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

Product name / Trade name	Methyl Hydrate	**Associated Product's Item Code**	13-390
Synonym	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	**CAS #**	67-56-1
Chemical family	Alcohol. (Solvent.)	**Validation date**	Feb. 12 2009
Chemical formula	C-H4-O	**Print date**	Feb. 12 2009
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: MANUFACTURE OF FORMALDEHYDE AND DIMETHYL TEREPHTHALATE; CHEMICAL SYNTHESIS (METHYL 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

Emergency Overview

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.

Potential Acute Health Effects

See section 11 for more detailed information on health effects and symptoms.

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.

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 3. Composition, information on ingredients

Canada

Name	**CAS number**	**%**
methanol	67-56-1	100

There are no ingredients or additional 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

Eye contact	Immediately flush eyes with plenty of water for at least 60 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire fighting measures

Products of combustion	Decomposition products may include the following materials: carbon oxides
Fire-fighting media and instructions	Use dry chemical, CO_2, water spray (fog) or foam.
Fire Hazards	Explosive in the form of vapour 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.
Explosion Hazards	Highly flammable liquid and vapour.

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Section 6. Accidental release measures

Small spill and leak	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or 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.
Large spill and leak	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

Handling	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 breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.
Storage	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

Engineering controls	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.
Personal protection	
Eyes	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, gases or dusts. Recommended: splash goggles
Body	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.
Respiratory	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.
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

Product name	**Exposure limits**
Canada	

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methanol

CA Alberta Provincial (Canada, 10/2006). Skin
8 hrs OEL: 262 mg/m³ 8 hour(s).
8 hrs OEL: 200 ppm 8 hour(s).
15 min OEL: 250 ppm 15 minute(s).
15 min OEL: 328 mg/m³ 15 minute(s).
CA British Columbia Provincial (Canada, 7/2007). Skin
TWA: 200 ppm 8 hour(s).
STEL: 250 ppm 15 minute(s).
CA Ontario Provincial (Canada, 3/2007). Skin
TWAEV: 200 ppm 8 hour(s).
TWAEV: 260 mg/m³ 8 hour(s).
STEV: 250 ppm 15 minute(s).
STEV: 325 mg/m³ 15 minute(s).
CA Quebec Provincial (Canada, 12/2006). Skin
TWAEV: 200 ppm 8 hour(s).
TWAEV: 262 mg/m³ 8 hour(s).
STEV: 250 ppm 15 minute(s).
STEV: 328 mg/m³ 15 minute(s).

United States

methanol

ACGIH TLV (United States, 1/2007). Skin
TWA: 200 ppm 8 hour(s).
TWA: 262 mg/m³ 8 hour(s).
STEL: 250 ppm 15 minute(s).
STEL: 328 mg/m³ 15 minute(s).
OSHA PEL 1989 (United States, 3/1989). Skin
TWA: 200 ppm 8 hour(s).
TWA: 260 mg/m³ 8 hour(s).
STEL: 250 ppm 15 minute(s).
STEL: 325 mg/m³ 15 minute(s).
NIOSH REL (United States, 12/2001). Skin
TWA: 200 ppm 10 hour(s).
TWA: 260 mg/m³ 10 hour(s).
STEL: 250 ppm 15 minute(s).
STEL: 325 mg/m³ 15 minute(s).
OSHA PEL (United States, 11/2006).
TWA: 200 ppm 8 hour(s).
TWA: 260 mg/m³ 8 hour(s).

Section 9. Physical and chemical properties

Physical State and Appearance	Liquid.	**Odour**	FAINTLY SWEET; CHARACTERISTIC PUNGENT [Slight]
Molecular weight	32.05 g/mole	**Taste**	Not available.
pH	7	**Colour**	Colorless.
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.

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Relative density	0.792	**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	100 (%)	**Other Properties**	Not available.

The product is:	Flammable.
Auto-ignition temperature	464°C (867.2°F)
Flash Point	Closed cup: 11°C (51.8°F) [Tagliabue.] Open cup: 15.85°C (60.5°F)
Flammable limits	Lower: 6% Upper: 36%
Fire hazards in the presence of various substances	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 vapour 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

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

Section 11. Toxicological Information

Canada

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	LD50 Dermal	Rabbit	15840 mg/kg	-
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Intraperitoneal	Rat	7529 mg/kg	-
	LD50 Intravenous	Rat	2131 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
	TDLo Oral	Rat	8 g/kg	-
	TDLo Intraperitoneal	Rat	3490 mg/kg	-
	TDLo Intraperitoneal	Rat	3000 mg/kg	-
	TDLo Oral	Rat	3 g/kg	-
	TDLo Oral	Rat	3500 mg/kg	-

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Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : 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.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
methanol	A5	4	-	-	-	None.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

IDLH : 6000 ppm

Section 12. Ecological information

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

Environmental effects : No known significant effects or critical hazards.

Canada

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
methanol	-	Acute EC50 22200 to 23400 mg/L Fresh water	Daphnia - Daphnia obtusa	48 hours
	-	Acute EC50 24500000 to 29350000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute EC50 13000000 to 13400000 ug/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
	-	Acute EC50 12700000 to 13700000 ug/L Fresh water	Fish - Lepomis macrochirus	96 hours
	-	Acute EC50 >10000000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 15400000 to	Fish - Lepomis macrochirus	96 hours

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		17600000 ug/L Fresh water		
	-	Acute LC50 19 to 20 ml/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
	-	Acute LC50 3289 to 4395 mg/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 10000000 to 33000000 ug/L Marine water	Fish - Agonus cataphractus	96 hours
	-	Acute LC50 20100000 to 20700000 ug/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
	-	Acute LC50 >100000 ug/L Fresh water	Fish - Pimephales promelas	96 hours
	-	Acute LC50 28200000 ug/L Fresh water	Fish - Pimephales promelas	96 hours
	-	Acute LC50 28000000 ug/L Marine water	Fish - Alburnus alburnus	96 hours
	-	Acute LC50 >28000000 ug/L Marine water	Fish - Alburnus alburnus	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. 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	
Class	Class 3: Flammable liquid.
Subsidiary class	Class 6.1: Toxic substance.
Proper Shipping Name (Canada) TDG	METHANOL
UN number	UN1230
Packing Group	II
Special provisions	In containers of 1 L (1Kg) capacity or less this product is classified as a "Limited Quantities""Consumer Commodity" under TDG regulations.

IMDG Classification	
Class	Class 3: Flammable liquid.
Subsidiary class	Class 6.1: Toxic substance.
Proper Shipping Name IMDG	METHANOL
UN number	UN1230
Packing Group	II
Marine pollutant	Not a pollutant.
Special provisions	**Emergency schedules (EmS)** 3-06 **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)	
Class	Class 3: Flammable liquid.
Subsidiary class	Class 6.1: Toxic substance.
Proper Shipping Name (United States) DOT	METHANOL
UN number	UN1230
Packing Group	II
Special provisions	In containers of 1 L (1Kg) this product is qualified as a "consumer commodity" ORM-D under DOT

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

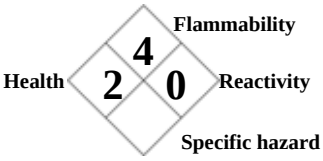
WHMIS Classification (Canada)	Class B-2: Flammable liquid Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).
Canada Domestic Substances List (DSL) Status	This 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	2
Flammability	4
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 Feb. 12 2009 **ph.# 905-791-1788.**

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MSDS are available at www.recochem.com