

PRODUCT NAME: LIQUEFIED PETROLEUM GAS WITH METHYL ACETYLENE-PROPADIENE

1. Chemical Product and Company Identification

**BOC Gases,
Division of,
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974**

**BOC Gases
Division of,
BOC Canada Limited
5975 Falbourn Street, Unit 2
Mississauga, Ontario L5R 3W6**

**TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE
NUMBER: CHEMTREC (800) 424-9300**

**TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE
NUMBER: (905) 501-0802
EMERGENCY RESPONSE PLAN NO: 2-0101**

PRODUCT NAME: LIQUEFIED PETROLEUM GAS WITH METHYL ACETYLENE-PROPADIENE
CHEMICAL NAME: Liquefied Petroleum Gas with Methyl Acetylene-Propadiene
COMMON NAMES/SYNONYMS: LPG - MAPP(R) Mixture; MAPP(R) - LPG Mixture; Methyl Acetylene-Propadiene (MAPP(R)) Mixture With LPG
TDG (Canada) CLASSIFICATION: 2.1
WHMIS CLASSIFICATION: A, B1

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/1/99

2. Composition, Information on Ingredients

EXPOSURE LIMITS¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Liquefied Petroleum Gas FORMULA: Mixture CAS: 68476-85-7 RTECS #: SE7545000	56.0	1000 ppm TWA	1000 ppm TWA	Not Available
Methyl Acetylene – Propadiene FORMULA: Mixture CAS: 56960-91-9 RTECS #: UK4920000	44.0	1000 ppm TWA	1000 ppm TWA 1250 ppm STEL	Not Available

¹ Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 1998-1999 Threshold Limit Values for Chemical Substances and Physical Agents.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

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3. Hazards Identification

EMERGENCY OVERVIEW

Colorless highly flammable gas with unpleasant odor. Dangerous fire and explosion hazard. Avoid heat, sparks, and flames. Liquid product may cause frostbite or irritation. Contents under pressure. Use and store below 125 °F.

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion No
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HEALTH EFFECTS:

Exposure Limits Yes	Irritant Yes	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None Reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:

Contact with liquid may cause frostbite, irritation or blindness.

SKIN EFFECTS:

Contact with liquid will cause frostbite or irritation.

INGESTION EFFECTS:

Ingestion is unlikely. The effects of ingestion are unknown. However minimal health effects are anticipated. Consult a physician for treatment or contact the local poison control center.

INHALATION EFFECTS:

This gas mixture is a central nervous system depressant and irritant. Inhalation of low concentrations may cause excitement and disorientation. In higher concentrations, this mixture may act as an asphyxiant so as to exclude an adequate supply of oxygen to the lungs, causing unconsciousness and possibly death.

Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Irritant properties may aggravate pre-existing eye and skin disorders.

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NFPA HAZARD CODES

Health: 1
Flammability: 4
Instability: 0

HMIS HAZARD CODES

Health: 1
Flammability: 4
Reactivity: 0

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

4. First Aid Measures

EYES:

Never introduce oil or ointment into the eyes without medical advice! In case of freezing or cryogenic "burns" by rapidly evaporating liquid. **DO NOT WASH THE EYES WITH HOT OR EVEN TEPID WATER!** Remove victim from the source of contamination. Open eyelids wide to allow liquid to evaporate. If pain is present, refer the victim to an ophthalmologist for further treatment and follow up. If the victim cannot tolerate light, protect eyes with a light bandage or handkerchief.

SKIN:

Remove contaminated clothing and flush affected area with lukewarm water. **DO NOT USE HOT WATER.** For contact with liquid gas, get immediate medical attention.

INGESTION:

Keep victim calm and warm. Notify physician and inform of nature of material, the state of the victim and any observed signs or symptoms.

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. Fire Fighting Measures

Conditions of Flammability: Flammable		
Flash point: -144°F (-98°C)	Method: Closed Cup	Autoignition: Temperature: 850°F (54°C)
LEL(%): 3.0	UEL(%): 11.0	
Hazardous combustion products: Acetylides		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:

Highly flammable gas mixture. This gas is heavier than air and may travel a considerable distance to an ignition source. May burn with an almost invisible flame in bright light. Cylinder may rupture violently from pressure when involved in a fire situation.

EXTINGUISHING MEDIA:

Water fog, dry chemical, foam.

MSDS: G-118

Revised: 6/1/99

FIRE FIGHTING INSTRUCTIONS:

If possible, stop the flow of gas. Inerting the atmosphere to reduce oxygen levels may extinguish flame, allowing capping of leaking container. Do not attempt this unless specifically trained. Reduce the rate of flow and inject an inert gas, if possible, before completely stopping the flow to prevent flashback. Do not extinguish the fire until the supply is shut off as otherwise an explosive re-ignition may occur. If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Use non-sparking tools to close container valves.

Use water spray to cool surrounding containers. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct 500 GPM water stream onto containers above liquid level with remote monitors. Limit the number of personnel in proximity of fire and evacuate surrounding areas in all directions.

Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed cylinders until well after flames are extinguished.

6. Accidental Release Measures

WARNING: Any leaks of MAPP present great danger of explosion or fire. Keep all sources of ignition away.

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical Classification:

Class I, Group Not Specified.

Earth bond and ground all lines and equipment associated with the fuel gas system. All equipment should be non-sparking and explosion proof.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure (<250 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" signs in the storage or use area. There should be no sources of ignition in the storage or use area. This fuel gas should not be handled or used in metals which form acetylides, such as copper, silver, magnesium or their alloys.

For additional recommendations consult Compressed Gas Association Pamphlet P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS:

Provide local exhaust or mechanical ventilation if welding or cutting in confined areas. If this gas is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code for details.

EYE/FACE PROTECTION:

Safety glasses with filter lenses, shade #4 or darker.

SKIN PROTECTION:

Leather gloves and apron when welding, cutting or brazing.

RESPIRATORY PROTECTION:

Respiratory protection is not normally required. Do not enter area of high MAPP concentration until first purging with inert gas and then ventilating with air.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70°F	: 97	Psia
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Boiling point	: -54 to -10	°F
	: -48 to -23	°C
Freezing point	: -184	°F
	: -120	°C
PH	: Not Available	
Specific gravity	: 0.571 (Liquid)	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Slight	
Odor threshold	: Not Available	
Odor and appearance	: A colorless gas with a characteristic, unpleasant odor.	

10. Stability and Reactivity

STABILITY:

Stable

CONDITIONS TO AVOID (STABILITY):

Heat, sparks, flames. High temperatures. Product will start to decompose at 815°F (435°C).

INCOMPATIBLE MATERIALS:

Natural rubber, copper alloys above 65% copper, silver, mercury, halogens, acids, metallic sodium, potassium, potassium permanganate.

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Revised: 6/1/99

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HAZARDOUS DECOMPOSITION PRODUCTS

May produce acetylides when in contact with silver, magnesium, or copper alloys above 65% copper.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

No data provided.

12. Ecological Information

No data given.

13. Disposal Considerations

Do not attempt to dispose of residual or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Methyl Acetylene and Propadiene, mixtures	Methyl Acetylene and Propadiene, mixtures
HAZARD CLASS:	2.1	2.1
IDENTIFICATION NUMBER:	UN 1060	UN 1060
SHIPPING LABEL:	FLAMMABLE GAS	FLAMMABLE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Acute Health Hazard
Fire Hazard

16. Other Information

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

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Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

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