



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: METHANOL \leq (0.01%) IN AIR

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 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: METHANOL (\leq 0.01%) IN AIR
CHEMICAL NAME: Methanol (\leq 0.01%) in air
COMMON NAMES/SYNONYMS: Methanol (\leq 0.01%) in air
TDG (Canada) CLASSIFICATION: 2.2
WHMIS CLASSIFICATION: A, D2B

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/18/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA ¹	TLV-ACGIH ²	LD ₅₀ or LC ₅₀ Route/Species
METHANOL FORMULA: CH ₃ OH CAS: 67-56-1 RTECS #: PC1400000	\leq 0.01	200 ppm	200 ppm (skin) 250 ppm STEL	LC50: 6400 ppm/4 H inhalation/rat
AIR FORMULA: Mixture CAS: Mixture RTECS #: Mixture	\geq 99.99	Not Applicable	Not Applicable	Not Applicable

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

Colorless, odorless, non-flammable gas which is relatively non-toxic due to low concentration of methanol present. Eye and skin contact may cause minor irritation. Use with adequate ventilation.

ROUTE OF ENTRY:

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

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

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

EYE EFFECTS:

Contact with eyes may cause minor irritation.

SKIN EFFECTS:

Contact with eyes may cause minor irritation.

INGESTION EFFECTS:

Unlikely; product is a gas.

INHALATION EFFECTS:

Inhalation of relatively large quantities of this product may result in headache or respiratory changes.

SIGNS AND SYMPTOMS:

Due to low methanol content typical toxic symptoms would probably not be seen. Typical symptoms of methanol intoxication include abdominal pain with anorexia, nausea, and vomiting and symptoms similar to ethanol-like "hangover".

CHRONIC:

Long-term exposure to methanol may cause conjunctivitis, headache, giddiness, insomnia, gastric disturbances and failure of vision.

NFPA HAZARD CODES

Health: 1
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 1
Flammability: 0
Reactivity: 0

RATINGS SYSTEM

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

4. First Aid Measures

EYE:

Flush eyes with large amounts of water for at least 15 minutes holding eyelids open to ensure adequate rinsing. If irritation persists, seek immediate medical attention.

SKIN:

Remove contaminated clothing and flush area with water. If irritation persists, seek medical attention.

INGESTION:

Unlikely; product is a gas.

INHALATION:

MSDS: G-214

Revised: 6/18/96

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PROMPT MEDICAL ATTENTION AND REMOVAL FROM THE CONTAMINATED AREA IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

If breathing is difficult, administer oxygen. If breathing has stopped, administer artificial respiration.

5. Fire Fighting Measures

Conditions of Flammability: Not flammable, Oxidizer		
Flash point: Gas	Method: Not Applicable	Autoignition Temperature: Not determined
LEL(%): Not determined		UEL(%): Not determined
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:

The majority of this product constitutes a nonflammable gas. Containers may rupture or explode from pressure when exposed to heat or flames.

EXTINGUISHING MEDIA:

Any - Use media appropriate for surrounding fire.

FIRE FIGHTING INSTRUCTIONS:

Stop the flow of gas if it can be done without risk. Continue to cool surrounding containers until well after flames are extinguished. Firefighters should wear a full-facepiece, NIOSH/MSHA-approved self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear.

If flame is extinguished and flow of gas continues, increase ventilation to prevent flammable mixture formation in low areas or pockets.

6. Accidental Release Measures

Isolate hazard area, evacuate personnel and deny entry to unauthorized/unprotected individuals. Personnel entering area should wear appropriate protective equipment including respiratory protection suitable for unknown concentrations. Personnel should not re-enter hazard area until adequate oxygen is re-established. If a leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container of container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical classification:

Nonhazardous.

Valve protection caps must remain in place unless container is secured with valve protection outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (< 3000 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.

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Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 °F. Cylinders should be stored upright and firmly secured to prevent FALLING OR BEING KNOCKED OVER. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

For additional recommendations, consult Compressed Gas Association Pamphlet P-1 and G-12.

Stationary customer site vessels should operate in accordance with the manufacturer's and BOC's instruction. Do not attempt to repair, adjust or in any other way modify the operation of these vessels. If there is a malfunction or other type of operations problem with the vessel, contact the closest BOC location immediately.

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 LIMITS¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
METHANOL FORMULA: CH ₃ OH CAS: 67-56-1 RTECS #: PC1400000	≤ 0.01	200 ppm	200 ppm (skin) 250 ppm STEL	LD50: 64000 ppm/4 H inhalation/rat
AIR FORMULA: Mixture CAS: Mixture RTECS #: Mixture	≥ 99.99	Not Applicable	Not Applicable	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:

Use local exhaust in combination with general ventilation as necessary to control air contaminants to below acceptable exposure guidelines.

EYE/FACE PROTECTION:

Chemical safety goggles or safety glasses with face shield should be worn.

SKIN PROTECTION:

Protective gloves of butyl rubber are recommended when working with this product

RESPIRATORY PROTECTION:

A NIOSH/MSHA-approved full-facepiece SCBA operated in positive pressure mode and/or any supplied air respirator with a full facepiece and operated in a positive pressure mode in combination with an auxiliary self contained breathing apparatus operated in positive pressure mode should be used for high or unknown concentrations. Respirators should be stored in an area not likely to be contaminated.

OTHER/GENERAL PROTECTION:

Safety shoes

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Boiling point	: Not Available	°F °C
Freezing point	: Not Available	°F °C
pH	: Not Applicable	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Negligible	
Odor threshold	: Not Available	
Odor and appearance	: Colorless gas/vapor with slight alcohol odor.	

10. Stability and Reactivity

STABILITY:

Stable under normal conditions.

INCOMPATIBLE MATERIALS:

None known.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition may produce carbon oxides.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

EYE EFFECTS:

Methanol has produced moderate eye irritation in rabbits when administered at concentrations of 40 mg and 100 mg/24 H.

SKIN EFFECTS:

An LDLo of 393 mg/kg was cited for skin administration of methanol (monkey). An LD50 of 15800 mg/kg was cited for methanol administered to rabbit skin.

ACUTE ORAL EFFECTS:

Methanol is poisonous via ingestion and cause breathlessness, blindness, and even death. Ingestion of as little as 4 ml of methanol has caused blindness.

LD50: 5628 mg/kg; oral/rat

LD50: 7300 mg/kg; oral/mouse

LD50: 7 gm/kg; oral/monkey

INHALATION:

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TCLo: 300 ppm; inhalation/human
LC50: 64000 ppm/4H; inhalation/rat
LCLo: 50 gm/m³/2H; inhalation/mouse

OTHER:

Experimental reproductive, teratogenic, and mutation effects have been reported for methanol.

12. Ecological Information

ENVIRONMENTAL FATE

Degradation of methanol in the atmosphere occurs via reaction with photochemically produced hydroxyl radicals (approximate half-life of 17.8 days). Removal of methanol from air can occur via rainfall. Decomposition (via biodegradation) of methanol in soil and water is expected to occur.

13. Disposal Considerations

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

Methanol is listed as a RCRA hazardous waste U154 (40 CFR 261.33).

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Compressed gas, n.o.s. (Methanol)	Compressed gas, n.o.s. (Methanol)
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN 1956	UN 1956
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Sudden Release of Pressure Hazard

SECTION 313 REPORTING REQUIREMENTS:

This product contains methanol below the de minimus concentration of 1.0%.

CERCLA/SUPERFUND, 40 CFR 117, 302: This product contains methanol, a Reportable Quantity (RQ) Substance and if 5,000 pounds are released, notification to the National Response Center, Washington, DC (1-800-424-8802) is required.

ATMOSPHERIC STANDARDS: Methanol is produced as an intermediate or a final product of process units covered under standards of performance for equipment leaks of Volatile Organic Compounds (VOCs) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). (40 CFR 60.489)

MSDS: G-214

Revised: 6/18/96

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).