



## Material Safety Data Sheet

LA1183  
Methanol

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Id:** LA1183

**Product Name:** Methanol

**Synonyms:** Methyl alcohol, methyl hydrate, wood spirit, methyl hydroxide

**Chemical Family:** Alcohol

**Application:** Solvent, fuel, feedstock

**Distributed By:**

Univar Canada Ltd.  
9800 Van Horne Way  
Richmond, BC  
V6X 1W5

**Prepared By:** The Safety, Health and Environment Department of Univar Canada Ltd.

**Preparation date of MSDS:** 03/12/2004

**Telephone number of preparer:** 1-866-686-4827

**24-Hour Emergency Telephone Number (CHEMTREC):** (800) 424-9300

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

#### HAZARDOUS COMPONENTS

| Ingredients         | Percentage | LD50s and LC50s Route & Species:  |
|---------------------|------------|---|
| Methanol<br>67-56-1 | 99.85      | Dermal LD50 (Rabbit) 15800 mg/kg<br>Oral LD50 (Rat) 5628 mg/kg<br>Inhalation LC50 (Rat) 64000 mg/kg<br>Oral LD50 (Mouse) 7300 mg/kg |

**Notes:** No additional remark.

### 3. HAZARDS IDENTIFICATION

**Potential Acute Health Effects:**

**Eye Contact:** Vapor and/or liquid causes irritation. Symptoms of exposure may include: eye irritation, burning sensation, pain, watering and/or change of vision. Eye injury which may persist for several days.

**Skin Contact:** May cause skin irritation. May be absorbed through the skin in toxic or lethal amounts. Symptoms of exposure may include: Prolonged or repeated skin contact may cause drying, cracking or irritation. Central nervous system depression with headache, stupor, uncoordinated or strange behaviour or unconsciousness. Prolonged and or repeated skin contact with methanol soaked material has produced toxic effects including vision effects and death.

**Inhalation:** Inhalation of high airborne concentrations can irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and death.

**Ingestion:** May be fatal if swallowed. A small amount of methanol (usually two or more ounces) can cause mental sluggishness, nausea and vomiting leading to severe illness, and may produce adverse effects on vision with possible blindness or death if treatment is not received.

## 4. FIRST AID MEASURES

**Eye Contact:** Flush immediately with gentle running water for a minimum of 15 minutes, ensuring all surfaces and crevices are flushed by lifting lower and upper lids. Obtain medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and discard.

**Inhalation:** Remove to fresh air, restore or assist breathing if necessary, obtain medical attention immediately.

**Ingestion:** If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical help immediately. Onset of symptoms may be delayed for 18 to 24 hours after ingestion. Swallowing methanol is life threatening.

**Notes to Physician:** Acute exposure to methanol, either through ingestion or breathing high airborne concentrations can result in symptoms appearing between 40 minutes and 72 hours after exposure. Symptoms and signs are usually limited to CNS, eyes and gastrointestinal tract. Because of the initial CNS's effects of headache, vertigo, lethargy and confusion, there may be an impression of ethanol intoxication. Blurred vision, decreased acuity and photophobia are common complaints. Treatment with ipecac or lavage is indicated in any patient presenting within two hours of ingestion. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate levels are a more accurate measure of severity than serum methanol levels. Treatment protocols are available from most major hospitals and early collaboration with appropriate hospital is recommended. In cases of methanol poisoning, medical care must emphasize the control of acidosis. The use of intravenous bicarbonate has been lifesaving. Evidence shows that the treatment of methanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of the toxic metabolites of methanol. A blood methanol level of 50 mg/100ml is an indication for hemodialysis, which has improved the prognosis of methanol intoxication.

## 5. FIRE FIGHTING MEASURES

**Flash Point:** 11 °C / 52 °F

**Flash Point Method:** Tag Closed Cup

**Autoignition Temperature:** 385 °C / 725 °F

**Flammable Limits in Air (%):** Lower: 6 Upper: 36

**Extinguishing Media:** Use aqueous film forming foam for large fires. Use carbon dioxide or dry chemical media for small fires. Water may not be effective to extinguish fire.

**Special Exposure Hazards:** Flammable Liquid. Methanol burns with a clean clear flame that is almost invisible in daylight. Stay upwind. Isolate and restrict area access. Concentrations of greater than 25% methanol in water can be ignited. Use fine water spray or fog to control fire spread and cool adjacent structures or containers. Contain fire control water for later disposal.

**Special Protective Equipment:** Fire fighters must wear full face, positive pressure, self-contained breathing apparatus and appropriate protective clothing. Protective fire fighting structural clothing is not effective protection from methanol. Do not walk through spilled product. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use.

**NFPA RATINGS FOR THIS PRODUCT ARE:** HEALTH 1, FLAMMABILITY 3, REACTIVITY 0

**HMIS RATINGS FOR THIS PRODUCT ARE:** HEALTH 1, FLAMMABILITY 3, REACTIVITY 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures:** Restrict access to unprotected personnel. Full-face, positive pressure self-contained breathing apparatus or airline and protective clothing must be worn. Do not walk through spilled product as it may be on fire and not visible.

**Environmental Precautionary Measures:** Prevent from entering sewers, waterways or low areas. Consult local authorities.

**Procedure for Clean Up:** Flammable liquid. Release can cause an immediate fire/explosion hazard. Eliminate all ignition sources. Stop leak. Use absorbent materials. Contain spill by diking. Fluorocarbon alcohol resistant foams may be applied to spill to diminish vapour and fire hazard. Maximize recovery for recycling or reuse. Collect liquid with explosion proof pumps. For small spills, collect with non-combustible absorbent. Prevent spilled material from entering sewers, confined spaces, drains, or waterways. Do not walk through spilled product as it may be on fire and not visible.

## 7. HANDLING AND STORAGE

**Handling:** No smoking or open flame in storage, use or handling areas. Use explosion proof electrical equipment. Ensure proper electrical grounding procedures are in place.

**Storage:** Tanks must be grounded and vented and should have vapour emission controls. Tanks must be diked. Avoid storage with incompatible materials. Anhydrous methanol is non-corrosive to most metals at ambient temperatures except lead and magnesium. However coatings of copper (or copper alloys), zinc (including galvanized steel) or aluminium are unsuitable for storage as they are attacked slowly. Mild steel is the recommended construction material.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Use explosion proof equipment.

**Respiratory Protection:** NIOSH approved supplied air respirator when airborne concentrations exceed exposure limits. Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level.

For concentrations > 1 and < 100 times the occupational exposure level: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > the IDLH level or unknown concentration (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

**Gloves:** Butyl rubber gloves. Nitrile gloves.

**Skin Protection:** Wear chemical resistant pants and jackets, preferably butyl or nitrile rubber.

**Eyes:** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Personal Protection Data:** Ensure that eyewash stations and safety showers are proximal to the work-station location. Chemical resistant footwear.

| Ingredients | Exposure Limit - ACGIH      | Exposure Limit - OSHA  | Immediately Dangerous to Life or Health - IDLH |
|-------------|-----------------------------|--|--|
| Methanol    | 200 ppm TWA<br>250 ppm STEL | 200 ppm TWA<br>250 ppm STEL<br>260 mg/m <sup>3</sup> TWA<br>325 mg/m <sup>3</sup> STEL | 6000 ppm                                       |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid

**Color:** Clear/ Colorless

**Odor:** Slight Alcohol

**pH** Not applicable.

**Specific Gravity:** 0.792

**Boiling Point:** 64.7 °C / 148.5 °F

**Freezing/Melting Point:** -97.8 °C / -144 °F

**Vapor Pressure:** 127 mmHg @ 25 C

**Vapor Density:** 1.11

**% Volatile by Volume:** 100%

**Evaporation Rate:** 2.1

**Solubility:** Soluble.

**VOCs (lbs/gallon):** Not Available.

**Viscosity:** Not Available.

**Molecular Weight:** 32.04

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable.

**Hazardous Polymerization:** Will not occur.

**Conditions to Avoid:** Incompatible materials. Avoid any source of ignition.

**Materials to Avoid:** Strong oxidizers. Strong inorganic acids. Strong bases. May be corrosive to lead and aluminium.

**Hazardous Decomposition Products:** Formaldehyde. Carbon dioxide. Carbon monoxide.

**Additional Information:** No additional remark.

## 11. TOXICOLOGICAL INFORMATION

### Principle Routes of Exposure

**Ingestion:** May be fatal if swallowed. A small amount of methanol (usually two or more ounces) can cause mental sluggishness, nausea and vomiting leading to severe illness, and may produce adverse effects on vision with possible blindness or death if treatment is not received.

**Skin Contact:** May cause skin irritation. May be absorbed through the skin in toxic or lethal amounts. Symptoms of exposure may include: Prolonged or repeated skin contact may cause drying, cracking or irritation. Central nervous system depression with headache, stupor, uncoordinated or strange behaviour or unconsciousness. Prolonged and or repeated skin contact with methanol soaked material has produced toxic effects including vision effects and death.

**Inhalation:** Inhalation of high airborne concentrations can irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and death.

**Eye Contact:** Vapor and/or liquid causes irritation. Symptoms of exposure may include: eye irritation, burning sensation, pain, watering and/or change of vision. Eye injury which may persist for several days.

**Additional Information:** NOTE: The odour threshold of methanol is several times higher than the TLV-TWA. Repeated exposure by inhalation or absorption may cause systemic poisoning, brain disorders, impaired vision and blindness. Inhalation may worsen conditions such as emphysema or bronchitis. Repeated skin contact may cause dermal irritation, dryness and cracking. Effects of sub lethal doses may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity. Methanol is toxic by inhalation and ingestion. Inhalation of vapors may cause cyanosis, lethargy, loss of consciousness and death. The effects from inhalation may be delayed. Ingestion may cause malaise, discomfort, and death if not treated promptly. Medical conditions aggravated by exposure include: skin disorders and allergies, liver disorders and eye disease. Undocumented reports suggest that this product may form a siloxane polymer on the eyes, lungs, or other mucous membranes. Long term exposure to methanol has been associated with headaches, giddiness, conjunctivitis, insomnia and impaired vision. Dermal absorption of significant amounts of methanol resulted in death in several animal species. Toxic effects in animals exposed to methanol by inhalation include eye irritation, blindness and nasal discharge. Toxic effects observed in animals exposed to methanol by ingestion include anesthetic effects, damage to the optic nerve and acidosis.

### Acute Test of Product:

**Acute Oral LD50:** >5,000 (Rat)

**Acute Dermal LD50:** 20 mL/kg (Rabbit)

**Acute Inhalation LC50:** 64, 000 ppm (Rat)

### Carcinogenicity:

| Ingredients | IARC - Carcinogens | ACGIH - Carcinogens |
|-------------|--------------------|---------------------|
| Methanol    | Not listed.        | Not listed.         |

**Carcinogenicity Comment:** Not listed with IARC, NTP, ACGIH or OSHA as a carcinogen.

**Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity:** Methanol is reported to cause birth defects in rats exposed to 20 000 ppm. In experimental animals, methanol is fetotoxic, teratogenic and has produced significant behavioral abnormalities in offspring at dose levels not producing maternal toxic effects. Behavioural abnormalities were observed in the offspring of rats given drinking water containing 2% methanol. Tests of methanol in bacterial or mammalian cell cultures, and in animals demonstrate no mutagenic activity.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information:

| Ingredients | Ecotoxicity - Fish Species Data   | Acute Crustaceans Toxicity: | Ecotoxicity - Freshwater Algae Data |
|-------------|---|-----------------------------|-------------------------------------|
| Methanol    | LC50 (rainbow trout (fingerling)) 13 mg/L<br>LC50 (fathead minnow (28 days old)) 29400 mg/L<br>LC50 (trout) 8000 mg/L | Not Available.              | Not Available.                      |

### Other Information:

Methanol in fresh or salty water may have serious effects on aquatic life. A study on methanol's toxic effects on sewage sludge bacteria reported little effect on digestion at 1.0 % while 0.5% methanol retarded digestion. Methanol will be broken down to carbon dioxide and water.

## 13. DISPOSAL CONSIDERATIONS

**Disposal of Waste Method:** Incineration is the recommended disposal method. Biological treatment may be used on dilute aqueous waste methanol. Methanol wastes are not suitable for underground injection. Waste materials must be disposed of in accordance with your municipal, state, provincial and federal regulations.

**Contaminated Packaging:** Waste materials must be disposed of in accordance with your municipal, state, provincial and federal regulations.

## 14. TRANSPORT INFORMATION

### DOT (U.S.):

**DOT Shipping Name:** Methyl Alcohol

**DOT Hazardous Class** 3 (6.1)

**DOT UN Number:** UN1230

**DOT Packing Group:** II

**DOT Reportable Quantity (lbs):** 5000

**Notes:** No additional remark.

**Marine Pollutant:** No.

### ICAO/IATA:

**IATA Proper Shipping Name:** Methanol

**IATA Hazard Class:** 3 (6.1)

**UN Number:** UN1230

**Packing Group:** II

**IATA Label:** Flammable liquid.

**IATA Remarks:** No additional remark.

### IMDG:

**IMDG Proper Shipping Name:** Methanol

**Hazard Class:** 3 (6.1)

**UN Number:** UN1230

**Packing Group:** II

**Marine Pollutant:** No.

**IMDG Label:** Flammable. Toxic.

**Remarks:** No additional remark.

### TDG (Canada):

**TDG Proper Shipping Name:** Methanol

**Hazard Class:** 3 (6.1)

**UN Number:** UN1230

**Packing Group:** II

**Note:** No additional remark.

**Marine Pollutant:** No.

## 15. REGULATORY INFORMATION

**U.S. TSCA Inventory Status:** All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

**Canadian DSL Inventory Status:** All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.

### U.S. Regulatory Rules

| Ingredients | CERCLA/SARA - Section 302: | SARA (311, 312) Hazard Class: | CERCLA/SARA - Section 313: |
|-------------|----------------------------|-------------------------------|----------------------------|
| Methanol    | Not Listed.                | LISTED                        | LISTED                     |

**California Proposition 65:** Not Listed.

**MA Right to Know List:** Not Listed.

**New Jersey Right-to-Know List:** Not Listed.

**Pennsylvania Right to Know List:** Not Listed.

### **WHMIS Hazardous Class:**

B2 FLAMMABLE LIQUIDS

D1B TOXIC MATERIALS

D2A VERY TOXIC MATERIALS

D2B TOXIC MATERIALS



## 16. OTHER INFORMATION

**Additional Information:**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**Disclaimer:**

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**\*\*\*END OF MSDS\*\*\***