








# Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Personal protective equipment
 	Class B-2: Flammable liquid 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

<b>Product name / Trade name</b>	<b>Methanol</b>	<b>Associated Product's Item Code</b>	<b>methanol</b>
<b>Synonym</b>	alcool methylique (french); alcool metilico (italian); carbinol; colonial spirit; columbian spirit; columbian spirits (dot); methanol (dot); metanolo (italian); methyl alcohol; methyl alcohol (dot); methylol; methylalkohol (german); methyl hydroxide; metylowy alkohol (polish); monohydroxymethane; pyroxylic spirit; wood alcohol; wood naphtha; wood spirit	<b>CAS #</b>	67-56-1
<b>Chemical family</b>	Alcohol. (Solvent.)	<b>Validation date</b>	1/09/2012.
<b>Chemical formula</b>	C-H4-O	<b>Print date</b>	1/18/2012.
<b>Manufacturer/Supplier</b>	Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550	<b>In case of emergency</b>	Recochem Inc. Communications and Regulatory Affairs Department (905) 878-5544
<b>Material uses</b>	Other non-specified industry: MANUFACTURE OF FORMALDEHYDE AND DIMETHYL TEREPHTHALATE; CHEMICAL SYNTHESIS (METHY AMINES, METHYL CHLORIDE, METHYL METHACRYLATE, AUTOMOTIVE FUELS); ANTIFREEZE; SOLVENT FOR NITROCELLULOSE, ETHYLCELLULOSE, POLYVINYL BUTYRAL, SHELLAC, ROSIN, MANILA RESIN, DYES; DENATURANT FOR ETHYL ALCOHOL; DEHYDRATOR FOR NATURAL GAS; FUEL FOR UTILITY PLANTS (METHYL FUEL); FEEDSTOCK FOR MANUFACTURE OF SYNTHETIC PROTEINS BY CONTINUOUS FERMENTATION; SOURCE OF HYDROGEN FOR FUEL CELLS; HOME HEATING OIL EXTENDER.		

## Section 2. Hazards identification

<b>Emergency Overview</b>	WARNING! FLAMMABLE LIQUID AND VAPOR. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. Flammable liquid. Keep away from heat, sparks and flame. Avoid breathing vapor or mist. Avoid contact with skin and clothing. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.
<b>Potential Acute Health Effects</b>	<b>See section 11 for more detailed information on health effects and symptoms.</b>  Extremely hazardous by the following route of exposure: of ingestion. Hazardous by the following route of exposure: of inhalation. Slightly hazardous by the following route of exposure: of skin contact (irritant, permeator), of eye contact (irritant). Non-sensitizer to skin. Severe over-exposure can result in death.

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**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.

**Section 3. Composition, information on ingredients****Canada**

Name	CAS number	Conc. (% w/w)
Methanol	67-56-1	100

There are no other ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

**Section 4. First aid measures**

<b>Eye contact</b>	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 30 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
<b>Skin contact</b>	In case of contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
<b>Inhalation</b>	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Ingestion</b>	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Notes to physician</b>	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Section 5. Fire-fighting measures**

<b>Products of combustion</b>	Decomposition products may include the following materials: carbon dioxide carbon monoxide
<b>Fire-fighting media and instructions</b>	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Fire Hazards</b>	Explosive in the form of vapor when exposed to heat or flame. Vapor may travel a considerable distance to source of ignition and flash back. Emits acrid smoke and irritating fumes when heated to decomposition.
<b>Explosion Hazards</b>	Highly flammable liquid and vapor.

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**Section 6. Accidental release measures**

<b>Small spill and leak</b>	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
<b>Large spill and leak</b>	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

**Section 7. Handling and Storage**

<b>Handling</b>	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Storage</b>	Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

**Section 8. Exposure controls/personal protection**

<b>Engineering controls</b>	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
<b>Personal protection</b>	<p><i>Eyes</i> Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles Possible: face shield</p> <p><i>Body</i> Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</p> <p><i>Respiratory</i> Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.</p>

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**Hands** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): nitrile rubber

**United States****Product name**

Methanol

**Exposure limits****ACGIH TLV (United States, 1/2008). Absorbed through skin.**

TWA: 200 ppm 8 hour(s).

TWA: 262 mg/m<sup>3</sup> 8 hour(s).

STEL: 250 ppm 15 minute(s).

STEL: 328 mg/m<sup>3</sup> 15 minute(s).**OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.**

TWA: 200 ppm 8 hour(s).

TWA: 260 mg/m<sup>3</sup> 8 hour(s).

STEL: 250 ppm 15 minute(s).

STEL: 325 mg/m<sup>3</sup> 15 minute(s).**NIOSH REL (United States, 6/2008). Absorbed through skin.**

TWA: 200 ppm 10 hour(s).

TWA: 260 mg/m<sup>3</sup> 10 hour(s).

STEL: 250 ppm 15 minute(s).

STEL: 325 mg/m<sup>3</sup> 15 minute(s).**OSHA PEL (United States, 11/2006).**

TWA: 200 ppm 8 hour(s).

TWA: 260 mg/m<sup>3</sup> 8 hour(s).**Canada****Occupational exposure limits**

Ingredient	List name	TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
		ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	
Methanol	US ACGIH 1/2008	200	262	-	250	328	-	-	-	-	[1]
	AB 6/2008	200	262	-	250	328	-	-	-	-	[1]
	BC 6/2008	200	-	-	250	-	-	-	-	-	[1]
	ON 6/2008	200	260	-	250	325	-	-	-	-	[1]
	QC 6/2008	200	262	-	250	328	-	-	-	-	[1]

[1] Absorbed through skin.

**Section 9. Physical and chemical properties**

<b>Physical State and Appearance</b>	Liquid.	<b>Odour</b>	FAINTLY SWEET; CHARACTERISTIC PUNGENT [Slight]
<b>Molecular weight</b>	32.05 g/mole	<b>Taste</b>	Not available.
<b>pH</b>	7	<b>Colour</b>	Colorless.
<b>Boiling/condensation point</b>	64.5°C (148.1°F)	<b>Volatility</b>	100% (v/v)
<b>Melting/freezing point</b>	-98°C (-144°F)	<b>Evaporation rate</b>	2.1 compared to butyl acetate
<b>Relative density</b>	0.792	<b>Odour Threshold</b>	2000 ppm
<b>Vapor pressure</b>	96 mm of Hg @ 20°C.	<b>Viscosity</b>	Not available.

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<b>Vapour Density</b>	1.11 [Air = 1]	<b>Solubility</b>	Soluble in water, diethyl ether.
<b>VOC content</b>	100 % (w/w)	<b>Other Properties</b>	Not available.
<b>The product is:</b>	Flammable.		
<b>Auto-ignition temperature</b>	385°C (725°F)		
<b>Flash point</b>	Closed cup: 11°C (51.8°F) [Tagliabue.] Open cup: 15.85°C (60.5°F)		
<b>Flammable limits</b>	Lower: 6% Upper: 36%		
<b>Fire hazards in the presence of various substances</b>	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Non-flammable in the presence of the following materials or conditions: heat and shocks and mechanical impacts. Explosive in the form of vapor when exposed to heat or flame. Vapor may travel a considerable distance to source of ignition and flash back. Emits acrid smoke and irritating fumes when heated to decomposition.		

### Section 10. Stability and reactivity

<b>Stability</b>	The product is stable.
<b>Conditions of instability</b>	No additional remark.
<b>Incompatibility with various substances</b>	Slightly reactive to reactive with oxidizing agents, acids, alkalis.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### Section 11. Toxicological Information

<b>Canada</b>						
<b>Acute toxicity</b>						
<b>Product/ingredient name</b>	<b>Result</b>	<b>Species</b>	<b>Dose</b>	<b>Exposure</b>		
Methanol	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours		
	LD50 Dermal	Rabbit	15800 mg/kg	-		
	LD50 Oral	Rat	5600 mg/kg	-		
<b>Conclusion/Summary</b>	Not available.					
<b>Chronic toxicity</b>						
<b>Conclusion/Summary</b>	Not available.					
<b>Carcinogenicity</b>						
<b>Conclusion/Summary</b>	May be fatal or cause blindness if swallowed. Chronic Exposure Effects can include one or all of the following: Acute poisoning, headaches, nausea, vomiting, unconsciousness, kidney and liver damage. Exposure can cause dermatitis.					
<b>Classification</b>						
<b>Product/ingredient name</b>	<b>ACGIH</b>	<b>IARC</b>	<b>EPA</b>	<b>NIOSH</b>	<b>NTP</b>	<b>OSHA</b>
Methanol	A5	4	-	-	-	None.

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**Mutagenicity****Conclusion/Summary** : Not available.**Teratogenicity****Conclusion/Summary** : Not available.**Reproductive Toxicity****Conclusion/Summary** : Not available.**DLH**

: 6000 ppm

**Section 12. Ecological information**

For accidental discharges into the environment, see Section 6: "Accidental Release Measures" for suggested instructions.

**Ecotoxicity** : Readily biodegradable**Canada****Aquatic ecotoxicity**

Product/ingredient name	Result	Species	Exposure
Methanol	Acute LC50 2500000 ug/L Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 3289 to 4395 mg/L Fresh water	Daphnia - Daphnia magna - Neonate - <24 hours	48 hours
	Acute LC50 >100000 ug/L Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g	96 hours

**Conclusion/Summary** : Not available.**Biodegradability****Conclusion/Summary** : Not available.**Section 13. Disposal considerations****Waste information**

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

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### Section 14. Transport information

#### Canada TDG Classification

<b>Class</b>	Class 3: Flammable liquid.
<b>Subsidiary class</b>	Class 6.1: Toxic substance.
<b>Proper Shipping Name (Canada) TDG</b>	METHANOL
<b>UN number</b>	UN1230
<b>Packing Group</b>	II
<b>Special provisions</b>	43



#### IMDG Classification

<b>Class</b>	Class 3: Flammable liquid.
<b>Subsidiary class</b>	Class 6.1: Toxic substance.
<b>Proper Shipping Name IMDG</b>	METHANOL
<b>UN number</b>	UN1230
<b>Packing Group</b>	II
<b>Marine pollutant</b>	Not a pollutant.
<b>Special provisions</b>	<b>Emergency schedules (EmS)</b> 3-06



No placard (handling and hazard label) required.

#### **Remarks**

In containers of 1 L (1Kg) capacity or less this product is classified as a "Limited Quantity" under IMDG regulations

#### United States DOT (Classification)

<b>Class</b>	Class 3: Flammable liquid.
<b>Subsidiary class</b>	Class 6.1: Toxic substance.
<b>Proper Shipping Name (United States) DOT</b>	METHANOL
<b>UN number</b>	UN1230
<b>Packing Group</b>	II
<b>Special provisions</b>	IB2, T7, TP2



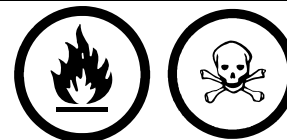
#### International Air Transport Association (IATA)

For air shipment classification and associated regulations, please refer to the latest edition of IATA Dangerous Goods Regulations.

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**Section 15. Regulatory information****WHMIS Classification (Canada)**

Class B-2: Flammable liquid  
 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.)**

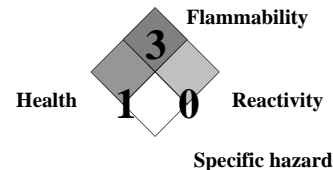
Flammable liquid  
 Target organ effects

**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.)**

Health	1
Flammability	3
Reactivity	0
Personal protection	B

**National Fire Protection Association (U.S.A.)****Section 16. Other information**

Validated and verified by Compliance and Technical Information Manager on 1/09/2012 ph.# 905-878-5544.

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**Notice to reader**

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**MSDS are available at [www.recochem.com](http://www.recochem.com)**