

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**MSDS Name:** Potassium Hydroxide Methanol Solution

**MSDS Preparation Date:** 05/12/2008

**MSDS Reviewed Date:** 05/05/2011

**Synonyms or Generic ID for Potassium Hydroxide:** Caustic potash, Lye, Potassium hydrate

**Synonyms or Generic ID for Methanol:** Carbinol; Methyl alcohol; Methyl hydroxide; Monohydroxymethane; Wood alcohol; Wood naptha; Wood spirits; Columbian spirits; Methanol.

**Chemical Family:** Methanol Family

**Formula:** KOH in CH<sub>3</sub>OH

**Molecular Weight:** N/A

**PIN (UN#/ NA#):** UN2924

**Company Identification:**

Microbial ID.

125 Sandy Drive

Newark, DE 19713

**For Information, call:** (800)276-8068, (302) 737-4297

**For Domestic CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

**SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS**

CAS #	Chemical Name	Percent	EINECS/ELINCS	Hazards
1310-58-3	Potassium Hydroxide	< 5%	215-181-3	Corrosive
67-56-1	Methanol	>95%	200-659-6	Irritant, Flammable
7732-18-5	Water	<1%	231-791-2	None

**NFPA Rating:** (estimated) Health: 3; Flammability: 3; Instability: 0

State: Liquid	Appearance: colorless, occasional precipitate formation	Odor: Alcohol-like, weak odor
Boiling Point: 151°F	pH: Not available	Specific Gravity: .8
Vapor Pressure (mm Hg): Not Available	Vapor Density (AIR=1): Not Available	
Flash Point: 52°F	Solubility in Water: soluble	

**SECTION 3 – HAZARDS IDENTIFICATION**

**Appearance:** Colorless liquid with occasional precipitate formation, methanol odor. Flash Point: 52 deg F.

**Danger!** Causes digestive tract burns. Corrosive. Poison! Causes eye and skin burns. Vapor harmful. May be fatal or cause blindness if swallowed. **Flammable liquid and vapor.** May be absorbed through intact skin. May cause respiratory tract irritation. May cause central nervous system depression. This substance has caused adverse reproductive and fetal effects in animals. May cause liver and kidney damage. Cannot be made non-poisonous.

**Target Organs:** Kidneys, central nervous system, liver, eyes.

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**Potential Health Effects**

**Eye:** Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulceration of the conjunctiva and cornea. Eye damage may be delayed. May cause painful sensitization to light. Vapors may cause eye irritation.

**Skin:** Causes skin burns. May be absorbed through the skin in harmful amounts.

**Ingestion:** May be fatal or cause blindness if swallowed. May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause perforation of the digestive tract. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death.

**Inhalation:** Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause visual impairment and possible permanent blindness. May cause drowsiness, unconsciousness, and central nervous system depression.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

**SECTION 4 – FIRST AID MEASURES**

**Eyes:** Get medical aid immediately. Flush thoroughly with water for at least 15 minutes. Do NOT allow victim to rub or keep eyes closed. SPEEDY ACTION IS CRITICAL.

**Skin:** Immediately flush skin with copious quantities of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Get medical aid immediately. Do NOT induce vomiting. If victim is conscious and alert give 2 – 4 cups of water. Consult a physician immediately. If vomiting occurs naturally, have victim lean forward.

**Inhalation:** Get medical aid immediately. Remove patient to fresh air. Administer oxygen supply if breathing is difficult. Administer artificial respiration if breathing has ceased. Call a physician. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Effects may be delayed. Ethanol may inhibit methanol metabolism.

**SECTION 5 – FIRE FIGHTING MEASURES**

**Flash Point :** 12°C/ 52F

**Flammable Limits LEL (%):** 6.70

**Flammable Limits UEL (%):** 35.00

**Extinguishing Media:** Use “alcohol” foam, carbon dioxide, dry chemical.

**NFPA Rating:** (estimated) Health: 3, Flammability: 3, Instability: 0

**General Information:** Containers can build up pressure if exposed to heat and/or fire. Vapors can travel to a source of ignition and flash back. Flammable liquid. Can release vapors that form explosive mixtures at temperatures above the flash point. Use water spray to keep fire exposed containers cool. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Vapors may form an explosive mixture with air. Containers may explode when heated.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**SECTION 6 – ACCIDENTAL RELEASE MEASURES**

**General Information:** **SUBSTANCE IS FLAMMABLE.** Remove any ignition sources until the area is determined to be free from explosion or fire hazards. Use proper personal protective equipment as indicated in Section 8. Contain the release and eliminate its source, if this can be done without risk. Take up and contain material for proper disposal as described under disposal. Comply with Federal, State and local regulations on reporting releases.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

**SECTION 7-HANDLING AND STORAGE**

**HANDLING:** Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Use with adequate ventilation. Contents may develop pressure upon prolonged storage. Use caution upon opening. Do not breathe dust, vapor, mist, or gas. Do not get on skin, eyes, or on clothing. Do not ingest or inhale. Do not wash down the drain. Do not allow smoking or food consumption while handling. Keep from contact with moist air and steam. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Store in a tightly closed container. Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well ventilated area away from incompatible substances.

**SECTION 8 – EXPOSURE CONTROL/ PERSONAL PROTECTION**

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below permissible exposure.

<b>Chemical Name</b>	<b>ACGIH</b>	<b>NIOSH</b>	<b>OSHA – Final PELs</b>
Methanol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m <sup>3</sup> TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m <sup>3</sup> TWA
Potassium hydroxide	2 mg/m <sup>3</sup> Ceiling	None listed	None listed
Water	None listed	None listed	None listed

**OSHA Vacated PELs:** Potassium Hydroxide in Methanol - Methyl alcohol: 200 ppm TWA; 260 mg/m<sup>3</sup> TWA Potassium hydroxide: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical.

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective chemical resistant gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Ventilation:** Normal room ventilation is adequate.

**Other Protective Equipment:** Make eye bath and emergency shower available.

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

**Physical State:** Liquid  
**Appearance:** Colorless  
**Odor:** Alcohol-like, weak odor  
**Freezing/Melting Points:** -148°F  
**Boiling Point:** 151°F  
**Specific Gravity (H<sub>2</sub>O = 1):** 0.8  
**Appearance:** Clear, colorless  
**Solubility:** Soluble in water.  
**Vapor Pressure (mm Hg):** Not Available  
**Vapor Density (air =1):** Not Available  
**Evaporation Rate:** Not Available  
**Molecular Formula:** Mixture  
**Molecular Weight:** Not available  
**Viscosity:** Not Available

**SECTION 10 – STABILITY AND REACTIVITY**

**Chemical Stability:** Stable  
**Conditions to Avoid:** Excess heat and contact with ignition sources.  
**Incompatibilities with Other Materials:** Oxidizing agents, acids, and other reactive metals.  
**Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, formaldehyde.  
**Hazardous polymerization:** Has not been reported.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

**Potassium Hydroxide**

**CAS#:** 1310-58-3 : TT2100000  
**LD50/LC50:** Draize test, rabbit , skin: 50mg/24H Severe; oral,rat: LD50 = 273mg/kg  
**Carcinogenicity:** Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA  
**Epidemiology:** No data available  
**Teratogenicity:** No data available  
**Reproductive Effects:** No data available  
**Neurotoxicity:** No data available  
**Mutagenicity:** No data available  
**Other Studies:** No data available

**Methanol**

**CAS#:** 67-56-1: PC140000  
**LD50/LC50:**  
Draize Test, rabbit, eye: 40mg Moderate;  
Draize Test, rabbit eye: 100mg/24H Moderate  
Draize Test, rabbit skin: 20mg/24H Moderate  
Inhalation, rabbit: LC50 = 81000mg/m<sup>3</sup>/14H  
Inhalation, rat: LC50 = 64000 ppm/4H  
Oral, mouse: LD50 = 7300 mg/kg  
Oral, rabbit: LD50 = 14200 mg/kg  
Oral, rat: LD50 = 5600mg/kg  
Skin/rabbit: LD50 = 15800 mg/kg  
Human LDLo Oral: 143 mg/kg; Human LDLo Oral: 428 mg/kg; Human TCLo Inhalation; 300 ppm caused visual field changes & headache; Monkey LDLo Skin: 393 mg/kg. Methanol is significantly less toxic to most experimental animals than humans, because most animal species metabolize methanol differently. Non-primate species do not ordinarily show symptoms of metabolic acidosis or the visual effects which have been observed in primates and humans.

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**Carcinogenicity:** Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found

**Teratogenicity:** There is no human information available. Methanol is considered to be a potential developmental hazard based on animal data. In animal experiments, methanol has caused fetotoxic or teratogenic effects without maternal toxicity.

**Reproductive Effects:** See actual entry in RTECS for complete information.

**Mutagenicity:** See actual entry in RTECS for complete information.

**Neurotoxicity:** ACGIH cites neuropathy, vision and CNS under TLV basis.

**SECTION 12 – ECOLOGICAL INFORMATION**

**Ecotoxicity:**

Fish: Rainbow Trout: LC50 = 13-68mg/L; 96Hr; 12°C

Fish: Fathead Minnow: LC50=29400 mg/L; 96Hr.; 25°C, pH 7.63

Fish: Rainbow Trout: LC50= 8000mg/L; 48Hr.; Unspecified bacteria: Phytobacterium phosphoreum: EC50= 51,000 – 320,00 mg/L; 30 minutes; Microtox test Methyl Alcohol: Goldfish (fresh water), 250ppm/11H, death. Aquatic toxicity rating: TLM 96> 1000ppm

**Environmental:** Methanol is expected to be biodegradable in soil based on the results of a large number of biological screening studies, which include soil microcosm studies. Methanol's miscibility in water and log KOW (-0.77) suggest high mobility in soil.

**Physical:** No information available.

**Other:** No information available.

**SECTION 13 – DISPOSAL CONSIDERATIONS**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRC P-Series:** None listed.

**RCRA U-Series:** Waste Number U154 (Ignitable waste).

**SECTION 14 – TRANSPORT INFORMATION**

	<b>US DOT</b>	<b>CANADA TDG</b>
<b>Shipping Name:</b>	Flammable Liquids, Corrosive, N.O.S.	Flammable Liquid, Corrosive, NOS (Methanol, POT. Hydrox)
<b>Hazard Class:</b>	3	3 (8)
<b>UN Number:</b>	UN2924	UN2924
<b>Packing Group:</b>	II	II

**SECTION 15 – REGULATORY INFORMATION**

**US FEDERAL**

**TSCA**

CAS# 67-56-1 is listed on the TSCA inventory.

CAS# 1310-58-3 is listed on the TSCA inventory.

CAS# 7732-18-5 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

CAS# 1310-58-3: 1000 lb final RQ; 454 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 67-56-1: immediate, fire.

CAS # 1310-58-3: immediate, reactive.

**Section 313**

This material contains Methyl alcohol (CAS# 67-56-1, 92.5-99.3%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**

CAS# 1310-58-3 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 1310-58-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:** T F

**Risk Phrases:**

R 11 Highly flammable.

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 35 Causes severe burns.

R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

**Safety Phrases:**

S 16 Keep away from sources of ignition - No smoking.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7 Keep container tightly closed.

**WGK (Water Danger/Protection)**

CAS# 67-56-1: 1

CAS# 1310-58-3: 1

CAS# 7732-18-5: No information available.

**Material Safety Data Sheet**  
**Instant FAME Reagent 1**  
**Potassium Hydroxide Methanol Solution**

**Canada - DSL/NDSL**

CAS# 67-56-1 is listed on Canada's DSL List.  
CAS# 1310-58-3 is listed on Canada's DSL List.  
CAS# 7732-18-5 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B2, D2B, E.  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.  
CAS# 1310-58-3 is listed on the Canadian Ingredient Disclosure List.

<b>SECTION 16 – Other Information</b>
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This Material Safety Data Sheet has been prepared in accordance with 29 CFR 1910.1200 and contains information believed to be accurate and complete at the date of preparation. The statements contained herein are offered for informational purposes only and are based upon technical data. MIDI Inc. believes them to be accurate but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (MIDI Inc.) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should make their own investigations to determine suitability of information and product for their particular purposes.