

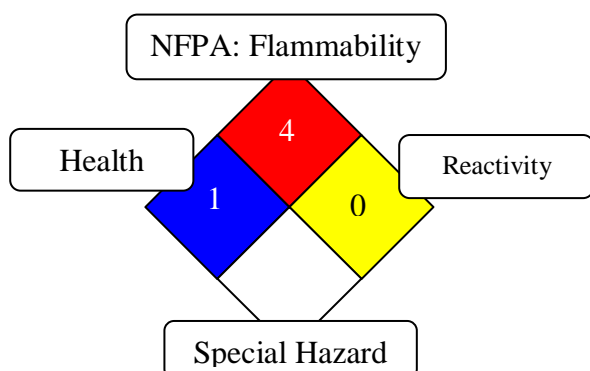


JOPETROL

Jordan Petroleum Refinery Company LTD

Material Safety Data Sheet: Liquefied Petroleum Gas

JPRC PR-01



HMIS III:

Flammability	4
Health	1
Reactivity	0

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Liquefied Petroleum Gas (LPG).
MSDS Number : JPRC PR-01.
Product Use Description : Fuel Gas for heating and as a heat source.
Synonym : LPG, Propane-Butane Mixture.
Company : Jordan Petroleum Refinery
Amman – Jordan.
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SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS:

The material is a mixture of simple hydrocarbons having 3 or 4 carbon atoms, mainly propane, propylene, iso-butane and n-butane.

In addition, composition contains ethyl mercaptan as stanching agent.

Component Information :

Components	CAS No.	Proportion (%)
Propane	74-98-6	25-30%
Butane	106-97-8	70-75%
Ethyl mercaptan	78-08-1	0-1%

SECTION 3. HAZARDS IDENTIFICATION:

Emergency Overview :

Regulatory status : This material is considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

Signal Word : DANGER

Hazard Summary : High concentrations may exclude oxygen and cause dizziness and suffocation.
Contact with liquid or cold vapor may cause frostbite or freeze burn.
Simple Asphyxiate. Reduces oxygen available for breathing.
Exposure to concentrations Above 10% of the LEL may cause a general central nervous system (CNS) Depression typical of anesthetic gases or intoxicants.
Aliphatic hydrocarbon gases may build up in confined spaces and may cause dizziness, light-headedness, Headache, nausea and loss of coordination.
Continued inhalation may result in Narcosis, unconsciousness, and possibly lead to death.

Potential Health Effects :

Acute – swallowed : Not a likely source of exposure.

Acute – Eye : Risk of serious damage to eyes, evaporating liquid can cause cold burns.

Acute – Skin : May cause cold contact burns.

- Acute – Inhaled : Inhalation may cause irritation to the respiratory system. Prolonged exposure to vapors may cause somnolence and narcosis.
- Chronic : Prolonged exposure to vapors may cause somnolence and narcosis.

SECTION 4. FIRST AID MEASURES

- Eye : Flood eyes with plenty of water for 20 minutes, holding eyelids open. If irritation occurs, seek medical advice.
- Skin : For minor burns only, remove from contaminated area and remove any tight clothing, which might impair circulation. Re-warm using like warm water – not hotter than blood temperature (37 °C). Do not re-warm rapidly. Use cold tap water if Luke warm water is not available. Cover area with loose, dry, sterile dressing and seek medical advice. If a significant area of the body is affected, do not attempt to treat patient. Transport patient to hospital at once and seek urgent medical attention.
- Inhalation : Remove affected person from contaminated area and seek medical advice. If not breathing apply artificial respiration and seek urgent medical advice.
- Ingestion : Not applicable.
- First Aid Facilities : Eye wash fountains and safety showers should be available for emergency use.
- Advise to Doctor : Treat Symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Form : Liquefied gas
- Flash Point : -104 ° C
- Lower explosive limit : 2.2%
- Upper explosive limit : 9.8%

- Engineering Controls : Provide sufficient ventilation to keep air borne levels below the exposure limit. Where vapors or mists are generated, particularly in enclosed areas and natural ventilation is inadequate, a flameproof exhaust ventilation system is required
- Other Information : NOHSC exposure standard time weighted average (TWA) 1.800 mg/m³, 1.000 ppm (LPG).
LPG is a simple asphyxiate which when present in an atmosphere in high concentration lead to reduction of oxygen concentration by displacement or dilution.
- Fire / Explosion Hazards : Highly flammable gas. Keep tanks, pipelines, fire-exposed surfaces etc... cool with water spray.
Shut off any leak if safe to do so and remove sources of re-ignition. Do not extinguish burning gas until gas supply has been cut off.
After the gas supply has been isolated as assessment of the circumstances will be necessary to determine whether to extinguish the fire, at the risk of subsequent re-ignition and explosion or to allow the fire to burn out with the risk of heat radiation and fire spreading to other materials.
- Hazardous Reaction : Distinct gas odor.
- HazChem Code : 2WE.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- In case of spill : Shut off flow of gas if possible.
Eliminate all sources of ignition, including internal combustion engines.
De-energize electrical equipment and systems.
Isolate area and keep people away.
Stay upwind and warm of possible downwind explosion hazard.
Use supplied-air respirator and protective clothing as discussed in this MSDS.
Water spray may be effective in dispersing vapors.
- Waste Disposal : It is the responsibility of the use of products to determine, at the time of disposal, whether the product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.
- Remarks : Do not allow to enter drains or sewers. Can cause explosion.

SECTION 7. HANDLING AND STORAGE

- Handling : Take care to maintain clean working place.
The substance must not be present at workplaces in quantities above that required for work to be progressed.
Do not leave container open.
Use leak-proof equipment with exhaust for refilling or transfer.
Do not transport with /using compresses air.
Avoid splashing. Avoid free-fall or minimize height of fall.
Fill only into labeled container.
Use solvent resistant utensils.
Use an appropriate exterior vessel when transporting in fragile containers.
Caution free Peroxide (Auf Peroxid-Freiheit achten).
- Storage : Store in well ventilated place away from ignition sources, oxidizing agents, foodstuffs and clothing.
Keep containers closed when not in use.
Take precautions against static electricity discharges.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Precautionary measures :
- Skin protection : Protective clothing should be worn. Petroleum resistant gloves and boots recommended. Insulated gloves required if contact with liquid-cooled product or equipment is expected.
- Respiratory protection : Use atmosphere supplying respirator in confined spaces when H₂S concentrations exceed permissible limits.
- Eye protection : Avoid eye contact. The wearing of chemical safety goggles or face shield is recommended.
- Engineering measures : Local or general exhaust required in an enclosed area or when there is inadequate ventilation.

List	Component	Type	Value
ACGIH	LPG	TLV	100 ppm

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES.

Physical state	: Liquefied gas
Appearance & odor	: Colorless gas, liquid under pressure. unpleasant odor
Vapor Pressure	: Max 8 (ASTM D-1267) (Kg/cm ²)
Vapor density	: 1.7 (@15 °C)
Density	: >0.52 (kg/l at 15 °C)
Flash Point	: - 104 ° C
Lower explosive limit	: 2.2 (%v/v)
Upper explosive limit	: 9.8 (%v/v)
Water solubility	: Negligible
Percent Volatiles	: -122 F
Conductivity (Conductivity can be reduced By environmental factors such As a decrease in temperature)	: Hydrocarbon liquids without static dissipater additive may have conductivity below 1 Pico Siemens per meter (pS/m). The highest electro-static ignition risks are associated with" ultra-low conductivities" below 5 pS/m. See Section 7 for Sources of information on defining safe loading and handling procedures for low Conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Hazardous Polymerizations	: Do not occur
Product of Combustion	: Carbon monoxide, Carbon dioxide
Conditions to Avoid	: Heat, Strong Oxidizers

SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation	: Irritating to skin. Rapid release of gases which are liquids under pressure may cause frost burns of Exposed tissues (skin, eye) due to evaporative cooling
Eye irritation	: slight irritation

SECTION 12. ECOLOGICAL INFORMATION

- Bioaccumulation : Inherently biodegradable.
Accumulation in terrestrial organisms is unlikely
- Toxicity to fish : Not expected to be harmful to aquatic organisms.
- Additional ecological Information : Liquid release is only expected to cause localized, non-persistent environmental Damage, such as freezing.
Biodegradation of this product may occur in soil and Water.
Volatilization is expected to be the most important removal process in soil And water.
This product is expected to exist entirely in the vapor Phase in ambient Air.

SECTION 13. DISPOSAL CONSIDERATIONS

- Disposal : Dispose of container and unused contents in accordance with State and local requirements.

SECTION 14. TRANSPORT INFORMATION.

- Transport : Classified as dangerous goods (class 3) according to the Australian code for the transport of dangerous goods by road and rail.
- Proper Shipping Name : Liquefied Petroleum Gas
- EPG Number : 2.1.001
- IERG Number : 04
- Packaging method : 5.9.2RT2

SECTION 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive.

Other regulations may apply to this material .

Chemical Inventory Status

EINECS : All components listed or polymer exempt .

TSCA : All components listed .

SECTION 16. OTHER INFORMATION

Additional Information : This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organization responsible for advising on safety matters.

Disclaimer : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall JPRC be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if JPRC has been advised of the possibility of such damage.