
Section 01 - Identification

Product Identifier	Methanol
Other Means of Identification	Methyl hydrate, wood spirit, methyl hydroxide.
Product Use and Restrictions on Use	Solvent, fuel, chemical feedstock.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
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Section 02 - Hazard Identification

GHS-Classification

Acute Toxicity-Oral	Category 3
Acute Toxicity-Dermal	Category 3
Acute Toxicity-Inhalation	Category 3
STOT-Single Exposure	Category 1

Physical Hazards

Flammable Liquid	Category 2
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Danger

Hazard Statements

H225 – Highly flammable liquid and vapour.
H301 – Toxic if swallowed.
H311 – Toxic in contact with skin.
H331 – Toxic if inhaled.
H370 – Causes damage to organs.

Pictograms



Precautionary Statements

P403 + P235 – Store in a well-ventilated place. Keep cool.

P405 – Store locked up.

P233 – Keep container tightly closed.

P271 – Use only outdoors or in a well-ventilated area.

P210 – Keep away from heat, sparks, open flames, and hot surfaces. — No smoking.

P240 – Ground/bond container and receiving equipment.

P241 – Use explosion-proof electrical, ventilating, lighting, and equipment.

P242 – Use only non-sparking tools.

P243 – Take precautionary measures against static discharge.

P370 + P378 – In case of fire: For small fires use dry chemical, carbon dioxide or water spray. For larger fires use water spray or aqueous film forming foam with 3% or 6% foam proportioning system for extinction.

P280 – Wear protective gloves, protective clothing, eye protection, and face protection

P270 – Do not eat, drink or smoke when using this product.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin

P264 – Wash hands thoroughly after handling.

P301 + P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P330 – Rinse mouth.

P260 – Do not breathe mist, vapours or spray.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P307 + P311 – IF exposed: Call a POISON CENTER or doctor/physician.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Methanol	67-56-1	99-100%	
Water	7732-18-5	≤1%	

Section 04 - First Aid Measures

Inhalation

Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek medical attention.

Skin Contact / Absorption

Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.

Eye Contact

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 30 minutes, while holding the eyelid(s) open. If a contact lens is present, remove only if easy to do so. Seek medical attention.

Ingestion

If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Have victim rinse mouth with water. Seek immediate medical attention.

Additional Information

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 50mg/100mL is an indication for

hemodialysis, which has improved the prognosis of methanol intoxication. If more than 2.0 mL/kg has been ingested, vomiting should be induced with supervision.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog. Water may be effective for cooling, but may not cool methanol below its flash point.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	During a fire, carbon monoxide, carbon dioxide and irritating and toxic gases such as formaldehyde may be generated. Can accumulate in confined spaces, resulting in a toxicity and flammability hazard. Closed containers may rupture violently.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.
Environmental Precautions	Prevent material from entering sewers, waterways or confined spaces.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 - Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Equipment used to transfer product must be grounded to avoid static discharge.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated, flammable liquid storage area or cabinet. Keep container tightly closed, and away from incompatible materials. Storage tanks must be grounded and vented with vapor emission controls.
Incompatibilities	Oxidizing agents, acids, hydrogen peroxide, metals, carbon tetrachloride, acetyl bromide, dichloromethane, perchloric acid or metal perchlorates, potassium tert-butoxide, alkylaluminum solutions, beryllium hydride, cyanuric chloride, isocyanates, phosphorus oxide, diethyl zinc.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Methanol	ACGIH	TWA	200ppm (skin)
	ACGIH	STEL	250ppm (skin)
	OSHA	TWA	200ppm (skin)
	OSHA	STEL	250ppm (skin)
	IDHL		6000ppm

Engineering Control(s)

Ventilation Requirements

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face

Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection

Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection

Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

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 up to 2000ppm:

Use full facepiece supplied-air respirator

For concentrations up to 5000ppm:

Use full facepiece supplied-air respirator operated in continuous mode

For concentrations up to 6000ppm:

Use supplied air respirator with a tight-fitting facepiece operated in a continuous-flow mode; or full facepiece self-contained breathing apparatus or full facepiece supplied air respirator.

For unknown concentrations or IDLH conditions:

Use positive pressure, full-facepiece self-contained breathing apparatus; or positive pressure, full-facepiece supplied air respirator with an auxiliary positive pressure self-contained breathing apparatus.

Thermal Hazards

Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State

Liquid

Colour

Colourless

Odour

Faint alcohol-like odour

Odour Threshold

Not Available

Property

pH

Not Available

Melting Point/Freezing Point

-97.7°C

Initial Boiling Point and Boiling Range

64.7°C

Flash Point	11.1°C (closed cup)
Evaporation Rate	4.1 (n-butyl acetate = 1)
Flammability	Flammable liquid
Upper Flammable Limit	36%
Lower Flammable Limit	6%
Vapour Pressure (mm Hg, 20°C)	98mmHg
Vapour Density (Air=1)	1.1
Relative Density	Not Available
Solubility(ies)	Miscible
Partition Coefficient: n-octanol/water	Log P _{OW} = -0.77
Auto-ignition Temperature	385°C
Decomposition Temperature	Not Available
Viscosity	0.59cP at 20°C
Explosive Properties	Vapours may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode. Mixtures with oxidizers may explode.
Specific Gravity (Water=1)	0.791 at 20°C, 0.787 at 25°C
% Volatiles by Volume	100%
Formula	CH ₃ OH
Molecular Weight	32.04

Section 10 - Stability and Reactivity

Reactivity	Not Available
Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None known.
Conditions to Avoid	Heat, open flames, static discharge, sparks or other ignition sources.
Incompatible Materials	Oxidizing agents, acids, hydrogen peroxide, metals, carbon tetrachloride, acetyl bromide, dichloromethane, perchloric acid or metal perchlorates, potassium tert-butoxide, alkylaluminum solutions, beryllium hydride, cyanuric chloride, isocyanates, phosphorus oxide, diethyl zinc.
Hazardous Decomposition Products	Decompositions products are carbon monoxide, formaldehyde and carbon dioxide.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD ₅₀	Dermal LD ₅₀	LC ₅₀
Methanol	5628 mg/kg (rat)	15,800 mg/kg (rabbit)	87.5mg/l (rat, 6hr)

Chronic Toxicity – Carcinogenicity

Component

IARC

Methanol

Not considered to be carcinogenic.

Skin Corrosion/Irritation	Not Available
Serious Eye Damage/Irritation	Moderate eye irritant.
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.
Inhalation	Inhalation of high airborne concentrations can irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and death.
Respiratory or Skin Sensitization	Not reported as human respiratory sensitizer.
Germ Cell Mutagenicity	There is insufficient information available to conclude that methanol is mutagenic.
Reproductive Toxicity	Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations that did not produce significant maternal toxicity.
STOT-Single Exposure	Can cause damage to the optic nerve and central nervous system.
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Not Available
Synergistic Materials	In animals, high concentrations of methanol can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly decreases the toxicity of methanol, because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning.

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Methanol	EC ₅₀ (Green algae, 48hr): 60.4mg/L	LC ₅₀ (Lepomis macrochirus, 96 hrs): 15,400mg/L	EC ₅₀ (Daphnia magna, 24 hrs): >10,000mg/L
Biodegradability	This material is expected to readily breakdown to carbon dioxide and water.		
Bioaccumulation	Not Available		
Mobility	Will not adsorb on soil.		
Other Adverse Effects	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.		

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

UN Number	UN 1230
UN Proper Shipping Name	Methanol
Transport Hazard Class(es)	3 (6.1)
Packaging Group	II
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available
Additional Information	<u>Packing Group</u> <u>Limited Quantity Index</u>
	II 1 L

TDG

Other Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 - Other Information

Preparation Date August 7, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

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If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA

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