

BOC GASES

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.
175 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases,
A Division of
BOC Canada Ltd.
5975 Falbourne 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: 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 ¹	TLV-ACGIH ²	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: 59355-75-8 RTECS #: UK4920000	44.0	1000 ppm TWA	1000 ppm TWA 1250 ppm STEL	Not Available

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

² 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.

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. At 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

1. 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 keep informed 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

PRODUCT NAME: LIQUEFIED PETROLEUM GAS WITH METHYL ACETYLENE-PROPADIENE**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 cargo 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 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: 59355-75-8 RTECS #: UK4920000	44.0	1000 ppm TWA	1000 ppm TWA 1250 ppm STEL	Not Available

¹ Refer to individual state or 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 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:

PRODUCT NAME: LIQUEFIED PETROLEUM GAS WITH METHYL ACETYLENE-PROPADIENE

Stability and Reactivity

STABILITY:
None

CONDITIONS TO AVOID (STABILITY):
High temperatures. Product will start to decompose at 815° F (435° C).

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

HAZARDOUS DECOMPOSITION PRODUCTS:
They produce acetylides when in contact with silver, magnesium, or copper alloys above 65% copper.

CONDITIONS TO AVOID (POLYMERIZATION):
None

HAZARDOUS POLYMERIZATION:
None will occur.

4. Toxicological Information

No data provided.

5. Ecological Information

No data given.

6. 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.

7. 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.

8. Regulatory Information

8.1. HAZARDOUS MATERIALS INFORMATION ACT (HMIA) TITLE III NOTIFICATIONS AND INFORMATION

8.1.1. HAZARDOUS MATERIALS INFORMATION ACT (HMIA) TITLE III - HAZARD CLASSES:

Extreme Health Hazard
Severe Hazard

8.2. 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.

8.3. 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).

JUL. 21. 2000 11:13AM

CHILTON PRODUCTS

NO. 780

P. 2/5

APR 7 2000



U.S. Department
of Transportation
Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

DOT-E 6686
(NINTH REVISION)

EXPIRATION DATE: March 31, 2002

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Chilton Products Division
Western Industries, Inc.
Chilton, WI
2. PURPOSE AND LIMITATION:
 - a. This exemption authorizes the transportation in commerce of certain 2.1 gases in non-fillable steel cylinders made in compliance with DOT specification 39, except for seams. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304.
5. BASIS: This exemption is based on the application of Chilton Products dated January 26, 2000, submitted in accordance with § 107.109.

APR 7 2000

Continuation of DOT-E 6686 (9th Rev.)

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Materials Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Methyl acetylene and propadiene mixtures, stabilized	2.1	UN1060	N.A.
Petroleum gases, liquefied	2.1	UN1075	N.A.

7. SAFETY CONTROL MEASURES:

PACKAGING - Packaging prescribed is a non-refillable steel cylinder made in compliance with DOT Specification 39 (\$ 178.65), except seams may be of a brazed alloy having a melting point of not lower than 1,000°F and containing not more than sixty percent copper.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this exemption who receives a package covered by this exemption may reoffer it for transportation provided no modifications or changes are made to the package and it is reoffered for transportation in conformance with this exemption and the HMR.

b. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

c. MARKING: Each cylinder must be marked "DOT-E 6686" in place of the DOT specification mark "DOT-39".

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel used to transport packages covered by this exemption.

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11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

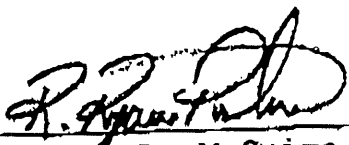
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:


for Robert A. McGuire
Acting Associate Administrator for
Hazardous Materials Safety

APR 7 2000
(DATE)

JUL. 21. 2000 11:14AM

CHILTON PRODUCTS

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Continuation of DOT-E 6686 (9th Rev.)

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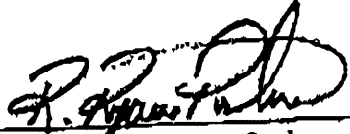
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Issued in Washington, D.C.:



For Robert A. McGuire
Acting Associate Administrator for
Hazardous Materials Safety

APR 7 2000

(DATE)

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Address all inquiries to: Associate Administrator for
Hazardous Materials Safety, Research and Special Programs
Administration, Department of Transportation, Washington, D.C.
20590.
Attention: DHM-31.

The original of this exemption is on file at the above office.
Photo reproductions and legible reductions of this exemption
are permitted. Any alteration of this exemption is
prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S.
Department of Transportation, 400 7th Street, S.W.,
Washington, DC 20590-0001, Attention: Records Center, 202-366-
5046.

PO: KFW