

MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: PETROLEUM GAS LIQUIDS
SUPPLIER: MOBIL OIL CORP.
AMERICAS MARKETING AND REFINING
3225 GALLOWS RD.
FAIRFAX, VA 22037

APPROVAL DATE: 2/24/97

24 Hour Emergency (call collect): 609-737-4411
Product and MSDS Information: 800-662-4525 703-849-5700
CHEMTREC: 800-424-9300 202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: LIQUEFIED PETROLEUM GAS

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

| <u>Substance Name</u> | <u>Wt %</u> |
|---|-------------|
| LIQUIFIED PETROLEUM GAS (LPG) (68476-85-7) | 100 |

See Section 15 for European Label Information.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.**EFFECTS OF OVEREXPOSURE:** Can cause irritation or freeze burns if contact with liquid occurs. ****This product is an asphyxiant. Symptoms include respiratory irritation, dizziness, nausea and loss of consciousness. In addition, exposure to concentrations above 2% may cause a general central nervous system (CNS) depression typical of anesthetic gases or intoxicants. Continued exposure to odorized gas may reduce or eliminate ability to smell the odorant. People with impaired ability to detect odor due to colds, allergies, injuries, etc. must be especially cautious. Odor must not be used exclusively as a safety measure. Proper respiratory protection and fire/explosion precautions should be utilized when odor is first detected.**EMERGENCY RESPONSE DATA:** Colorless Liquefied Gas. Extremely flammable. Vapor accumulation could flash and/or explode if in contact with open flame. Pressurized containers may explode if exposed to open flames or high temperatures. DOT ERG No. -115.

4. FIRST AID MEASURES

EYE CONTACT:

Flush thoroughly with water. If irritation occurs, call a physician.

SKIN CONTACT:

If freeze burns occur, immerse involved area in warm water (between 100 and 110°F, not exceeding 112°F). Keep immersed for 30 to 60 min. Seek medical assistance.

INHALATION:

Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance and call a physician. If breathing has stopped, use a positive pressure resuscitator.

INGESTION:

Not expected to occur in normal industrial use.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA:

Carbon dioxide, foam, dry chemical and water fog.

SPECIAL FIRE FIGHTING PROCEDURES:

Evacuate area downwind of fire. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

SPECIAL PROTECTIVE EQUIPMENT:

For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Extremely flammable. Vapor accumulation could flash and/or explode if in contact with open flame. Pressurized containers may explode if exposed to open flames or high temperatures. Flash Point C (F): < -40 (-40) (ASTM D-93). Flammable limits - LEL: 2.0%, UEL: 9.5%.

NFPA HAZARD ID:

Health: 1, Flammability: 4, Reactivity: 0

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES:

Report spills as required to appropriate authorities. U.S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

Stop flow of gas. Evaporate to atmosphere and use water spray to dilute vapor cloud. Evacuate area. Eliminate all ignition sources. Remove leaking containers to detached area.

ENVIRONMENTAL PRECAUTIONS:

Prevent spills from entering storm sewers or drains and contact with soil.

PERSONAL PRECAUTIONS:

See Section 8.

7. HANDLING AND STORAGE

HANDLING:

Avoid all personal contact. Can cause irritation or freeze burns if contact with liquid occurs. Ethyl mercaptan is added to gas as an odorant to aid in the detection of the gas in case of leak or accidental discharge. Since ethyl mercaptan is reactive, a reduction in its effectiveness may occur during shipping and storage of the odorized gas. Therefore, odor must not be used exclusively as a safety measure. Handle gas with strict adherence to established safety procedures. Use in well ventilated area away from all ignition sources. Avoid sparking conditions. Ground and bond all transfer equipment.

STORAGE:

Store away from all ignition sources in a cool area equipped with an automatic sprinkling system. Outside or detached storage preferred. Storage containers should be grounded and bonded.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION:

Use in well ventilated area. Ventilation required and equipment must be explosion proof. Use away from all ignition sources.

RESPIRATORY PROTECTION:

Use supplied air breathing apparatus in oxygen deficient atmospheres, or if petroleum gas concentration exceeds 2%.

EYE PROTECTION:

No special requirements under ordinary conditions of use. Chemical type goggles and face shield should be worn if contact with liquid may occur.

SKIN PROTECTION:

No special requirements under ordinary conditions of use. Thermally protective gloves must be worn when handling liquid.

| Substance Name (CAS-No.) | Source | ---TWA--- | | -----STEL----- | | NOTE |
|---|--------|-----------|-------|----------------|-------|------|
| | | ppm | mg/m3 | ppm | mg/m3 | |
| LIQUIFIED PETROLEUM GAS (LPG) (68476-85-7) | MOBIL | 1000 | 1800 | | | |
| | OSHA | 1000 | 1800 | | | |
| | ACGIH | 1000 | 1800 | | | |

NOTE: Limits shown for guidance only. Follow applicable regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquified Gas
COLOR: Colorless
ODOR: None or Mercaptan
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C (F): > -89 (-128)
MELTING POINT C (F): > -187 (-305)
FLASH POINT C (F): < -40 (-40) (ASTM D-93)
FLAMMABILITY: NE
AUTO FLAMMABILITY: NE
OXIDIZING PROPERTIES: NE
VAPOR PRESSURE -mmHg 20 C: > 1000.0
VAPOR DENSITY: 1.6
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 0.5 - 0.6
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: NE
VISCOSITY AT 40 C, cSt: NA
VISCOSITY AT 100 C, cSt: NA
POUR POINT C (F): NA
FREEZING POINT C (F): NE
VOLATILE ORGANIC COMPOUND: NE

NA = NOT APPLICABLE NE = NOT ESTABLISHED D = DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Heat, sparks, flame and build up of static electricity.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

--ACUTE TOXICOLOGY--

ORAL TOXICITY (RATS): Not applicable
DERMAL TOXICITY (RABBITS): Not applicable
INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.
EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: 0 or greater but 6 or less) ---Based on testing of similar products and/or the components.
SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: 0.5 or less). ---Based on testing of similar products and/or the components.
OTHER ACUTE TOXICITY DATA: This product is an asphyxiant. Simple asphyxiants act by displacing oxygen in the lungs thereby diminishing the supply of oxygen available to the blood and tissues. Continued lack of oxygen may result in convulsions, loss of consciousness and death. Since exercise increases the tissue need for oxygen, symptoms will occur more quickly during exertion in an oxygen-deficient environment. Oxygen in enclosed spaces should be maintained at 21% by volume. In addition, exposure to this product may cause a general central nervous system (CNS) depression typical of anesthetic gases or intoxicants.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: Not established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION:

Disposal of unused product may be subject to RCRA regulations (40 CFR 261) due to the characteristic(s) / chemical(s) listed below. Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

FLASH: < -40 (-40) C(F)

14. TRANSPORT INFORMATION

USA DOT:

SHIPPING NAME: Petroleum Gases, Liquefied
 HAZARD CLASS & DIV: 2.1
 ID NUMBER: UN1075
 ERG NUMBER: 115
 PACKING GROUP: NA
 STCC: NE
 DANGEROUS WHEN WET: No
 POISON: No
 LABEL(s): Flammable Gas
 PLACARD(s): Flammabel Gas
 PRODUCT RQ: NA
 MARPOL III STATUS: NA

RID/ADR:

HAZARD CLASS: 2
 HAZARD SUB-CLASS: 4(b)
 LABEL: 3
 DANGER NUMBER: 23
 UN NUMBER: 1965
 SHIPPING NAME: Mixtures of Hydrocarbons (Liquefied gas)
 REMARKS: NA

IMO:

HAZARD CLASS & DIV: 2.1
 UN NUMBER: 1075
 PACKING GROUP: NA
 SHIPPING NAME: Petroleum Gases, Liquefied
 LABEL(s): Flammable Gas
 MARPOL III STATUS: NA

ICAO/IATA:

HAZARD CLASS & DIV: 2.1
 ID/UN NUMBER: 1075
 PACKING GROUP: NA
 SHIPPING NAME: Petroleum Gases, Liquefied
 SUBSIDIARY RISK: NA
 LABEL(s): Flammable Gas, Cargo Aircraft Only

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA

EU Labeling:

Symbol: F+ Extremely Flammable:

Risk Phrase (s): R12
 Extremely Flammable.

Safety Phase(s); S9-16-33
 Keep container in a well-ventilated place. Keep away from sources of ignition -
 No smoking. Take precautionary measures against static discharges.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
 This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES:

PRESSURE FIRE
 This product contains no chemical reportable under SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

| <u>CHEMICAL NAME</u> | <u>CAS NUMBER</u> | <u>LIST CITATIONS</u> |
|-------------------------|-------------------|---------------------------|
| LIQUEFIED PETROLEUM GAS | 68476-85-7 | 1, 10, 19, 20, 21, 23, 25 |

15. REGULATORY INFORMATION (CONT)

---REGULATORY LISTS SEARCHED---

| | | | | |
|---------------|---------------|---------------|-------------|-------------|
| 1 = ACGIH ALL | 6 = IARC 1 | 11 = TSCA 4 | 17 = CA P65 | 22 = MI 293 |
| 2 = ACGIH A1 | 7 = IARC 2A | 12 = TSCA 5a2 | 18 = CA RTK | 23 = MN RTK |
| 3 = ACGIH A2 | 8 = IARC 2B | 13 = TSCA 5e | 19 = FL RTK | 24 = NJ RTK |
| 4 = NTP CARC | 9 = OSHA CARC | 14 = TSCA 6 | 20 = IL RTK | 25 = PA RTK |
| 5 = NTP SUS | 10 = OSHA Z | 15 = TSCA 12b | 21 = LA RTK | 26 = RI RTK |

Code Key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

Precautionary Label Text:

CONTAINS LIQUEFIED PETROLEUM GAS

DANGER!

EXTREMELY FLAMMABLE LIQUID AND GAS UNDER PRESSURE. MAY CAUSE FLASH FIRE. CONTACT WITH LIQUID CAN CAUSE FREEZE BURNS. CAUSES EYE AND SKIN IRRITATION. EXPOSURE TO HIGH CONCENTRATIONS MAY CAUSE GENERAL CENTRAL NERVOUS SYSTEM DEPRESSION AND SUFFOCATION.

Keep away from heat, sparks, and flame. Avoid all personal contact. Avoid breathing gas. Keep container closed. Use only with adequate ventilation. Do not depend on odor to detect presence of gas.

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician immediately. If freeze burns occur, immerse involved area in warm water (between 100° and 110° F) for at least 30 minutes. Get medical attention.

Empty containers may contain product residue, including flammable or explosive dust-air mixtures. Do not cut, puncture, or weld on or near container. All label warnings and precautions must be observed until container has been thoroughly cleaned or destroyed.

Refer to product Material Safety Data Bulletin for further safety and health information.

USE: FUEL

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

| <u>INGREDIENT DESCRIPTION</u> | <u>PERCENT</u> | <u>CAS NUMBER</u> |
|-------------------------------|----------------|-------------------|
| LIQUEFIED PETROLEUM GAS | 100 | 68476-85-7 |

For Mobil Use Only: MHC: NA NA 0* 0* 0*, MPPEC: D, REQ: HOUSTON GAS LIQUIDS, SAFE USE: F

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