



HINDUSTAN PETROLEUM CORPORATION LIMITED
MUMBAI REFINERY
MATERIAL SAFETY DATA SHEET COMPENDIUM

Document Title: MSDS Compendium, Mumbai Refinery

Edition: 1

6.1 MSDS of LPG

Section 1: Chemical Product and Company Identification

1.1 Chemical Product Identifiers:

1.1.1 Chemical Name	Liquefied Petroleum Gas
1.1.1.1 Trade Name	LPG
1.1.2 CAS No.	68476-85-7

1.2 Relevant identified uses of the chemical product and uses advised against

Relevant identified uses	Fuels Propellant Welding
Uses advised against	No data available

1.3 Details of the supplier of the safety data sheet

1.3.1 Company Name	Hindustan Petroleum Corporation Limited
1.3.2 Address	HPCL Mumbai Refinery, B D Patil Marg Chembur, Mumbai-400074
1.3.3 Contact No.	022-25076605
1.3.4 Contact person in emergency	Fire & Safety Shift Supervisor

1.4 Emergency Telephone No.:	022-25076606
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Section 2: Hazards Identification

2.1 Classification of the chemical product:

Hazard class	Category	Hazard class & category	Hazard statement
Extremely flammable gas	1	Flam. Liq. 2	H220
Gases under pressure: Liquefied gas		Press. Gas (Liq.)	H280
Germ cell mutagenicity	1B	Muta. 1B	H340
Carcinogenicity	1B	Carc. 1B	H350

2.2 Label Elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

2.2.1 GHS pictograms:



GHS02



GHS08

2.2.2 Signal Word(s): Danger

2.2.3 Hazard Statements(s):



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H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H340	May cause genetic defects.
H350	May cause cancer

2.2.4 Precautionary Statement(s):

Precautionary statements - prevention

P201	Obtain special instructions before use
P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking
P280	Wear eye protection, face protection, protective clothing, protective gloves

Precautionary statements – response

P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P308+P313	IF exposed or concerned: Get medical advice
P381	Eliminate all ignition sources if safe to do so
P403	Store in a well-ventilated place

2.3 Other hazards except those mentioned in DGCPL Rules, 201:

This substance is not considered to be very persistent nor very bioaccumulating (vPvB). This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

Section 3: Composition/Information on Ingredients

3.1 Name of Product: Liquefied Petroleum Gas

3.1.1 Systematic Chemical Name or Trivial Name: LPG

3.1.2 CAS No.: 68476-85-7

3.1.3 Other Identifiers

Molar mass 44.09 g/mol

Section 4: First-Aid Measures

4.1 Description of first aid measures



4.1.1 Inhalation

Provide fresh air. Put victim at rest, cover with a blanket and keep warm. Keep at rest. In case of shortness of breath, give oxygen. Get medical advice/attention



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4.1.2 Skin Contact

Treat frozen body-parts appropriately. In case of frostbite, wash with plenty of water; do not remove clothing. Call a physician immediately

4.1.3 Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

4.1.4 Ingestion

No hazards which require special first aid measures.

4.2 Most important symptoms and anticipated effects both acute and delayed
headache, nausea, dizziness, frostbite, vomiting and diarrhea.

4.3 Advice for immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: Firefighting Measures

5.1 Extinguishing Media



- **Suitable extinguishing media**
Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder
- **Unsuitable extinguishing media**
None known

5.2 Special hazards arising from the chemical product:

Evacuate personnel to a safe area. Heating causes rise in pressure with risk of bursting. Use water spray or fog for cooling exposed containers. Vapours may form explosive mixture with air. Vapours are heavier than air and may spread along floors. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours. Do not allow run-off from fire-fighting to enter drains or water courses. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

5.3 Hazardous Combustion Products:

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂)

5.4 Specific Extinguishing Methods

For this substance/mixture no limitations of extinguishing agents are given

5.4.1 Advice for Fire-Fighters

Special protective equipment for firefighters. In case of fire: Wear self-contained breathing apparatus. Use water spray or fog for cooling exposed containers. Evacuate personnel to a safe area. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

5.4.2 Special protective equipment for fire-fighters: None



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Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:



Ensure procedures and training for emergency decontamination and disposal are in place.

6.2 Environmental precautions:

Do not allow to enter into surface water or drains.

6.3 Methods and materials for containment and cleaning up:

Advice on how to contain a spill

Remove all sources of ignition. Use only explosion-proof equipment. Do not smoke. Provide for sufficient ventilation, particularly in closed rooms. Stop leak if safe to do so.

6.4 Reference to other sections:

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

Section 7: Handling and Storage

7.1 Precautions for Safe Handling:

Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking



Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

Measures to protect the environment

Avoid release to the environment.

7.2 Conditions for Safe Storage, including requirement of hazardous area classification and any incompatibilities:

Store in a dry, cool and well-ventilated area.

Incompatible substances or mixtures

Avoid heat, sparks, open flames and other ignition sources. Incompatible with oxidizing agents (e.g. hypochlorite), acids, (e.g. Nitric acid), heat and ignition sources.

Ventilation requirements

Use local and general ventilation.



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Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 50 °C

Section 8: Exposure Controls and Personal Protection

8.1 Control Parameters

National Limit Values: Contains no substances with occupational exposure limit values.

8.2 Exposure Controls

8.2.1 Personal Protective Equipment:

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

8.2.2 Suggestions for protection of eye, skin and body and respiratory system:

- **Eye/face protection**



Use safety goggle with side protection.

- **Skin protection**



a. Hand protection

Wear insulated or leather gloves.

b. Other protection measures

Wear non-static long sleeved shirts and trousers, or coveralls.

- **Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment. Use self-contained respiratory apparatus for rescue and maintenance work in storage vessels.



8.2.3 Environmental Exposure Controls:

Keep away from drains, surface and ground water.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state

Gas



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Colour	colourless
Odour	Normally an odourless
Melting point/freezing point	-187.6 to -138.3 °C
Boiling point or initial boiling point and boiling range	-161.48 to -0.5 °C
Flammability	Extremely flammable
Lower and upper explosion limit	2.1 vol% (LEL) – 9.6 vol% (UEL)
Flash point	-104 to -60 °C
Auto-ignition temperature	287 - 537 °C
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
<u>Solubility(ies)</u>	
Water solubility	24.4 – 60.4 mg/l @20°C
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	1.09 – 2.8
Vapour pressure	520-1050 kPa at 40 °C
<u>Density and/or relative density</u>	
Specific Gravity	0.51 to 0.58 (water = 1)
Relative vapour density	1.55 to 2.01 (Air = 1)
Particle characteristics	not relevant (liquid)
<u>Other safety parameters</u>	
Oxidising properties	None
% Volatiles	100%

9.2 Other Information:

Information with regard to physical hazard classes:

There is no additional information.

Section 10: Stability and Reactivity

10.1 Reactivity

Flammable gases.

10.2 Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3 Possibility of hazardous reactions

In use may form flammable/explosive vapour-air mixture

10.4 Conditions to avoid



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Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Temperatures above 38 °C. Exposure to sunlight.

10.5 Incompatible materials

Incompatible with oxidizing agents (e.g. hypochlorite), acids, (e.g. Nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also, incompatible (potentially violently) with oxygen, halogens and metal halides.

10.6 Hazardous decomposition products

Burning produces noxious and toxic fumes. Possible decomposition products are: Carbon oxides.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects:

11.1.1 Acute Toxicity:

Exposure route	Endpoint	Value	Species
Inhalation	LC50	658 mg/l/4h	rat

11.1.2 Skin Corrosion/ Irritation: Not classified

11.1.3 Serious Eye Damage/ Eye Irritation: Not classified

11.1.4 Respiratory or Skin Sensitization: Not classified

11.1.5 Mutagenicity: May cause genetic defects.

11.1.6 Carcinogenicity: May cause cancer.

11.1.7 Reproductive Toxicity: Not classified

11.1.8 Specific target organ toxicity-single exposure: Not classified.

11.1.9 Specific target organ toxicity - repeated exposure: Not classified

11.1.10 Aspiration Hazard: Not classified

11.1.11 Additional Information: Symptoms related to the physical, chemical and toxicological characteristics. Reference to other sections: 4.2.

Section 12: Ecological Information

12.1 Toxicity: No information provided.

12.2 Persistence and Degradability: Inherently biodegradable.

12.3 Bio Accumulative Potential: The substance fulfils the very bio accumulative criterion.

n-octanol/water (log KOW)	1.09 – 2.8
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12.4 Mobility in Soil: Immiscible.

12.5 Other adverse effects: Data are not available



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Section 13: Disposal considerations

13.1 Waste Treatment Method: This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.



- **Sewage disposal-relevant information**

Do not burn, or use a cutting torch on the empty drum. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

13.1.1 Contaminated Packaging: Dispose of spent product packaging responsibly and lawfully with due consideration for health, safety and the environment.

13.1.2 Local Regulations (if any) on Disposal: Waste material must be disposed of in accordance with the **Hazardous Waste Management Rules-2016**

Section 14: Transport Information

14.1 UN Number: UN 1965

14.2 UN Proper Shipping Name: LPG

14.3 Transport Class(es): 2

14.3.1 Hazard Labels: 2

14.3.2 Symbols:



14.4 Packaging Group: Not applicable

14.5 Environmental Hazards: No information provided

14.6 Special Precautions for User: No data available

Section 15: Regulatory Information

15.1 Safety, health and Environmental: Regulations/legislation specific for the substance or mixture relevant provisions of **Non - Toxic/Flammable Substance** are applicable

Section 16: Other Information

The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders, and AS/NZS 1596 The storage and handling of LP Gas.

16.1 Date of Issue: March 2023

16.2 Necessity of Specific Training: Working and handling personnel to be trained on following aspects

- Chemical hazard awareness
- Safety control measures including PPE



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- iii. Housekeeping, hygiene and chemical storage
- iv. Responding to any kind of emergency

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