open flame/water/acids. Stenched with mercaptans for easy identification during leaks

Section 8 – Exposure Controls / Personal Protection

Engineering Controls	Provide proper ventilation for environment to be below TWA. Use explosion proof electrical fittings in classified areas
Gloves (Specify)	PVC gloves
Respiratory Protection (Specify)	Use respiratory protection if ventilation is improper
Eye (Specify)	Use face shield
Foot wear (Specify)	safety boots while handling
Protective clothing/ Equipment (Specify)	Contaminated clothing to be immediately removed
Other(Specify)	

Section 9 – Physical and Chemical properties

Physical State	Gas at atm. pressure but handled as liquid in compressed stage
Appearance	Colourless gas
Odour	mercaptan odour
Vapour Pressure	< 152 psi at 38 °C (RVP)
Specific Gravity (Specify at what temp)	0.55 gm / cc at 15 °C
Water Solubility (Specify at what temp)	Insoluble
Evaporation rate	
Boiling Point	> - 40 °C
Melting Point	
Vapour Density	1.5 (Air = 1)
pH	
Other(Specify)	Freezing Point : - 77 °C

Section 10 – Stability and Reactivity

Chemical Stability (If no, under what conditions)	Chemically stable.
Chemical Incompatibilities (If yes, which ones)	Incompatible with oxidizing agents.
Conditions to Avoid	Avoid high temperatures and ignition sources including static electricity
Hazardous Decomposition Products	Carbon di oxide, carbon mono oxide,

Section 11 – Toxicological Information

TLV – TWA as per ACIGH/NIOSH	LPG – 1000 ppm
STEL	
LD 50 (Specify species and route)	LD50 (Oral-Rat) Not listed
LC 50 (Specify species and route)	
Acute Inhalation Effects	Concentrations in air greater than 10%; cause dizziness in a few minutes, 1% concentrations give the same symptom in 10 min. High concentrations cause asphyxiation

Section 12 – Ecological Information

Prevent spillage from entering drains or water sources. After spills wash area with soap and water preventing runoff from entering drains. Can burn with lot of heat producing CO2 and CO.

Section 13 – Disposal Considerations

Disposal	Allow gas to burn under controlled conditions

Section 14 – Transport Information

Shipping Name	Liquefied Petroleum Gas
Special shipping information/ instructions	

Section 15 – Regulatory Information

Non – Toxic / Highly Flammable Substance

Section 16 – Other Information

Avoid contact with oxidisers. Olefinic impurities may lead to narcotic effect or it may act as a simple asphyxiant. A very dangerous hazard when exposed to heat or flame. If fire is big, keep surrounding areas cool by spraying water. LPG is stenched with mercaptan for easy detection during leaks.

Prepared by BPCL Kochi Refinery

Disclaimer: Bharat Petroleum Corporation Limited, believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO

WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF

MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE

CONCERNING THE INFORMATION PROVIDED HEREIN.

The information provided herein relates only to the specific product designated and may not be applicable where such product is used in combination with any other materials or in any process.

Company will not take any warrantee if this product is used in a manner inconsistent with its labelling. Further, since the conditions and methods of use are beyond the control of BPCL, expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information

Notes:

1. CAS No. – Chemical Abstract Service Number
2. UN No. – United Nations Number
3. TDG flammability – Transport of Dangerous Goods Flammability classification by United Nations.