# Safety Data Sheet

# Liquefied Petroleum Gas (LPG)

## SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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| **PRODUCT NAME** | Liquefied Petroleum Gas (LPG) |
| **BRAND NAME** | Phoenix Super LPG |
| **CAS NO.** | 68476-85-7 |
| **RECOMMENDED USE** | Fuel for cooking, heating and gas lighting.<br>Commercial and industrial applications include<br>- Refrigeration and air conditioning<br>- Clothes drying<br>- Metal cutting and soldering<br>Agricultural uses include:<br>- Heating for poultry<br>- Grain drying<br>- Pest control<br>Autogas (automotive fuel alternative, such as taxi and forklift) |
| **NAME OF MANUFACTURER** | Phoenix LPG Philippines, Incorporated |
| **CORPORATE ADDRESS** | Davao Head Office<br>Phoenix Petroleum Corporate Headquarters<br>Stella Hizon Reyes Road,<br>Lanang, Davao City 8000<br><br>Manila Office:<br>15th to 17th Floors, Udenna Tower,<br>Rizal Drive cor. 4th Avenue,<br>Bonifacio Global City, Taguig,<br>Metro Manila, Philippines 1634 |
| **TELEPHONE** | Customer Services: #78737<br>Manila Office Trunkline: (02) 8403-4013 |
| **WEBSITE** | www.phoenixfuels.ph |

## SECTION 2: HAZARDS IDENTIFICATION

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| **SIGNAL WORD** | DANGER |
| **HAZARD OVERVIEW** | LPG (Liquefied Petroleum Gas) is subject to the Philippine Dangerous Goods Regulations |
| **SIGNAL WORD** | DANGER |
| **HAZARDS CLASSIFICATION** | PHYSICAL HAZARDS<br>- Flammable gases: Category 1<br>- Gases under pressure: Liquefied gas<br><br>HEALTH HAZARDS<br>- Acute toxicity, Oral: Category 5<br>- Acute toxicity, Dermal: Category 5<br>- Acute toxicity, Inhalation: Category 5<br>- Skin corrosion/ irritation: Category 2<br>- Serious eye damage/ irritation: Category 2<br>- Germ cell mutagenicity: Category 1B<br>- Aspiration hazard: Category 2<br><br>ENVIRONMENTAL HAZARDS<br>Not classified as an Environmental Hazard |

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| **HAZARD PICTOGRAMS** |  | |
| **HAZARD STATEMENTS** | H220 Extremely flammable gas.<br>H280 Contains gas under pressure; may explode if heated.<br>H303 May be harmful if swallowed<br>H313 Maybe harmful in contact with skin<br>H333 May be harmful if inhaled<br>H316 Causes mild skin irritation<br>H320 Causes eye irritation<br>H340 May cause genetic defects<br>H305 May be harmful if swallowed and enters airways | |
| **PREVENTION** | P210 Keep away from heat, sparks, open flames, hot surfaces and other ignition sources. No smoking.<br>P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.<br>P280 Wear protective gloves, protective clothing, eye protection, face protection, hearing protection (as required). | |
| **RESPONSE** | P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.<br>P381 In case of leakage, eliminate all ignition sources.<br>P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. | |
| **STORAGE** | P403 + P203 Store in a well-ventilated space. Keep container tightly closed. Protect from sunlight. | |
| **DISPOSAL** | P501 Dispose of contents/ container in accordance with local regulations. | |
| **OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION** | This product has anesthetic effects. | |
| | Acute Toxicity: | Symptoms include dizziness, headache, excitation or drowsiness, nausea, vomiting, moderate pulse, etc. In severe cases, a sudden fall, urinary incontinence, loss of consciousness, or even respiratory failure may occur. May cause skin cold injury. |
| | Chronic Effects: | Long-term exposure to low levels may cause headache, dizziness, insomnia, fatigue, emotional instability, vegetative nerve functional disturbance, etc. |
| | LPG is also classified as a carcinogen and mutagen if it contains more than 0.1% Butadiene. | |

## SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

**The exact composition is unknown or varies significantly from batch to batch.**

| Chemical Name | CAS-No | Concentration (%) |
|---|---|---|
| Propane | 74-98-6 | 30-50% by volume |
| Butane | 106-97-8 | 50-70% by volume |
| Propylene | 115-07-1 | 1-2% by volume |
| Butylene | 25167-67-3 | 1-2% by volume |
| Ethyl Mercaptan | 75-08-1 | up to 10 ppm |

## SECTION 4: FIRST AID MEASURES

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| **IF INHALED** | Simple asphyxiant and may cause dizziness and drowsiness. Move the patient to fresh air. Maintain an open airway. If breathing is difficult or has stopped, provide respiratory support. Call a medical doctor. |
| **IN CASE OF SKIN CONTACT** | May cause frostbites/ cold burns. Remove contaminated clothing. Wash off with running water. Get medical attention. |
| **IN CASE OF EYE CONTACT** | Flush eyes with tepid water or sterile saline solution for at least 15 minutes. Remove contact lenses. Keep eye wide open while rinsing. Protect unharmed eye.<br>If eye irritation persists, consult a specialist. |
| **IF SWALLOWED** | Ingestion is highly unlikely. May cause cold burns. Keep the respiratory tract clear. Never give anything by mouth to an unconscious person. Seek medical advice. |
| **MOST IMPORTANT SYMPTOMS/ EFFECTS, ACUTE AND DELAYED** | May cause asphyxiation in high concentrations. Direct contact with the liquefied material or escaping gas may cause frostbites. |
| **INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY** | Move out of the dangerous area. Do not leave the victim unattended. Show this safety data sheet to the doctor in attendance. |

## SECTION 5: FIREFIGHTING MEASURES

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| **SUITABLE EXTINGUISHING MEDIA** | Water spray, Dry chemical, Carbon dioxide (CO2), Foam, |
| **SPECIFIC EXTINGUISHING METHODS** | Stop or reduce the flow of gas if safe to do so, such as closing of the tank valve. Use a water spray to cool fully closed containers. |
| **UNSUITABLE EXTINGUISHING MEDIA** | High volume water jet. |
| **SPECIFIC HAZARDS ARISING FROM THE CHEMICAL (E.G. NATURE OF ANY HAZARDOUS COMBUSTION PRODUCTS)** | This product is extremely flammable. May ignite or explode if exposed to open flame, sparks, heat source, or static electricity. Combustion products may include toxic gas or smoke including carbon monoxide and carbon dioxide. |
| **SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS** | Wear full protective clothing and self-contained breathing apparatus for firefighting if necessary. |
| **PRECAUTIONS FOR FIREFIGHTERS** | Vapors are heavier than air and may travel long distances along the ground or dikes. Fire temperatures may cause the gas tanks to rupture or the activation of the relief valve. Do not extinguish flame if the resulting escape of gas poses greater risk. Do not approach cylinders or containers suspected of being hot. |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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| **PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES** | In case of product leak, evacuate personnel to safe areas. Use PPE as detailed in Section 8.<br>Remove all sources of ignition.<br>Ventilate area. Beware of vapors accumulating to form explosive concentrations. |

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| | Vapours can accumulate in low areas. Cover drains/ sewers.<br>Use water spray to disperse gas.<br>Inform manufacturer or supplier. |
| **ENVIRONMENTAL PRECAUTIONS** | Prevent further leakage or spillage if safe to do so.<br>Prevent product from entering drains. If the product contaminates rivers, lakes or drains inform the authorities |
| **METHODS OF CLEANING UP** | Stop the flow of material if safe to do so. If leak cannot be stopped, allow to discharge until product has evaporated.<br>Keep area evacuated and free of ignition sources. |

## SECTION 7: HANDLING AND STORAGE

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| **PRECAUTIONS FOR SAFE HANDLING** | Avoid exposure - obtain special instructions before use. For personal protection see section 8.<br>Do not breathe vapors/ dust.<br>Provide sufficient air exchange and/or exhaust in work rooms.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Cylinder inspection date must be checked before use. |
| **CONDITIONS FOR SAFE STORAGE** | Prevent unauthorized access.<br>Cylinders should be stored upright with measures to prevent from falling.<br>Do not store near incompatible substances (compressed air, oxygen, oxidizing agents, halogens).<br>Store in a dry well ventilated area with firm level floor. |
| **ADVICE ON PROTECTION AGAINST FIRE AND EXPLOSION** | Keep away from sources of heat and ignition.<br>Storage building made of non-combustible construction.<br>Use non-sparking machinery, tools/ equipment.<br>Take precautionary measures against static discharges.<br>Provide adequate fire-fighting equipment. |

## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Exposure Standards

| Ingredient | CAS No | Reference | Exposure Limit | ACGIH BEI |
|---|---|---|---|---|
| LPG | 68476-85-7 | OSHS TLV | 1000 ppm (1800 mg/m3) | Not available |
| Propane | 74-98-6 | OSHA PEL | TWA 1000 ppm (1800 mg/m3) | Not available |
| Butane | 106-97-8 | NIOSH REL | TWA 800 ppm (1900 mg/m3) | Not available |
| Propylene | 115-07-1 | ACGIH TLV | TWA 500 ppm | Not available |
| Butylene | 25167-67-3 | ACGIH TLV | TWA 250 ppm | Not available |
| Ethyl mercaptan | 75-08-1 | OSHA PEL | C 10 ppm (25 mg/m3) | Not available |

### Control & protection

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| **ENGINEERING CONTROLS** | Avoid inhalation.<br>Use in well ventilated areas. In poorly ventilated areas where flammable vapors may accumulate, mechanical explosion proof extraction ventilation is recommended. Maintain vapor levels below the recommended exposure limits.<br><br>Hand wash basin, eyewash station/ safety showers should be available at the worksite. |
| **PPE** | Choose protection according to the amount and concentration of the dangerous substance at the work place. |
| | Eye/ Face: Splash-proof safety goggles or face shield.<br>Hand: Use cold-impervious, insulating gloves where contact with liquid may occur to prevent frostbite and cold burns.<br>Body: Wear coveralls. Anti-static.<br>Foot: Wear protective footwear.<br>Respiratory: Where an inhalation risk exists, wear a Self-Contained Breathing Apparatus or Airline Respirator |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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| **PHYSICAL STATE** | Liquefied gas |
| **COLOR** | Colorless |
| **ODOR** | Special foul smell from mercaptan stench |
| **ODOR THRESHOLD** | No data available |
| **MELTING POINT/FREEZING POINT (°C)** | -188°C Propane |
| **BOILING POINT (°C)** | -42°C Propane<br>-0.5°C Butane |
| **FLAMMABILITY** | Extremely Flammable Gas |
| **UPPER EXPLOSION LIMIT** | 9.5% Propane, 8.5% Butane |
| **LOWER EXPLOSION LIMIT** | 2.1% Propane, 1.9% Butane |
| **FLASH POINT (°C)** | -104°C to -74°C |
| **AUTO-IGNITION TEMPERATURE** | 426°C to 537°C |
| **DECOMPOSITION TEMPERATURE** | No data available |
| **PH** | No data available |
| **VISCOSITY, KINEMATIC** | No data available |
| **VISCOSITY, DYNAMIC** | No data available |
| **WATER SOLUBILITY** | LPG is slightly soluble in water. |
| **SOLUBILITY IN OTHER SOLVENTS** | No data available |
| **PARTITION COEFFICIENT: N-OCTANOL/WATER** | No data available |
| **VAPOR PRESSURE** | 890-1430kPa (37.8 °C) |

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| **RELATIVE VAPOR DENSITY** | 1.5 to 2.00 |
| **RELATIVE DENSITY (WATER=1)** | 0.51 |
| **DENSITY** | 0.51 to 0.58 g/cm$^3$ (15 °C) |
| **EVAPORATION RATE** | No data available |
| **HEAT OF COMBUSTION (KJ/MOL)** | No data available |

## SECTION 10: STABILITY AND REACTIVITY

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| **REACTIVITY** | Hazardous polymerization does not occur. |
| **CHEMICAL STABILITY** | Stable under normal room temperature and storage conditions. |
| **POSSIBILITY OF HAZARDOUS REACTIONS** | LPG can react with other chemicals, especially oxidizing agents, to form explosive compounds. |
| **CONDITIONS TO AVOID** | Excessive heat, open flame, ignition sources.<br>Conditions that may hasten container corrosion. |
| **INCOMPATIBLE MATERIALS** | Strong oxidizing agents, strong acids, strong alkali, halogens.<br>May degrade natural rubber flexible hoses. |
| **HAZARDOUS DECOMPOSITION PRODUCTS** | Fumes, smoke, carbon monoxide |

## SECTION 11: TOXICOLOGICAL INFORMATION

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| **ACUTE TOXICITY** | No known toxicological effects from this product. Information available for the ingredients: | |
| | BUTANE | Inhalation LC50 (rat): 658000 mg/m3/4H<br>Inhalation LC50 (mice): 680 mg/l/2h |
| | PROPANE | An asphyxiant gas |
| | PROPYLENE | An asphyxiant gas |
| | BUTENE | An asphyxiant gas |
| | ETHYL MERCAPTAN | Inhalation LC50 (mice): 2770 pppm/4 hours<br>Oral LD50 (rat): 682 mg/kg |
| **SKIN CORROSION/ IRRITATION** | Contact with the material or escaping gas may result in frostbite injury. | |
| **EYE DAMAGE/ IRRITATION** | Contact with the material or escaping gas may result in frostbite injury. | |
| **SENSITIZATION (SKIN OR RESPIRATORY)** | Not classified as causing respiratory or skin sensitization. | |
| **GERM CELL MUTAGENICITY** | No data available. | |
| **CARCINOGENECITY** | No data available. | |
| **REPRODUCTIVE TOXICITY** | No data available. | |
| **STOT-SINGLE** | May cause drowsiness or dizziness. | |
| **STOT-REPEATED** | Not classified as causing organ damage from repeated exposure.<br>Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting | |

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| **ASPIRATION HAZARD** | Not classified as causing aspiration. |

## SECTION 12: ECOLOGICAL INFORMATION

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| **ECOLOGICAL TOXICITY** | Not expected to be harmful to flora, fauna or soil organisms. |
| **PERSISITENCE AND DEGRADABILITY** | No information available. |
| **POTENTIAL BIOACCUMULATION** | This product is not expected to bioaccumulate. |
| **MOBILITY IN SOIL** | Spillages are unlikely to penetrate the soil. The product is likely to volatilize rapidly into the air. |
| **OTHER ADVERSE EFFECTS** | No information available. |

## SECTION 13: DISPOSAL INFORMATION

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| **DISPOSAL OF THE CHEMICAL** | When possible, arrange for the chemical to be recycled. If recycling is not possible, incineration is recommended.<br>This product should not be directly discharged to the environment. |
| **CONTAMINATED PACKAGING** | Cylinders should be returned to the manufacturer for disposal of contents. |
| **DISPOSAL RECOMMENDATIONS** | Dispose of in accordance with relevant local or national regulations. |

## SECTION 14: TRANSPORT INFORMATION

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| **UN NUMBER** | 1075 |
| **PROPER SHIPPING NAME** | LIQUEFIED PETROLEUM GASES |
| **HAZARD GROUP** | 2.1 |
| **UN MODEL PICTOGRAM** |  |
| **PACKING GROUP** | Not assigned by regulation |
| **ENVIRONMENTAL HAZARDS** | Not a marine pollutant |
| **SPECIAL PRECAUTIONS** | HAZCHEM CODE 2YE<br>Ensure transport equipment and the driver are compliant to legal requirements.<br>Ensure cylinder stowage is separate from the driver cabin and that outlet of relief device is not obstructed. |

## SECTION 15: REGULATORY INFORMATION

**Safety, health, and environmental regulations specific for the hazardous chemical**

OSHS Occupational Safety and Health Standards (As Amended 1989)

**The components of this product are reported in the following inventories:**

PHILIPPINES: PICCS (Philippine Inventory of Chemicals And Chemical Substances
All components are listed on the PICCS.

## SECTION 16: OTHER INFORMATION

**Document Description**

The information contained herein is based on our current knowledge and is presented in good faith and believed to be accurate. The information is to be studied carefully upon consultation of appropriate expertise, as necessary. No warranty, express or implied, is given as to the quality, accuracy, reliability, applicability or completeness of the contents of this SDS. The information presented here pertains only to the product as shipped. It is your responsibility to ensure that any activities relating to the product comply with all federal, state or local laws. Any hazards associated with any product regulatory requirements are subject to change and may differ between various locations. Except to the extent required by law, re-publication or retransmission of this SDS, in whole or in part, is strictly prohibited.

**Full text of other abbreviations**

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| EC50 | Effective Concentration 50% |
| BCF | Bioconcentration Factor |
| CAS No | Chemical Abstracts Service Registry Number |
| IARC | International Agency for Research on Cancer |
| ACGIH | American Conference of Governmental Industrial Hygienists |
| IBC | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| IC50 | Half maximal inhibitory concentration |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| LC50 | Lethal Concentration to 50 % of a test population |
| LD50 | Lethal Dose to 50% of a test population (Median Lethal Dose) |
| OEL | Occupational Exposure Limit |
| PEL | Permissible Exposure Limit |
| REL | Recommended Exposure Limit |
| OSHA | Occupational Safety and Health Administration |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| NIOSH | National Institute for Occupational Safety and Health |
| STEL | Short Term Exposure Limit |
| SDS | Safety Data Sheet |
| TDG | Transportation of Dangerous Goods |
| TWA | Time-Weighted Average |
| UN | United Nations |
| UNRTDG | United Nations Recommendations on the Transport of Dangerous Goods |
| PICCS | Philippines Inventory of Chemicals and Chemical Substances |

**Product Stewardship Advisory:**

PHOENIX LPG PHILIPPINES, INC. wishes to create awareness of all the hazards associated with the storage, handling and use of our products. Carefully studying the accompanying Safety Data Sheets and disseminating the information to all dependent and interested parties is an essential part of any Responsible Care programme.

**Revision History**

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| Jan 2025 | HSSE Department | This version.<br>Updates on Section 3 (Composition and Information on Ingredients) and Section 8 (Exposure Controls and Personal Protection). Rest of document also with minor updates. |
| Jan 2020 | HSSE Department | Review and update of Section 3 (Composition and Information on Ingredients) and Section 8 (Exposure Controls and personal Protection) |
| Nov 2017 | HSSE Department | First edition of the Super Phoenix LPG Safety Datasheet |