








Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Personal Protective Equipment
 	Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class D-1B: Material causing immediate and serious toxic effects (TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC). Class D-2B: Material causing other toxic effects (TOXIC).	  

Section 1. Product and Company Identification

Product Name / Trade name	Methanol	Associated Product's Item Code	METHANOL
Synonym	Wood alcohol	CAS #	67-56-1
Chemical Family	Alcohol. (Solvent.)	Validation Date	2/19/2004.
Chemical Formula	CH ₃ OH	Print Date	2/19/2004.
Manufacturer	Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550	In Case of Emergency	Recochem Inc. Communications and Regulatory Affairs Department (905) 791-1788
Material Uses	Other non specified industry: Solvent. Fuel. Antifreeze for fuels.		

Section 2. Hazardous Ingredients

Name	CAS #	% by Weight	Exposure Limits	
			Canadian Values (ACGIH)	U.S. Values (OSHA)
Methanol	67-56-1	100	ACGIH (Canada, 2003). Skin TWA: 200 ppm 8 hour(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m ³ 8 hour(s). STEL: 328 mg/m ³ 15 minute(s).	Methano TWA: 200 ppm from OSHA (United States, 1999). Period: 8 hour(s). Additional hazards: Skin TWA: 260 mg/m ³ from OSHA (United States, 1999). Period: 8 hour(s). Additional hazards: Skin

Section 3. Hazard Identification

Emergency Overview	DANGER! POISON. FLAMMABLE. VAPOUR MAY CAUSE NEAR INVISIBLE FLASH FIRE. MAY BE FATAL IF SWALLOWED. Keep away from heat, sparks and flame. Do not ingest. Avoid breathing vapour or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Potential Acute Health Effects	See Section #11: "Toxicological Information" for further human health effects. Extremely hazardous in case of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant). Non-sensitizer for skin. Severe over-exposure can result in death.
Note 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 hospitals is recommended.

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Section 4. First Aid Measures

Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention.
Skin Contact	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, get medical attention. Wash contaminated clothing before reusing.
Inhalation	Allow the victim to rest in a well ventilated area. Seek medical advice.
Ingestion	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. SEEK IMMEDIATE MEDICAL ATTENTION.

Section 5. Fire Fighting Measures

Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , alcohol foam or water spray. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosion.
Fire Hazards	Explosive in the form of vapour when exposed to heat or flame. Vapour may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes.
Explosion Hazards	Highly flammable liquid and vapour.

Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill and Leak	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Place in appropriate container and dispose of in accordance with regional regulations.

Section 7. Handling and Storage

Handling	Handle and open container with care. Avoid all possible sources of ignition (spark or flame). After handling, always wash hands thoroughly with soap and water.
Storage	See Section #10 for applicable incompatible materials. Store and use away from heat, sparks, open flame, or any other ignition source. Keep away from sources of ignition. Keep away from incompatibles. Keep in a cool, well-ventilated place.

Section 8. Exposure Controls, Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	
<i>Eyes</i>	Splash goggles.
<i>Body</i>	No special protective clothing is required.
<i>Respiratory</i>	Organic vapour cartridge respirator.
<i>Hands</i>	Gloves (impervious).

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odour	Alcohol.
Molecular Weight	32.04 g/mole	Taste	Not available.
pH (1% Soln/Water)	7 [Neutral.]	Colour	Colourless.
Boiling/Condensation Point	64.5°C (148.1°F)	Volatility	100% (v/v).
Melting/Freezing Point	-98°C (-144°F)	Evaporation Rate	2.1 compared to Butyl acetate.
Specific Gravity	0.79 (Water = 1)	Odour Threshold	2000 ppm
Vapour Pressure	96 mm of Hg @ 20°C.	Viscosity	Not available.
Vapour Density	1.11 (Air = 1)	Solubility	Soluble in water, diethyl ether.
VOC Content	790 (g/l).	Other Properties	Not available.
The Product is:	Flammable.		
Auto-ignition Temperature	385°C (725°F)		
Flash Point	CLOSED CUP: 11°C (51.8°F). (Tagliabue.)		
Flammable Limits	LOWER: 6% UPPER: 36%		
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat, of combustible materials.		

Section 10. Stability and Reactivity

Stability	The product is stable.
Conditions of Instability	No additional remark.
Incompatibility with Various Substances	Slightly reactive to reactive with oxidizing agents, acids, alkalis.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 5600-13000 mg/kg [Rat] Acute dermal toxicity (LD50): 15840 mg/kg [Rabbit] Acute toxicity of the vapor (LC50): 64000 ppm 4 hours [Rat.]
Acute Effects on Humans	
Eyes	Slightly hazardous in case of eye contact (irritant).
Skin	Very slightly to slightly dangerous in case of skin contact (irritant, permeator). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Inhalation	Hazardous in case of inhalation.
Ingestion	Extremely hazardous in case of ingestion. May be fatal if swallowed. Ingestion may cause blindness.

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Chronic Effects on Humans	<p>Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin.</p> <p>CARCINOGENIC EFFECTS: Classified A5 (not suspected for human) by ACGIH, 4 (probably not for human) by IARC, none, by OSHA.</p> <p>MUTAGENIC EFFECTS: Not available.</p> <p>TERATOGENIC EFFECTS: Teratogenic in mice at levels below maternal toxicity.</p> <p>DEVELOPMENTAL TOXICITY: Fetotoxic in mice at levels below maternal toxicity.</p> <p>Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</p>
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Section 12. Ecological Information

Ecotoxicity	<p>For accidental discharges into environment, see Section #6: "Accidental Release Measures" for suggested instructions.</p> <p>No additional information.</p>
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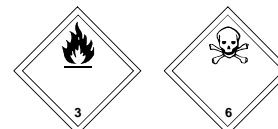
Section 13. Disposal Considerations

Waste Information	Waste must be disposed of in accordance with federal, state or provincial and local environmental control regulations.
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Section 14. Transport Information

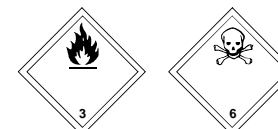
Canada Transportation of Dangerous Goods (TDG) Information

Primary Class	Class 3: Flammable liquid.
Subsidiary Class (if applicable)	Class 6.1: Toxic substance.
Proper shipping name	Methanol
Hazard Identification Number	UN 1230
Packing Group	II
Special Provisions	<p>In containers of 1 L capacity or less this product is classified as a "Consumer Commodity" under TDG regulations.</p> <p>Labels required: Flammable Liquid and orientation arrows up.</p>



International Maritime Dangerous Goods (IMDG) Transportation Information

Primary Class	Class 3: Flammable liquid.
Subsidiary Class (if applicable)	Class 6.1: Toxic substance.
Proper shipping name	Methanol
Hazard Identification Number	UN 1230
Packing Group	II
Marine Pollutant	Not pollutant.
Special Provisions	<p>In containers of 1 L capacity or less this product is classified as a "Limited Quantity" under IMDG regulations, in accordance with chapter 3.4 Limited quantities section of IMDG code.</p>



United States Department of Transportation (DOT) Information



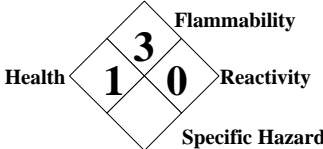
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Packing Group	II	
Special Provisions	Containers of 1 L or less ship as: Class: ORM-D Name: Consumer Commodity	
International Air Transport Association (IATA)	For air shipment classification and associated regulations, please refer to the latest edition of IATA Dangerous Goods Regulations.	

Section 15. Other Regulatory Information and Pictograms

WHMIS Classification (Canada)	Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class D-1B: Material causing immediate and serious toxic effects (TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC). Class D-2B: Material causing other toxic effects (TOXIC).	 								
Canada Domestic Substances List (DSL) Status	This product and/ or all of its components are on the DSL.									
HCS Classification (U.S.A.)	Class: Highly toxic. Class: Flammable liquid having a flash point lower than 37.8°C (100°F).									
U.S.A. Regulatory Lists	This product and/ or all of its components are on the TSCA inventory list.									
Hazardous Material Information System (U.S.A.)	<table border="1"> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Flammability</td> <td>3</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td>G</td> </tr> </table>	Health	1	Flammability	3	Reactivity	0	Personal Protection	G	National Fire Protection Association (U.S.A.) 
Health	1									
Flammability	3									
Reactivity	0									
Personal Protection	G									

Section 16. Other Information

Validated and verified by Product Development and Technical Coordinator on 2/19/2004.

Printed 2/19/2004.

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS are available at www.recochem.com