




Liquefied Petroleum Gas (LPG)

SECTION 1: IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

Product Name:	Phoenix Super LPG
Chemical Name:	Liquefied Petroleum Gas (LPG)
CAS NO.:	68476-85-7
Recommended Use:	Fuel for cooking, heating and gas lighting. Commercial and industrial applications include - Refrigeration and air conditioning - Clothes drying - Metal cutting and soldering Agricultural uses include: - Heating for poultry - Grain drying - Pest control Alternative fuel (Autogas) for gasoline and diesel engines (such as taxi and forklift)
Manufacturer/ Supplier Name:	Phoenix LPG Philippines Incorporated
Address:	Matab-ang, Dalipuga, Iligan City, Philippines
Telephone:	#78737
Website:	www.phoenixfuels.ph
Emergency Telephone Numbers:	160/161 (Bureau of Fire Protection) : 911 (Emergency Network Philippines)
Phoenix Command Center:	(0997) 224 8532 and (0930) 093 9527

SECTION 2: HAZARDS IDENTIFICATION

Classification of the hazardous chemical	Flammable gases (Category 1) Gases under pressure (Liquefied gas) Specific target organ toxicity- single exposure (Category 3 Central nervous system)
Hazard pictograms	  
Signal word:	DANGER
Hazard Statements:	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated. H336 may cause drowsiness or dizziness.
Prevention:	P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. P271 Use only outdoors or in a well-ventilated area.
Response:	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. P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Storage:	P381 Eliminate all ignition sources if safe to do so. P403 + P233 + P410 Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. P405 Store locked up.
Disposal:	P501 Dispose of contents/ container to an approved waste disposal plant.
Other hazards which do not result in classification	No information available.

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SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Substance/Mixture Hazardous Components: UVCB

Chemical Name	CAS-No	Concentration (%)
Butane	106-97-8	55 – 90%
Propane	74-98-6	30 – 45%
Ethane	74-84-0	5 – 10%
Ethyl Mercaptan (as Odorant)	75-08-1	10 ppm max

SECTION 4: FIRST AID MEASURES

If inhaled:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a medical doctor. Move to fresh air.
If inhaled:	Consult a medical doctor after significant exposure.
In case of eye contact:	Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed:	Keep respiratory tract clear. Do NOT give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a medical doctor.
General advice:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
Most important symptoms and effects, both acute and delayed	Simple asphyxiant and may cause dizziness and drowsiness.

SECTION 5: FIREFIGHTING MEASURES

Suitable extinguishing media:	Alcohol-resistant foam Dry chemical Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	High volume water jet
Special protective equipment for firefighters	Wear self-contained breathing apparatus for firefighting if necessary
Specific extinguishing methods:	For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapours can accumulate in low areas. Ensure adequate ventilation.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. If the product contaminates rivers, lakes or drains inform the authorities

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SECTION 7: HANDLING AND STORAGE

Advice on protection against fire and explosion	<p>Normal measures for preventive fire protection.</p> <p>Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.</p> <p>Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).</p> <p>Use only explosion-proof equipment</p>
Advice on safe handling:	<p>Take precautionary measures against static discharges. Do not breathe vapors/ dust.</p> <p>Avoid exposure - obtain special instructions before use. For personal protection see section 8.</p> <p>Smoking, eating and drinking should be prohibited in the application area.</p> <p>Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure.</p> <p>Dispose of rinse water in accordance with local and national regulations.</p>
Conditions for safe storage:	<p>Prevent unauthorized access.</p> <p>Keep container tightly closed in a dry and well-ventilated place. Observe label precautions.</p> <p>Electrical installations / working materials must comply with the technological safety standards.</p> <p>No smoking.</p>

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards

Components	CAS Number	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
LPG		TWA 8-hours	1000 ppm 1800 mg/m ³	OSHS TLV
Butane	106-97-8	TWA 8-hours	800 ppm 1,900 mg/m ³	ACGIH
Propane	74-98-6	TWA 8-hours	1,000 ppm	OSHA PEL
Ethyl Mercaptan	75-08-1	TWA 8-hours	0.5 ppm	OSHA PEL

Control & protection

Engineering Controls:	<p>Avoid inhalation.</p> <p>Use in well ventilated areas. In poorly ventilated areas where flammable vapors may accumulate, mechanical explosion proof extraction ventilation is recommended.</p> <p>Do not enter confined areas (example: tanks). Contact the supplier.</p>
Eye/face protection:	<p>Tightly fitting or splash-proof safety goggles or face shields.</p> <p>Eye wash bottle with pure water.</p>
Hand protection:	<p>Use cold-impervious, insulating gloves where contact with liquid may occur to prevent frostbite and cold burns.</p> <p>The suitability for a specific workplace should be discussed with the producers of the protective gloves.</p>
Skin and body protection:	<p>Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.</p> <p>When handling cylinders, wear protective footwear.</p>
Respiratory protection:	<p>Where an inhalation risk exists, wear a Self-Contained Breathing Apparatus or Airline Respirator</p>

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquefied gas
Color:	Colorless
Odor:	Mercaptan like
Odor Threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	-60 °C
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper explosion limit:	15 %(V)
Lower explosion limit:	5 %(V)
Vapor pressure:	3,800 - 8,300 hPa (37.8 °C)
Relative vapor density:	No data available
Relative density:	0.55
Density:	0.550 g/cm ³ (15 °C)
SOLUBILITY (IES)	
Water solubility:	No data available
Solubility in other solvents:	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, dynamic:	No data available
Viscosity, kinematic:	No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Hazardous polymerization does not occur.
Chemical stability:	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous re action known under conditions of normal use.
Conditions to avoid:	Heat, sparks, flame and build-up of static electricity
Incompatible materials:	Strong oxidizing agents
Hazardous decomposition products	Fumes, smoke, carbon monoxide

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological Information	Butane	Propane	Ethane
Acute oral toxicity	No data available	No data available	No data available
Acute inhalation toxicity	LC50 (Rat): 277374 ppm Exposure time: 4 h	LC50 (Rat): > 20 mg/l	No data available
Acute dermal toxicity	No data available		
Skin corrosion/ irritation	Non irritating. Contact with evaporating liquid or super-cold vessels or pipes may result in frost-bite with severe tissue injury.		
Serious eye damage/ irritation	Non irritating. Direct contact with evaporating liquid may result in severe cold burns with possible permanent tissue damage		
Respiratory sensitization	Not classified as causing respiratory irritation		
Skin sensitization	Not classified as causing skin irritation		
Germ cell mutagenicity - Assessment	In vivo tests did not show mutagenic effects	No data available	
Carcinogenicity - Assessment	Not classified as a carcinogen		
Reproductive toxicity -	Not classified as a reproductive toxin		

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Assessment		
STOT-Single Exposure Assessment	May cause drowsiness or dizziness.	No data available
STOT-Repeated Exposure Assessment	Not classified as causing organ effects from repeated exposure	
Statement on Aspiration Toxicity	No data available	

Further product information : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Not toxic to flora, fauna or soil organisms. Will not cause long term adverse effects in the environment and is not dangerous to the ozone layer.
Toxicity to fish:	LC50 (Fish): 49.9 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	LC50 (Daphnia magna (Water flea)): 14.22 mg/l Exposure time: 48 h
Toxicity to algae:	EC50 (Algae): 7.71 mg/l Exposure time: 96 h
Toxicity to fish (Chronic toxicity):	Remarks: No data available
Toxicity to microorganisms:	Toxicity to microorganisms

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 80 %

Butane

Toxicity to fish:	LC50 (Fish): 27.98 mg/l
Toxicity to daphnia and other aquatic invertebrates:	Exposure time: 96 h
Toxicity to algae:	LC50 (Daphnia (water flea)): 69.43 mg/l Exposure time: 48 h
Toxicity to fish (Chronic toxicity):	EC50 (Algae): 16.47 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	Exposure time: 96 h Remarks: No data available
Toxicity to microorganisms:	Remarks: No data available

Propane

Toxicity to fish:	LC50 (Fish): 49.9 mg/l
Toxicity to daphnia and other aquatic invertebrates:	Exposure time: 96 h
Toxicity to algae:	LC50 (Daphnia (water flea)): 14.22 mg/l Exposure time: 48 h
Toxicity to fish (Chronic toxicity):	EC50 (Green Algae): 7.71 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	Exposure time: 96 h Remarks: No data available
Toxicity to microorganisms:	Remarks: No data available

Ethane

Toxicity to fish:	LC50 (Fish): 91.42 mg/l
Toxicity to daphnia and other aquatic invertebrates:	Exposure time: 96 h
Toxicity to algae:	LC50 (Daphnia (water flea)): 16.33 mg/l Exposure time: 48 h
Toxicity to fish (Chronic toxicity):	EC50 (Green Algae): 8.57 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	Exposure time: 96 h Remarks: No data available

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Toxicity to microorganisms: Remarks: No data available

Persistence and Degradability

Butane – Biodegradability: No data available
Propane – Biodegradability: Readily biodegradable
Ethane – Biodegradability: Readily biodegradable

Unlikely to cause long term adverse effects in the environment.

Bioaccumulative Potential

	Butane	Propane	Ethane
Bioaccumulation	Bioconcentration factor (BCF): 33	No data available	Bioconcentration factor (BCF): 13
Partition coefficient: n-octanol/water	Pow: 2.89	Pow: 0.83	Pow: 2.36

This material is not expected to bioaccumulate.

Mobility in Soil

	Butane	Propane	Ethane
Mobility	Medium: Soil Remarks: Moderate to low mobility.	Medium: Soil Remarks: Moderate to low mobility.	Medium: Soil Remarks: Moderate to low mobility.

Spillages are unlikely to penetrate the soil. The product is likely to volatilize rapidly into the air.

Other adverse effects

No data available.

SECTION 13: DISPOSAL INFORMATION

Waste from residues:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on the empty drum.

SECTION 14: TRANSPORT INFORMATION

UN Number:	UN 1075
Proper shipping name:	PETROLEUM GASES, LIQUEFIED
Transport Hazard Class:	2.1
Packing Group:	Not assigned by regulation
Subsidiary Risks:	None allocated
Environmental hazards for:	No
Transport Purposes	
Hazchem Code:	2YE

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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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:

CH INV	On the inventory, or in compliance with the inventory
TSCA	On TSCA Inventory
DSL	All components of this product are on the Canadian DSL
AICS	On the inventory, or in compliance with the inventory.
NZIoC	On the inventory, or in compliance with the inventory.
ENCS	On the inventory, or in compliance with the inventory.
ISHL	On the inventory, or in compliance with the inventory.
KECI	On the inventory, or in compliance with the inventory.
PICCS	On the inventory, or in compliance with the inventory.
IECSC	On the inventory, or in compliance with the inventory.

SECTION 16: OTHER INFORMATION

Sources of key data used to compile the Safety Data Sheet

CONCAWE - The oil companies' European association for Environment, Health and Safety in refining and distribution

ECHA - European Chemicals Agency

GESTIS database on hazardous substances – DGUV

Full text of other abbreviations

(Q)SAR	(Quantitative) Structure Activity Relationship
ANTT	National Agency for Transport by Land of Brazil
ASTM	American Society for the Testing of Materials
bw	Body weight
CPR	Controlled Products Regulations
CCHC	Chemicals Classification and Hazard Communication
DIN	Standard of the German Institute for Standardization
ECx	Concentration associated with x% response
ELx	Loading rate associated with x% response
EmS	Emergency Schedule
ErCx	Concentration associated with x% growth rate response
ERG	Emergency Response Guide
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50	Half maximal inhibitory concentration
ICAO	International Civil Aviation Organization
ICOP	Industry Code of Practice on Chemicals Classification and Hazard Communication
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)
MARPOL	International Convention for the Prevention of Pollution from Ships
n.o.s.	Not Otherwise Specified
Nch	Chilean Norm
NITE	National Institute of Technology and Evaluation
NO(A)EC	No Observed (Adverse) Effect Concentration
NO(A)EL	No Observed (Adverse) Effect Level
NOELR	No Observable Effect Loading Rate

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NOM	Official Mexican Norm
NTP	National Toxicology Program
OECD	Organization for Economic Co-operation and Development
OPPTS	Office of Chemical Safety and Pollution Prevention
PBT	Persistent, Bioaccumulative and Toxic substance
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals
SADT	Self-Accelerating Decomposition Temperature
SDS	Safety Data Sheet
TDG	Transportation of Dangerous Goods
UN	United Nations
UNRTDG	United Nations Recommendations on the Transport of Dangerous Goods
vPvB	Very Persistent and Very Bioaccumulative
WHMIS	Workplace Hazardous Materials Information System
DSL	Domestic Substances List (Canada)
KECI	Korea Existing Chemicals Inventory
TSCA	Toxic Substances Control Act (United States)
AICS	Australian Inventory of Chemical Substances
IECSC	Inventory of Existing Chemical Substances in China
ENCS	Existing and New Chemical Substances (Japan)
ISHL	Industrial Safety and Health Law (Japan)
PICCS	Philippines Inventory of Chemicals and Chemical Substances
NZIoC	New Zealand Inventory of Chemicals
TCSI	Taiwan Chemical Substance Inventory
CMR	Carcinogen, Mutagen or Reproductive Toxicant
GLP	Good Laboratory Practice

Disclaimer

The information contained herein is based on our current knowledge and are 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.

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

Nov 2017	HSSE Department	First edition of the Super Phoenix LPG Safety Datasheet
Jan 2020	HSSE Department	Review and update of Section 3 (Composition and Information on Ingredients) and Section 8 (Exposure Controls and personal Protection)