
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Lithium Methoxide In Methanol
CHEMICAL FAMILY: Alkali Metal Alkoxide
MOLECULAR FORMULA: CH₃LiO
SYNONYM(s): Lithium Methanolate
GENERAL USE: Industrial Manufacturing

MANUFACTURER
FMC CORPORATION
Lithium Division
P.O. Box 795
Bessemer City, NC 28016-0795
General Information: (704) 868-5300

Emergency Telephone Numbers:
CHEMTREC (800) 424-9300
Emergency Phone (704) 629-5361 (Plant) Call Collect 24 Hr/Day
Emergency Phone (303) 595-9048 (Medical) Call Collect

2. HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid, Category 2
Corrosive to skin; Category 1B
Acute Toxicity; Category 4 (inhalation)
Acute Toxicity; Category 4 (skin contact)
Acute Toxicity; Category 4 (ingestion)
Specific target organ systemic toxicity – Single exposure; Category 1

LABELING:

SYMBOLS: Flame, Corrosion, Skull and crossbones, Health hazard
SIGNAL WORD: Danger
HAZARD STATEMENTS: Highly flammable liquid and vapour
Causes severe skin burns and eye damage
Toxic if inhaled
Toxic in contact with skin
Toxic if swallowed
Causes damage to organs including liver, kidneys, pancreas, heart, lungs and brain.

PRECAUTIONARY STATEMENTS: **Prevention:**
Keep away from heat, sparks or open flame- No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment
Use explosion-proof electrical, ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear chemical splash goggles with a face shield, rubber gloves and rubber clothing.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not breathe vapors.
Do not eat, drink or smoke when using this product.

Response:

In case of fire, DO NOT USE WATER OR CARBON DIOXIDE. Use dry chemical.

Remove/take off immediately all contaminated clothing.

Wash contaminated clothing before reuse.

First Aid:

See Section 4 of the MSDS.

Storage

See Section 7 of the MSDS.

Disposal

See Section 13 of the MSDS.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>EC No</u>	<u>Wt.%</u>	<u>Classification, Hazard Statement Codes</u>	
Lithium methoxide	865-34-9	212-737-7	1 - 15	Self-heat Cat 1	H251
				Skin Corr. Cat 1B	H314
Methanol	67-56-1	200-659-6	85 - 99	Flam. liq. Cat. 2	H225
				Acute Tox. Cat. 3	H331
				Acute Tox. Cat. 3	H311
				Acute Tox. Cat. 3	H301
				STOT SE Cat 1	H370

4. FIRST AID MEASURES

EYES:

Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

SKIN:

Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. Obtain immediate medical attention. Contact a medical doctor if necessary.

INGESTION:

Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION:

Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

NOTES TO MEDICAL DOCTOR:

Product has a high pH and is corrosive to eyes, skin, and mucous membranes. Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Observation may be warranted. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS:

Upper: 36% Lower: 6% (methanol)

GENERAL HAZARD:

Flammable liquid. Reacts violently with water to give off flammable fumes and corrosive dust.

EXTINGUISHING MEDIA:

DO NOT USE WATER OR CARBON DIOXIDE. Use dry chemical.

HAZARDOUS COMBUSTION PRODUCTS:

Lithium hydroxide, formaldehyde, carbon dioxide, carbon monoxide.

FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

AUTOIGNITION TEMPERATURE:

Not available for formulation. Reported values for methanol vary: 385 °C, also 464-470 °C

PROPERTIES CONTRIBUTING TO

FLAMMABILITY:

Water reactivity and volatility of solvents.

FLASH POINT:

11°C (methanol)

SENSITIVITY TO STATIC DISCHARGE:

Yes

SENSITIVITY TO IMPACT:

None

COMMENTS:

(See Section 10, Stability and Reactivity)

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES:

Remove all sources of ignition. Do not use water in the initial phases of clean up. Contain spill with absorbant. Transfer to approved transport container and clean up spillage with an absorbant. Dispose of waste according to local and Federal laws and regulations. Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, Emergency Overview and Potential Health Effects; and Section 8, Recommended Personal Protective Equipment.

7. HANDLING AND STORAGE

HANDLING:

Use in a closed system under argon or nitrogen. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist.

STORAGE:

Store in a cool place. Keep container closed. Keep away from sources of ignition, water, air, acids and oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name

methanol

TWA

(ACGIH)

200 ppm

STEL/Ceiling

(ACGIH)

250 ppm

PEL

(OSHA)

200 ppm

STEL/Ceiling

(OSHA)

ENGINEERING CONTROLS:

Use in closed system under argon or nitrogen. If personal contact can occur, use local exhaust ventilation (explosion-proof), to keep airborne concentrations below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes And Face:

Chemical splash goggles with a face shield.

Respiratory:

When engineering controls are not adequate, wear a NIOSH/MSHA respirator approved for protection against organic vapors and mists.

Protective Clothing:

Rubber gloves and rubber clothing.

Work Hygienic Practices:

Quick-drench eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

<u>ODOR:</u>	Alcohol
<u>APPEARANCE:</u>	Liquid, clear colorless
<u>pH:</u>	(1% Slurry) @ 25°C: >12
<u>PERCENT VOLATILE:</u>	85-99
<u>VAPOR PRESSURE:</u>	92 mm Hg @ 20°C, methanol
<u>VAPOR DENSITY:</u>	(Air = 1): 1.1 (methanol)
<u>BOILING POINT:</u>	64.7 °C (methanol)
<u>MELTING POINT:</u>	-97.8 °C (methanol)
<u>SOLUBILITY IN WATER:</u>	Not applicable. Reacts with water forming lithium hydroxide
<u>EVAPORATION RATE(Butyl Acetate = 1):</u>	4.1 (methanol)
<u>SPECIFIC GRAVITY:</u>	0.8 g/ml
<u>MOLECULAR WEIGHT:</u>	37.97
<u>COEFF. OIL/WATER:</u>	Not applicable for formulation. Methanol: Log P _(oct) = -0.82
<u>ODOR THRESHOLD:</u>	100 ppm, (methanol)
<u>FLAMMABLE LIMITS:</u>	Upper: 36% Lower: 6% (methanol)
<u>FLASH POINT:</u>	11°C (methanol)
<u>AUTOIGNITION TEMPERATURE:</u>	Not available for formulation. Reported values for methanol vary: 385 °C, also 464-470 °C
<u>VISCOSITY:</u>	Not available
<u>FLAMMABILITY:</u>	Water reactive material in flammable liquid solvent
<u>DECOMPOSITION TEMPERATURE:</u>	Not available
<u>EXPLOSIVE PROPERTIES:</u>	Not explosive
<u>OXIDIZING PROPERTIES:</u>	Not an oxidizer

10. STABILITY AND REACTIVITY

<u>CONDITIONS TO AVOID:</u>	Moisture, exposure to air, excess heat.
<u>STABILITY:</u>	Stable
<u>POLYMERIZATION:</u>	Does not polymerize
<u>HAZARDOUS DECOMPOSITION PRODUCTS:</u>	Lithium hydroxide, flammable hydrocarbons and alcohols, carbon monoxide.
<u>INCOMPATIBLE MATERIALS:</u>	Heat, fire, air, water, acids and oxidizing chemicals

11. TOXICOLOGICAL INFORMATION

<u>Eye Contact:</u>	No data available for the product. Lithium methoxide: Corrosive.	
<u>Skin Contact:</u>	Corrosive, PG II, (lithium methoxide in methanol) Corrositex In-Vitro Skin Corrosion Assay	[FMC study I99-2302]
<u>Skin Absorption:</u>	No data available for the product. Lithium methoxide: Corrosive. Methanol: Dermal LD ₅₀ = 15800 mg/kg (rabbit)	[RTECS]
<u>Ingestion:</u>	No data available for the product. Lithium methoxide: Corrosive. Methanol: Oral LD ₅₀ = 5600 mg/kg (rat) Methanol is more acutely toxic to humans than to animals.	[RTECS]

Inhalation: No data available for the product.
Lithium methoxide: Corrosive.
Methanol: Inhalation LC₅₀ = 64000 ppm/4H (rat) [RTECS]
Methanol is more acutely toxic to humans than to animals.

Acute Effects From Overexposure:

This product is corrosive to skin, eyes (may cause blindness), nose, throat and stomach.
Methanol: Contains methanol which is toxic if inhaled or swallowed. Methanol can very readily form extremely high vapor concentrations at room temperature. Target organ effects from methanol, including nervous system effects and vision disturbances. Methanol is more acutely toxic to humans than to animals.

Chronic Effects From Overexposure:

No data available for the product.
Methanol: Effects of chronic poisoning from repeated exposure to methanol vapor include conjunctivitis, headache, giddiness, insomnia, gastric disturbance and failure of vision. In animal experiments, methanol has caused fetotoxic or teratogenic effects, in the absence of maternal toxicity. Methanol produced negative results in one animal test for skin sensitization.

Sensitization: Methanol: Methanol produced negative results in one animal test for skin sensitization.

Carcinogenicity: EH40: Not listed.
IARC: Not listed.
NTP: Not listed.
OSHA: Not considered a carcinogen under OSHA.
ACGIH: Not listed

Mutagenicity: No

Reproductive Toxicity: No data available for the product.
Methanol: In animal experiments, methanol has caused fetotoxic or teratogenic effects, in the absence of maternal toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Environmental toxicity testing of the product has not been carried out.

Methanol:

96 hour LC₅₀ = 20,100 mg/L (rainbow trout)
96 hour LC₅₀ = 29,400 mg/L (fathead minnow)
96 hour LC₅₀ = 15,400 mg/L (bluegill)
24 hour EC₅₀ > 10,000 mg/L (daphnia magna straus)
96 hour IC₅₀ = 12,000 mg/L (shrimp)

[Handbook of Env. Data Organic Chem. 4th ed.]

Chemical Fate Information:

Lithium methoxide is expected to react violently with water or moisture, producing methanol and lithium hydroxide.
Methanol: Methanol is likely to volatilize rapidly into the air because of its high vapor pressure. Methanol will dissolve rapidly in water. It is poorly absorbed onto soils or sediments. Methanol is biodegradable and not expected to bioaccumulate through food chains in the environment

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of waste according to local and Federal laws and regulations.

14. TRANSPORT INFORMATION

UN NUMBER: UN2924
PROPER SHIPPING NAME: Flammable liquid, corrosive, N.O.S. (lithium methoxide in methanol)
CLASSIFICATION: 3, Flammable liquid, (8, Corrosive)
LABELS: Flammable, Corrosive
PACKING GROUP: II
FLASH POINT: 11°C (methanol)
CUSTOM TARIFF NO.: 2905.11.0000
MARINE POLLUTANT: No
PIH: Not designated Poison Inhalation Hazard by US DOT.

15. REGULATORY INFORMATION

UNITED STATES
SECTION 311 HAZARD CATEGORY (40 CFR 370): Reactive, fire hazard, immediate (acute) health hazard;
SECTION 313 REPORTABLE INGREDIENTS (40 delayed (chronic) health hazard.
CFR 372): This product contains methanol which is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986. This information must be included in all MSDS's that are copied and distributed for this material.

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): Not listed

CERCLA HAZARDOUS SUBSTANCE (40 CFR 302.4): Methanol is listed. The reportable quantity is 5000 pounds.

TSCA SEC 12B EXPORT NOTIFICATION: This product is not subject to TSCA 12 (b) Export Notification Requirements.

TSCA INVENTORY STATUS (40 CFR 710): Listed

CANADA
WHMIS: Product Identification No.: 2924
Hazard Classification:
Class B, Division 2 (Flammable liquid)
Class B, Division 6 (Reactive Flammable Materials/Flammable gas on contact with water)
Class D, Division 1B (Poisonous and infectious material - Immediate and serious effects - Toxic)
Class D, Division 2A (Poisonous and infectious material - Other effects - Very toxic)
Class D, Division 2B (Poisonous and infectious material - Other effects - Toxic)
Class E, (Corrosive)
Ingredient Disclosure List: Methanol is listed

16. OTHER INFORMATION

REVISION SUMMARY: Revision # 6: Sections 2, 3, 9, 14 & 16 revised. Regular review completed.
NFPA RATING **HEALTH:** 3
FLAMMABILITY: 3
REACTIVITY: 2
SPECIAL: ~~W~~

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MSDS Ref. No: QS-MSD-115
Version: US/Canada
Date Approved: 03/01/2009
Revision No: 6

This MSDS has been prepared to meet U. S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.
type 2c

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