

Section 1 – Chemical Product and Company Identification

MSDS Name: Lithium Methoxide in Methanol

Molecular Name: CH₃LiO

Chemical Family: Alkali Metal Alkoxide

Use of the substance: Industrial Manufacturing

Company: Optima Chemicals Group, LLC
200 Willacoochee Hwy.
Douglas, Georgia 31535
Telephone (912) 384-5101 FAX (912) 384-6330
Emergencies: Telephone (912) 384-5101

Section 2 – Hazards Identification

Hazards:

Highly flammable liquid and vapor.

Causes severe skin burns and eye damage.

Toxic to skin and if swallowed or inhaled.

Causes damage to organs including liver, kidneys, pancreas, heart, lungs and brain.

NFPA Rating: Health: 3 Flammability: 3 Reactivity: 2 Special: W

Precautionary Statements:

Wear chemical splash goggles with a face shield, rubber gloves and rubber clothing.

Keep away from heat/sparks/open flame – No smoking.

Keep Container tightly closed.

Ground/bound container and receiving equipment.

Use explosion-proof electrical, ventilation and lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust or mist.

Wash thoroughly after handling.

Avoid breathing vapors.

Use only outdoors or in well-ventilated area.

Do not eat, drink or smoke when using this product

In case of fire, use dry chemical for extinction. Do not use water or Carbon Dioxide.

Section 3 – Composition, Information on Ingredients

<u>CAS #</u>	<u>EC#</u>	<u>Chemical Name</u>	<u>Wt.%</u>
865-34-9	212-737-7	Lithium methoxide	1-15
67-56-1	200-659-6	Methanol	85-99

Section 4 – First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, lifting upper and lower lids. See a medical doctor or ophthalmologist immediately.

Skin: Quickly wipe off as much as possible, then immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and/or shoes. Thoroughly wash with soap and water, and seek medical attention.

Ingestion: Quickly wipe material from the mouth, and rinse mouth out with plenty of water. Dilute with 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: Remove from exposure, to fresh air immediately. If breathing discomfort occurs and persists, seek medical attention. If not breathing give artificial respiration, and seek medical attention immediately.

Notes to Medical Doctor: This 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 with symptomatic and supportive care.

Section 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.

Fire Extinguishing Agents Recommended: Do not use water or carbon dioxide. Use dry chemical.

Hazardous Combustion Products: Lithium hydroxide, carbon dioxide, carbon monoxide.

Special Fire fighting Procedures: Wear self-contained breathing apparatus and protective clothing (approved for firefighting) to protect against heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

Autoignition temperature: Not applicable. Reported values for methanol vary from 385°C, also 464°-470°C

Flashpoint: 11°C (methanol)

Sensitivity to Static Discharge: Yes

Sensitivity to Impact: None

Section 6 – Accidental Release Measures

Remove all sources of ignition. Do not use water in the initial phases of clean up. Contain spill with absorbent. Transfer to approved transport container and clean up spillage with an Absorbent. Dispose of waste according to local, state and Federal laws and regulations. Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, and Section 8.

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

Section 8 – Exposure Controls, Personal Protection

Exposure Limits:

Methanol; PEL (OSHA) – 200 ppm, TWA (ACGIH) – 200 ppm, STEL/Ceiling (ACGIH) – 250 ppm.

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.

Eyes and Face: Wear chemical splash goggles with a face shield.

Skin: Wear rubber gloves and rubber protective clothing.

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

Work Hygienic Practices: Quick-drench eyewash and safety shower.

Section 9 – Physical and Chemical Properties

Appearance and Odor: liquid, clear, colorless, alcohol odor

Melting Point: -97.8°C (methanol)

Boiling Point: 64.7° C (methanol)

Flash Point: 11°C (methanol)

Vapor Density: Air=1, 1.1 (methanol)

pH: (1% slurry) @ 25°C: > 12

Percent Volatile: 85-99

Vapor Pressure: 92 mm Hg @ 20°C, methanol

Specific Gravity: 0.8 g/ml

Evaporation Rate: 4.1 methanol

COEFF. OIL/WATER: methanol Log P_(oct)=0.82

Water Solubility: not applicable, reacts with water to form lithium hydroxide.

Flammability: water reactive material in flammable liquid solvents.

Viscosity: Not available

Odor Threshold: 100 ppm, (methanol)

Decomposition Temperature: Not available

Explosive Properties: Not explosive

Oxidizing Properties: Not an oxidizer

Molecular Weight: 37.97

Section 10 – Stability and Reactivity

Stability: Stable.

Hazardous Polymerization: Does not polymerize

Incompatibility: Heat, fire, air, water, acids and oxidizing chemicals

Hazardous Decomposition Products: Borane/boron oxides. Liberates flammable/explosive hydrogen gas.

Conditions to Avoid: moisture, exposure to air, excess heat

Section 11 – Toxicological Information

Eyes: No data available for the product. Lithium- methoxide: Corrosive

Skin: No data available for the product. Lithium - methoxide: Corrosive

Ingestion: No data available for the product. Lithium - methoxide: Methanol dermal LD₅₀ = 15800 mg/kg (rabbit)

Inhalation: No data available for the product. Lithium – methoxide; corrosive methanol oral LD₅₀ = 5600 mg/kg (rat). Methanol is more acutely toxic to humans than to animals.

Acute Effects from overexposure: No data available for the product. Corrosive to skin, eyes (may cause blindness), nose, throat and stomach. Methanol; is toxic if inhaled or swallowed. Methanol can readily form extremely high vapor concentrations at room temperature. Target organ effects from methanol, including nervous system effects and vision disturbances.

Chronic Effects from Overexposure: No data available for this product. Methanol: Effects from chronic poisoning from repeated exposure to methanol vapor include conjunctivitis, headache, giddiness, insomnia, gastric disturbance and failure of vision.

Sensitization: Methanol produced negative results in one animal test.

Carcinogenicity: No listed by IARC, NTP, OSHA, ACGIH, or EH40.

Mutagenicity: No

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

Section 12 – Ecological Information

Ecotoxicological Information:

Environmental toxicity testing of the product has not been conducted.

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: No data available for the product. Lithium methoxide is expected to violently react with water or moisture, producing methanol and lithium hydroxide. 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 into soil or sediment. Methanol is biodegradable and is not expected to bioaccumulate through food chains in the environment.

Section 13 – Disposal Considerations

Dispose of in accordance with federal, state, and local regulations.

Section 14 – Transport Information

DOT Shipping: flammable liquid, corrosive, N.O.S. (lithium t methoxide in methanol), 3, flammable liquid, (8, corrosive) UN2924, PG II.

Labels: Flammable, corrosive.

Custom Tariff No: 2905.11.0000

Marine Pollutant: No

PIH: Not designated Poison Inhalation Hazard by USDOT.

Section 15 – Regulatory Information

United States:

Section 311 Hazard Category (40CFR 370): Reactive; fire hazard, immediate (acute); health hazard, delayed chronic health hazard.

Section 313 Reportable Ingredients (40 CFR 372): Methanol is a reportable substance.

Section 302 Extremely Hazardous Substances (40 CFR 355): Not listed.

CERCLA Hazardous Substance (40 CFR 302.4): Methanol has a reportable quantity of 5000 pounds.

TSCA Sec 12B Export Notification: Not required

TSCA Inventory Status (40 CFR 710): Listed

Canada:

Product Identification No.: 2924

WHMIS: 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 (toxic material with chronic effects), Class E; (Corrosive), Ingredient Disclosure List: Methanol is listed.

Section 16 – Additional Information

Creation Date: 02/01/2010

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.

This information is believed to be accurate and represents the best information currently available to Optima Chemical Group LLC. However, we make no warranty of merchantability, express or implied, with respect to such information and assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.