



## MATERIAL SAFETY DATA SHEET

### PRODUCT NAME: MAPP GAS (METHYL ACETYLENE-PROPADIENE)

#### 1. Chemical Product and Company Identification

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

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

BOC Gases,  
A Division of  
BOC Canada Ltd.  
5975 Falbourne Street, Unit 2  
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (905) 501-1700  
24-HOUR EMERGENCY TELEPHONE  
NUMBER: (905) 501-0802  
EMERGENCY RESPONSE PLAN NO: 20101

**PRODUCT NAME:** MAPP GAS, METHYL ACETYLENE-PROPADIENE

**CHEMICAL NAME:** Methyl Acetylene-Propadiene (Acetylene-Propadiene mixture, stabilized)

**COMMON NAMES/SYNONYMS:** Formerly known as Mapp Gas, 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, D2B

**PREPARED BY:** Loss Control (908) 464-8100/(905) 273-7700

**PREPARATION DATE:** 06/04/98

**REVIEW DATES:** 06/04/98

#### 2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA <sup>1</sup>	TLV-ACGIH <sup>2</sup>	LD <sub>50</sub> , OR LC <sub>50</sub> 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: 59355-75-8 RTECS #: UK4920000	44.0	1000 ppm TWA	1000 ppm TWA 1250 ppm STEL	Not Available

<sup>1</sup> As stated in 29 CFR 1910. Subpart Z (revised July 1, 1993)

<sup>2</sup> As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

#### 3. Hazards Identification

##### EMERGENCY OVERVIEW

Product is a central nervous system depressant and irritant. Contact with liquid product may cause frostbite or irritation. Highly flammable.

##### 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.

MSDS: G-118

Revised: 06/04/98

**PRODUCT NAME: MAPP GAS (METHYL ACETYLENE-PROPADIENE)**

**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.

**NFPA HAZARD CODES**

Health: 2  
Flammability: 4  
Reactivity: 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.**

**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:**

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.

**EXTINGUISHING MEDIA:**

Water fog, dry chemical, foam.

**FIRE FIGHTING INSTRUCTIONS:**

Do not extinguish. Keep cylinder cool with water fog. If flame is extinguished, remove all sources of ignition and allow contents to vent. Increase ventilation to prevent flammable mixture formation.

**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. Electrical 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**

**EXPOSURE LIMITS:**

INGREDIENT	% VOLUME	PEL-OSHA <sup>2</sup>	TLV-ACGIH <sup>3</sup>	LD <sub>50</sub> , OR LC <sub>50</sub> Route/Species
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<sup>1</sup> Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July, 1, 1993).

<sup>3</sup> As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

**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 (H2O)	: Slight	
Odor threshold	: Not Available	
Odor and appearance	: A colorless gas with a characteristic, unpleasant odor.	

MSDS: G-118

Revised: 06/04/98

**10. Stability and Reactivity****STABILITY:**

Stable

**CONDITIONS TO AVOID (STABILITY):**

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.

**HAZARDOUS DECOMPOSITION PRODUCTS**

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

**CONDITIONS TO AVOID (POLYMERIZATION):**

None

**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-Propadiene Mixture, Stabilized	Methyl Acetylene-Propadiene Mixture, Stabilized
HAZARD CLASS:	2.1	2.1
IDENTIFICATION NUMBER:	UN 1060	UN 1060
SHIPPING LABEL:	FLAMMABLE GAS	FLAMMABLE GAS

Note: September 23, 1992 revision updated DOT shipping information and displayed registered trademarks for the MAPP component.

**15. Regulatory Information****SARA TITLE III NOTIFICATIONS AND INFORMATION****SARA TITLE III - HAZARD CLASSES:**

Acute Health Hazard

Fire Hazard

**16. Other Information**

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:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).