SAFETY DATA SHEET

401-0
METHYL HYDRATE

Preparation Date: 20/Aug/2018 Version: 3

1. IDENTIFICATION

Product identifier

Product Name METHYL HYDRATE

Other means of identification

Product Code(s) 401-0

Synonyms Methyl hydrate, Wood spirit, Methyl hydroxide.

Recommended use of the chemical and restrictions on use

Recommended Use Solvent, fuel, feedstock

Restricted Uses No information available

Initial Supplier Identifier
MF Paints
1605 Dagenais blvd. West
Laval, QC H7L 5A3
Telephone: 1-800-363-8034

Emergency telephone number

24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

Flammable liquids	Category 2
Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1

Label elements

Hazard pictograms

Signal Word: Danger

Hazard statements
Highly flammable liquid and vapor
Toxic if swallowed, in contact with skin or if inhaled
Causes serious eye irritation
May damage fertility or the unborn child
Causes damage to organs

Precautionary Statements

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Ground and bond container and receiving equipment
Use non-sparking tools
Take action to prevent static discharges
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Use explosion-proof electrical/ ventilating / lighting/ equipment

Response
Specific treatment (see first aid instructions on label)
IF exposed or concerned: Call a POISON CENTER or doctor
Take off immediately all contaminated clothing and wash it before reuse
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Call a POISON CENTER or doctor if you feel unwell
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Call a POISON CENTER or doctor
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Rinse mouth

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage
Store locked up

Keep cool
Store in a well-ventilated place. Keep container tightly closed

Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No	Weight-%	Synonyms
Methanol	67-56-1	90 - 100%	Methanol

4. FIRST AID

Description of first aid measures

General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation
Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider
Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed:
Ingestion of as little as 10 ml of methanol can cause blindness and 30 ml (1 ounce) can cause death if victim is not treated. Ingestion causes mild central nervous system (CNS) depression with nausea, headache, vomiting, dizziness, incoordination and an appearance of drunkenness. Metabolic acidosis and severe visual effects can occur following an 8-24 hour latent period. Coma and death, usually due to respiratory failure, may occur if medical treatment is not received. Visual effects may include reduced reactivity and/or increased sensitivity to light, blurred, double and/or snowy vision, and blindness. May be absorbed through the skin in toxic or lethal amounts. Prolonged or repeated exposure may cause skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Indication of any immediate medical attention and special treatment needed:

Note to physicians

Treat symptomatically. The severity of outcome following methanol ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested. Therefore, there is a need for rapid treatment of any ingestion exposure. Antidote is fomepizole which enhances elimination of metabolic formic acid. This must be administered by a trained medical professional only. For specialist advice physicians should contact the Poison Control Centre.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Small fires: Dry chemical, CO2, water spray Large fires: Water spray(see note in Unsuitable Extinguishing Media), AFFF(R) (Aqueous Film Forming Foam (alcohol resistant)) type with a 3% foam proportioning system.

Unsuitable Extinguishing Media: General purpose synthetic foams or protein foams may work, but much less effectively. Water may be effective for cooling, but may not be effective for extinguishing a fire because it may not cool methanol below its flash point.

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the substance or mixture
Flammable Liquid. Stay upwind. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations. Methanol burns with a clean clear flame that is almost invisible in daylight. Isolate and restrict area access. Concentrations of greater than 20% 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. Closed containers may rupture violently or explode and suddenly release large amounts of product when exposed to fire or excessive heat for a sufficient period of time.

Hazardous combustion products
Carbon monoxide. Carbon dioxide. formaldehyde.

Special protective equipment for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Environmental precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up

Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Flammable. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Tanks must be grounded and vented and should have vapor emission controls. Tanks must be diked. Packaging materials: SUITABLE MATERIAL: Steel. Stainless steel. Iron. Glass. MATERIAL TO AVOID: Lead. Aluminum. zinc. Polyethylene. PVC.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits .

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Methanol 67-56-1	TWA: 200 ppm TWA: 262 mg/m^3 STEL: 250 ppm STEL: 328 mg/m^3 Skin	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm TWA: 262 mg/m^3 STEL: 250 ppm STEL: 328 mg/m^3 Skin	250 ppm STEL 200 ppm TLV-TWA	6000 ppm

Consult local authorities for recommended exposure limits

Appropriate engineering controls

Engineering controls
Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Use explosion proof equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection
Tight sealing safety goggles.

Hand protection
Appropriate chemical resistant gloves should be worn. Butyl rubber gloves. Nitrile gloves. Neoprene gloves.

Skin and body protection
Wear chemical resistant pants and jackets, preferably butyl or nitrile rubber.

Respiratory protection
NIOSH/OSHA recommendations for methanol concentrations in air:
Up to 2000 ppm: supplied air respirator

Up to 5000 ppm: supplied air respirator operated in a continuous-flow mode.
Up to 6000 ppm: 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.
Cartridge type respirators are NOT recommended.
Emergency or Planned entry into unknown concentrations or IDLH (immediately dangerous to life or health) conditions:
Respirator selection must be done by a qualified person and be based upon a risk assessment of the work activities and exposure levels. Respirators must be fit tested and users must be clean shaven where the respirator seals to the face. Exposure must be kept at or below the applicable exposure limits and the maximum use concentration of the respirator must not be exceeded.
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.

General hygiene considerations
Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Clear/ Colorless
Odor	Alcohol
Odor threshold	4.2-5960 ppm

PROPERTIES	**Values**	**Remarks • Method**
pH	Not applicable.	
Melting point / freezing point	-97.8 °C / -144.04 °F	
Initial boiling point/boiling range	64.7 °C / 148.46 °F	
Flash point	11 °C / 52 °F	Tag Closed Cup
Evaporation rate	4.1 (n-butyl acetate = 1)	
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit:	36.5	
Lower flammability limit:	6	
Vapor pressure	12.8 kPa @ 20°C	
Relative vapor density	1.105 @ 15°C	
Specific Gravity	0.791 @ 20°C	
Water solubility	Completely miscible	
Solubility in other solvents	No data available	
Partition coefficient	-0.77	
Autoignition temperature	464 °C / 867.2 °F	
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	Vapors may form explosive mixture with air.	
Oxidizing properties	Not oxidizing.	

Molecular weight	32.04 g/mol
VOC Percentage Volatility	100%
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity/Chemical Stability
Stable.

Possibility of hazardous reactions
Methanol is not compatible with gasket and O-rings materials made of Buna-N and Nitrile. May form flammable/explosive vapor-air mixture.

Hazardous polymerization
Will not occur.

Conditions to avoid
Avoid any source of ignition. Hygroscopic (absorbs moisture from the air). Incompatible materials.

Incompatible materials
Strong oxidizers. Strong mineral acids. Organic acids. Contact with these materials may cause a violent or explosive reaction. May be corrosive to lead, aluminum, magnesium, and platinum. May react with metallic aluminum or magnesium and generate hydrogen gas. May attack some forms of plastic, rubber, and coatings. Strong bases.

Hazardous decomposition products
Carbon monoxide. Carbon dioxide. formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Toxic if inhaled. Symptoms may include dizziness, headache, nausea and loss of coordination. CNS depression. Metabolic acidosis and severe visual effects can occur following an 8-24 hour latent period. Coma and death, usually due to respiratory failure, may occur if medical treatment is not received. Visual effects may include reduced reactivity and/or increased sensitivity to light, blurred, double and/or snowy vision, and blindness.

Eye contact
Causes serious eye irritation.

Skin contact
Toxic by skin contact. May be absorbed through the skin in toxic or lethal amounts. Prolonged or repeated exposure may cause skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Ingestion
Toxic if swallowed. Ingestion of as little as 10 ml of methanol can cause blindness and 30 ml (1 ounce) can cause death if victim is not treated. Ingestion causes mild central nervous system (CNS) depression with nausea, headache, vomiting, dizziness, incoordination and an appearance of drunkenness. Metabolic acidosis and severe visual effects can occur following an 8-24 hour latent period. Coma and death, usually due to respiratory failure, may occur if medical treatment is not received. Visual effects may include reduced reactivity and/or increased sensitivity to light, blurred, double and/or snowy vision, and blindness.

Information on toxicological effects

Symptoms
Repeated exposure by inhalation or absorption of methanol 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, CNS effects, lethargy, loss of consciousness and death. The effects from inhalation may be delayed. Ingestion may cause malaise, CNS effects, discomfort, and death if not treated promptly. Ingestion of methanol has resulted in adverse effects (necrosis and hemorrhaging) in the brain. Medical conditions aggravated by exposure include: skin disorders and allergies, liver disorders and eye disease. 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 CNS effects , gastrointestinal effects, anesthetic effects, damage to the optic nerve and acidosis.

Synergistic Products: In animals, high concentrations of methanol can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly reduces the toxicity of methanol because it competes for the same metabolic enzymes, and has been usd to treat methanol poisoning.

Potential for Accumulation: Methanol is readily absorbed into the body following inhalation and ingestion. Skin absorption may occur if the skin is broken or exposure is prolonged. Once absorbed, methanol is rapidly distributed to body tissues. A small amount is excreted unchanged in exhaled air and the urine. The rest is first metabolized to formaldehyde, which is then metabolized to formic acid and/or formate. The formic acid and formate are eventually converted to carbon dioxide and water. In humans, methanol clears from the body, after inhalation or oral exposure, with a half-life of 1 day or more for high doses (greater than 1000 mg/kg) or about 1.5-3 hours for low doses (less than 100 mg/kg or 76.5-230 ppm (100-300 mg/m^3)).

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	100.00 mg/kg
ATEmix (dermal)	300.00 mg/kg
ATEmix (inhalation-dust/mist)	0.50 mg/l

Unknown acute toxicity No information available

Dermal LD50 Rabbit 15800 mg/kg

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Methanol 67-56-1	= 6200 mg/kg (Rat)	Not available	= 22500 ppm (Rat) 8 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Toxic by skin contact. May be absorbed through the skin in toxic or lethal amounts. Prolonged or repeated exposure may cause skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.

Chemical Name	ACGIH	IARC	NTP	OSHA

Methanol 67-56-1	Not available	Not available	Not available	Not available

Reproductive toxicity
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. Behavioral abnormalities were observed in the offspring of rats given drinking water containing 2% methanol. Methanol has produced mutagenic effects (somatic cells) in experimental animals.

Specific target organ systemic toxicity - single exposure
Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs.

Specific target organ systemic toxicity - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
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Chemical Name	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Methanol 67-56-1	Not available	28200 mg/L LC50 (Pimephales promelas) 96 h flow-through 100 mg/L LC50 (Pimephales promelas) 96 h static 19500 - 20700 mg/L LC50 (Oncorhynchus mykiss) 96 h flow-through 18 - 20 mL/L LC50 (Oncorhynchus mykiss) 96 h static 13500 - 17600 mg/L LC50 (Lepomis macrochirus) 96 h flow-through	Not available	Not available

Persistence and degradability No information available.

Bioaccumulation No information available.

Component Information

Chemical Name	Partition coefficient
Methanol 67-56-1	-0.77

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of waste in accordance with environmental legislation. Should not be released into the environment. Dispose of in accordance with local regulations.

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

14. TRANSPORT INFORMATION

TDG (Canada):

UN Number	UN1230
Shipping name	Methanol
Class	3 (6.1)
Packing Group	II
Marine pollutant	No.

DOT (U.S.)

UN Number	UN1230
Shipping name	Methanol
Class	3 (6.1)
Packing Group	II
Marine pollutant	Not available

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Regulatory Rules

Chemical Name	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Methanol - 67-56-1	Not Listed	Listed	Listed

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA:	**Health hazards**	4	**Flammability**	3	**Instability**	0	**Physical and chemical properties** -
HMIS Health Rating:	**Health hazards**	3 *	**Flammability**	3	**Physical hazards**	0	**Personal protection** X

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Preparation Date:	20/Aug/2018
Revision Date:	20/Aug/2018

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End of Safety Data Sheet