# Safety Data Sheet - GHS
# M-HIB

Date of Revision: March 15, 2022

## Section 1 - Chemical Product and Company Identification

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|---|---|
| **Product Name** | M-HIB |
| **Synonyms** | None |
| **Product Use** | Methanol Corrosion Inhibitor |
| **Restriction on Use** | None identified |
| **Manufacturer/Supplier** | CFR Chemicals<br>38451 Range Road 22<br>County of Red Deer T4E 2N6 |
| **General Assistance** | 1 (877) 269-3419 |
| **Emergency Telephone** | **613-966-6666 (CANUTEC 24 Hour Phone Number)** |
| **Date of Preparation of SDS** | April 1, 2017 |

## Section 2 – Hazard Identification

**Signal Word** Danger

**GHS Pictogram(s)**

Hazard Statement:

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|---|---|
| H225 | Highly flammable liquid and vapour. |
| H301 +H311 +H331 | Toxic if swallowed, in contact with skin or if inhaled. |
| H370 | Causes damage to organs. |

Precautionary Statement

Prevention

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|---|---|
| P210 | Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking |
| P233 | Keep Container tightly closed. |
| P240 | Ground and bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting equipment. |
| P242 | Use non sparking tools. |
| P243 | Take action to prevent static discharges. |
| P260 | Do no breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Response

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| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. |
| P302 + P352 +P312 | IF ON SKIN: Wash with plenty of water. Call a POISON CENTRE or doctor/physician if you feel unwell. |
| P303 + P361 + P353 | IF ON SKIN (or hair) Take off immediately all contaminated clothing, rinse skin with water (or shower). |

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| P304 + P340 + P311 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor/physician. |
| P308 + P311 | IF exposed or concerned: Call a POISON CENTRE or doctor/physician. |
| P321 | Specific Treatment (see label) |
| P330 | Rinse mouth. |
| P361 + P364 | Take off immediately all contaminated clothing and wash it before reuse. |
| P370 + P378 | In case of fire: use appropriate media to extinguish. |

Storage

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| P235 | Keep Cool. |
| P403 + P233 | Store in well-ventilated place. Keep contained tightly closed. |
| P405 | Store locked up. |

Disposal

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| P501 | Dispose of contents/container to an approved waste disposal unit. |

**GHS Classification**

Flammable liquids (Category 2)
Acute Toxicity, Oral (Category 3)
Acute Toxicity, Inhalation (Category 3)
Acute Toxicity, Dermal (Category 3)
Specific target organ toxicity - single exposure (Category 1)

**HMIS Classification**

| | |
|---|---|
| **Health Hazard** | **2** |
| **Chronic Health Hazard** | ***** |
| **Flammability** | **3** |
| **Physical Hazards** | **0** |

**Potential Health Effects**

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|---|---|
| **Inhalation** | Toxic if inhaled. May cause respiratory tract irritation. |
| **Skin** | Toxic if absorbed through skin. May cause skin irritation. |
| **Eye** | May cause eye irritation. |
| **Ingestion** | Toxic if swallowed. |

## Section 3 – Composition Information on Ingredients

| HAZARDOUS INGREDIENT | Hazardous Ingredient, Synonyms | PERCENT | CAS NUMBER |
|---|---|---|---|
| Methanol | Methyl alcohol, wood alcohol, carbinol, wood spirits, methyl hydroxide, methyl hydrate | 60 - 70% | 67-56-1 |
| Isopropanol | IPA, Rubbing Alcohol, Isopropyl Alcohol | 10 - 20% | 67-63-0 |
| Benzyl alkyl pyridinyl quaternary ammonium chloride | Not Applicable | 0 - 5% | 68909-18-2 |
| Morpholine | Diethylene imidoxide, Diethylene oximide, Tetrahydro-1,4-oxazine, Tetrahydro-p-oxazine | 0 - 5% | 110-91-8 |
| Ethoxylated amine | Not Applicable | 5 - 10% | 61791-17-1 |
| Ethoxylated Nonylphenol | Not available | 1 – 3% | 9016-45-1 |
| Cyclohexylamine | 1-Aminocyclohexane;1- | 0 - 5% | 108-91-8 |

Cyclohexylamine;aminocyclohexane[qr];Amin ohexahydrobenzene;aminohexahydrobenzen e[qr];Aniline, hexahydro-;Benzenamine, hexahydro-;benzenamine,hexahydro-[qr]

* = Various ** = Mixture *** = Proprietary

**Chemical Formula** Not Applicable

## Section 4 - First Aid Measures

**Inhalation** Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower lids. Check for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention.

**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. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** Get medical attention immediately. Call a poison control center or physician. Wash out mouth with water and give one half to one glass of water to dilute stomach contents. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do NOT induce vomiting. If vomiting occurs, the head should be kept low so vomit does not enter the lungs. 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 collar, tie, belt or waistband.

**Most Important Symptoms/Effects**

Acute: Poison. May be fatal if swallowed. If swallowed there is a risk of blindness. Toxic if swallowed, in contact with skin or if inhaled. Ingestion causes nausea, weakness and central nervous system effects, headache, vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms.

Delayed: May damage fertility or the unborn child.

**Note to Physician** When plasma methanol concentration is higher than 20mg/dL, a 10% solution of ethanol in 5% aqueous dextrose is an effective intravenous antidote.

## Section 5 – Fire-Fighting Measures

**Flash Point (°C)** 11°C

**Flash Point Method** PMCC

**Auto Ignition Temperature** 464°C

**Conditions of Flammability** Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/ hot surface. No smoking.

**Extinguishing Media** Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide

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| **Unsuitable Extinguising Media** | Water jet. |
| **Unusual Fire/ Explosion Hazard** | Vapors may collect in low spots and “flash back” from ignition sources. Lower explosive limit = 6%, upper explosive limit = 36.5% |
| **Hazardous Combustion Products** | Carbon oxides |
| **Special Protective Equipment and Precautions for Firefighters** | Wear full firefighting gear and self-contained breathing apparatus (SCBA) for protection against possible exposure.. |

## Section 6 – Accidental Release Measures

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| **Personal precautions** | Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. |
| **Environmental precautions** | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environmentmust be avoided. |
| **Methods and materials for containment and cleaning up** | Contain free liquid if possible. Pick up by covering with an activated carbon absorbent or other suitable inert absorbent material (e.g. sand, sawdust, general-purpose binder). Take up & place in closed containers. Ventilate area & wash spill site after material pickup is complete. Contain and dispose of wash water in accordance with local regulations. |

## Section 7 – Handling and Storage

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| **Precautions for safe handling** | Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. |
| **Conditions for safe storage** | Keep container tightly closed in a dry and well-ventilated place. |
| **Incompatible Conditions** | Heat, Flames, Sparks. |
| **Incompatible Materials** | Oxidizing materials. Acids, Acid anhydrides, Acyl halides and Alkyl halides. Attacks copper, aluminum , zinc, nickel and cast iron. |

## Section 8 – Exposure Controls / Personal Protection

**Occupational Exposure Limits**

| **Ingredient Name** | **Exposure Limits** |
|---|---|
| Methanol | **Canada, Alberta, Occupational Health and Safety Code (table 2: OEL)**<br>TWA: 200ppm<br>STEL: 250ppm<br>**ACGIH TLV**<br>TLV: 200ppm (SKIN)<br>STEL: 250ppm<br>**OSHA PEL**<br>200ppm (skin) |
| Isopropanol | **Canada, Alberta, Occupational Health and Safety Code (table 2: OEL)**<br>STEL: 400ppm |

| | |
|---|---|
| | TWA: 200ppm<br>**ACGIH TLV**<br>TWA: 200ppm 8 Hours<br>STEL: 500ppm<br>**OSHA PEL**<br>TWA: 400ppm |
| Benzyl alkyl pyridinyl quaternary ammonium chloride | Exposure limits are not established for this component |
| Morpholine | **Canada, Alberta, Occupational Health and Safety Code (table 2: OEL)**<br>TWA: 20ppm<br>**ACGIH TLV**<br>TWA: 20ppm<br>**OSHA PEL**<br>TWA: 20ppm |
| Ethoxylated amine | Exposure limits are not established for this component |
| Ethoxylated Nonylphenol | Exposure limits are not established for this component |
| Cyclohexylamine | **Canada, Alberta, Occupational Health and Safety Code (table 2: OEL)**<br>TWA: 10ppm<br>**ACGIH TLV**<br>TWA: 20ppm<br>**OSHA PEL**<br>TWA: 20ppm |

**Personal protective equipment**

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|---|---|
| **Eye/face protection** | Chemical safety glasses with side shields to prevent eye contact. As a general rule do not wear contact lenses when handling chemicals. If contact is possible, the following protection should be worn: Splash goggles. 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. If inhalation hazards exist, a full-face respirator may be required instead. |
| **Skin protection** | Wear chemical resistant gloves, impermeable protective clothing and safety shoes. 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 protection** | Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. |
| **General hygiene Considerations** | Handle in accordance with good industrial hygiene and safety practices. Eye wash fountains and safety showers must be easily accessible. |
| **Specific 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. Use explosion-proof ventilation equipment. |

## Section 9 – Physical and Chemical Properties

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|---|---|---|---|
| **Physical State** | Liquid | **Water Solubility** | Completely miscible |
| **Appearance & Odour** | Clear, dark brown, pungent odour. | **Boiling Point** | 64.7°C (Methanol) |
| **Vapour Pressure** | Not Available | **Boiling Range** | Not Applicable |
| **Odour Threshold** | Not Available | **Melting Point** | <-40°C |

| | | | |
|---|---|---|---|
| **Evaporation Rate** | Not Available | **Freezing Point** | <-40°C |
| **Vapour Density** | Not Available | **Lower Explosive Limit (LEL)** | 6 % (Methanol) |
| **Specific Gravity** | 0.82 – 0.84 | **Upper Explosive Limit (UEL)** | 36 % (Methanol) |
| **pH** | 8.57 (5% v/v) | **Partition coefficient (n-octonal/water)** | Not Available |
| **Flammability (Solid, Gas)** | Not applicable. | | |
| **Decomposition Temperature** | Not available. | **Viscosity** | Not Available |

## Section 10 – Stability and Reactivity

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| **Reactivity** | Containers may rupture or explode if exposed to heat. |
| **Chemical stability** | Stable under recommended storage conditions. |
| **Possibility of hazardous Reactions** | Vapours may form explosive mixture with air. |
| **Conditions to avoid** | Heat, flames and sparks. |
| **Materials to avoid** | Oxidizing materials. Acids, Acid anhydrides, Acyl halides and Alkyl halides. Attacks copper, aluminum , zinc, nickel and cast iron. |
| **Hazardous decomposition Products** | Hazardous decomposition products formed under fire conditions. - Carbon oxides.<br>Other decomposition products - No data available |

## Section 11- Toxicological Information

**Information on Likely Routes of Exposure**

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| **Inhalation** | May cause headache, nausea, dizziness, loss of coordination, central nervous system depression, respiratory tract irritation, sensitivity to light, and/or blurred vision. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms. |
| **Skin contact** | Harmful in contact with skin. |
| **Eye contact** | Causes serious eye irritation. |
| **Ingestion** | Poison. May be fatal if swallowed. If swallowed there is a risk of blindness. |
| **Acute and Chronic Toxicity** | Poison. Toxic if swallowed, in contact with skin or if inhaled. If swallowed there is a risk of blindness. |

**Acute toxicity**

| Product/Ingredient Name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Methanol | LC50 Inhalation, vapour | Rat | 128.2mg/L | 4 Hr |
| | LD50 Oral | Rat | 1187-2769mg/kg | - |
| | LD50 Dermal | Rabbit | 17100mg/kg | - |
| Isopropanol | LC50 Inhalation gas | Rat | 73mg/L | 4 Hr |
| | LD50 Oral | Rat | 5045mg/kg | - |
| | LD50 Dermal | Rabbit | 12870mg/kg | - |
| Benzyl alkyl pyridinyl quaternary ammonium chloride | No data available | | | |

| | | | | |
|---|---|---|---|---|
| Morpholine | LC50 Inhalation, vapour | Rat | 8mgL | Not specified |
| | LD50 Oral | Rat | 1910mg/kg | - |
| | LD50 Dermal | Rabbit | 500mg/kg | - |
| Ethoxylated amine | No data available | | | |
| Ethoxylated Nonylphenol | No data available | | | |
| Cyclohexylamine | LC50 Inhalation, vapour | Rat | 7500mg/$m^3$ | Not specified |
| | LD50 Oral | Rat | 300mg/kg | - |
| | LD50 Dermal | Rabbit | 277mg/kg | - |

**Skin corrosion/irritation** No data available.

**Serious eye damage/eye irritation**

Components of this product (morpholine, cyclohexylamine) can cause serious damage to eyes. Eye irritant.

**Respiratory or skin sensitization**

Does not cause skin sensitization.

**Germ cell Mutagenicity** No known significant effects or critical hazards.

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity** Methanol may cause teratogenic/embryotoxic effects based on studies in laboratory animals.

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

Causes damage to organs.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

This substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration hazard** No aspiration toxicity classification.

**Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure**

**Short Term Exposure**

**Potential immediate Health Effects**

Poison. Toxic if swallowed, in contact with skin or if inhaled. May be fatal if swallowed. If swallowed there is a risk of blindness. Causes serious eye irritation. Causes damage to organs. Ingestion causes nausea, weakness and central nervous system effects, headache, vomiting, dizziness, symptoms of drunkenness, respiratory tract irritation. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms.

**Potential Delayed Health Effects**

Symptoms may be delayed. Toxic by ingestion, inhalation or skin contact. Can cause metabolic acidosis, blindness, seizures, liver and kidney damage, unconsciousness, coma and death.

**Long Term Exposure**

**Potential immediate Health Effects** No data available.

**Potential Delayed Health Effects** No data available.

**Potential Chronic Effects** May cause liver and kidney damage.

**Synergistic effects** Alcohols may interact synergistically with chlorinated solvents (example - carbon tetrachloride, chloroform, bromotrichloromethane), dithiocarbamates (example - disulfiram), dimethylnitrosamine and thioacetamide.

## Section 12 – Ecological Information

**Toxicity**

| Product / Ingredient Name | Result | Species | Exposure |
|---|---|---|---|
| Methanol | LC50 15400mg/L<br>NOEC 7900mg/L<br>EC50 >10000mg/L | Fish – Lepomis macrochirus<br>Fish – Oryzias Latipes<br>Daphnia – Daphnia magna | 96 Hr<br>200 Hr<br>48 Hr |
| Isopropanol | LC50 9640mg/L<br>EC50 5102mg/L | Fish – Pimephales promelas<br>Daphnia – Daphnia magna | 96 Hr<br>24 Hr |
| Benzyl alkyl pyridinyl quaternary ammonium chloride | No data available | | |
| Morpholine | LC50 380mg/L<br>EC50 45mgL | Fish – Oncorhynchus mykiss<br>Daphnia – Daphnia magna | 96 Hr<br>48 Hr |
| Ethoxylated amine | No data available | | |
| Ethoxylated Nonylphenol | No data available | | |
| Cyclohexylamine | LC50 33mg/L<br>ED50 36.3mg/L | Fish – Oryzias latimes<br>Daphnia – Daphnia magna | 96 Hr<br>48 Hr |

**Persistence and degradability**

Biodegradability

Methanol — aerobic
Result: 72 % - readily biodegradable
Method: OECD Test Guideline 3-1D

Morpholine — aerobic
Result: 93 % - readily biodegradable

Cyclohexylamine — aerobic
Result: 92 % - readily biodegradable

Other components have unknown biodegradability.

**Bioaccumulative potential** No data available.
**Mobility in soil** No data available.
**PBT and vPvB assessment** No data available.
**Other adverse effects** No data available.

## Section 13 – Disposal Considerations

**Product** This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging** Dispose of as unused product.

## Section 14 - Transportation Information

CANADA Transportation of Dangerous Goods (TDG )

**Shipping Name** UN1992, Flammable Liquid, Toxic N.O.S. (Methanol), 3. PG II
**Class** 3
**UN Number** UN1992
**Packaging Group:** II
**Label**

| | |
|---|---|
| **Environmental hazards** | Not a marine pollutant. |
| **Transportation in bulk, if applicable** | No data available |
| **Special Precautions** | No data available |

## Section 15 – Regulatory Information

**DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act)**

All components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

**TSCA Inventory (8b)** All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

## Section 16 – Other Information

REVISION SUMMARY:

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|---|---|
| Date of Preparation | April 1, 2017 |
| Date of Revision | March 15, 2022 |

SDS Prepared by: CFR Lab Manager

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