

Material Safety Data Sheet

Karl Fischer Reagent Diluent

ACC# 40109

Section 1 - Chemical Product and Company Identification

MSDS Name: Karl Fischer Reagent Diluent**Catalog Numbers:** SK5-1, SK5-4**Synonyms:** None.**Company Identification:**

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100**Emergency Number:** 201-796-7100**For 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
109-86-4	2-Methoxyethanol	80.70	203-713-7
110-86-1	Pyridine	19.30	203-809-9

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear to light yellow liquid. Flash Point: 37.7 deg C.

Danger! Causes irritation and possible burns by all routes of exposure. **Flammable liquid and vapor.** May be harmful if swallowed, inhaled, or absorbed through the skin. May cause blood abnormalities. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects.

Target Organs: Blood, kidneys, central nervous system, liver.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

Skin: May be harmful if absorbed through the skin. Contact with pyridine may produce first-degree burns on short-term exposure and second-degree burns on long exposure.

Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. 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 blood

abnormalities.

Inhalation: May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability. May cause severe irritation of the respiratory tract with possible burns. May be harmful if inhaled.

Chronic: Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause reproductive and fetal effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vaporizes easily at normal temperatures. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Containers may explode when heated.

Extinguishing Media: Use water spray to cool fire-exposed containers. Cool containers with flooding quantities of water until well after fire is out. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: 37.7 deg C (99.86 deg F)

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. 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 reuse. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Do not get on skin or in eyes. Do not ingest or inhale. Use only in a chemical fume hood. Keep away from flames and other sources of high temperatures that may cause material to form vapors. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

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

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
2-Methoxyethanol	0.1 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	0.1 ppm TWA; 0.3 mg/m ³ TWA 200 ppm IDLH	25 ppm TWA; 80 mg/m ³ TWA
Pyridine	1 ppm TWA	5 ppm TWA; 15 mg/m ³ TWA 1000 ppm IDLH	5 ppm TWA; 15 mg/m ³ TWA

OSHA Vacated PELs: 2-Methoxyethanol: 25 ppm TWA; 80 mg/m³ TWA Pyridine: 5 ppm TWA; 15 mg/m³ TWA

Personal Protective Equipment

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

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear to light yellow

Odor: disagreeable odor

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate:Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point:Not available.
Decomposition Temperature:Not available.
Solubility: Soluble in water.
Specific Gravity/Density:0.93
Molecular Formula:Not applicable.
Molecular Weight:Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: High temperatures, incompatible materials, ignition sources.
Incompatibilities with Other Materials: Water, organic materials, strong bases, strong oxidizing strong acids, acid anhydrides, metals and metal oxides, halogens and interhalogens, oils.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 109-86-4: KL5775000

CAS# 110-86-1: UR8400000

LD50/LC50:

CAS# 109-86-4:

Draize test, rabbit, eye: 97 mg;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 483 mg/24H Mild;
Inhalation, mouse: LC50 = 1480 ppm/7H;
Inhalation, rat: LC50 = 1500 ppm/7H;
Oral, mouse: LD50 = 2560 mg/kg;
Oral, mouse: LD50 = 2800 mg/kg;
Oral, rabbit: LD50 = 890 mg/kg;
Oral, rat: LD50 = 2370 mg/kg;
Oral, rat: LD50 = 2460 mg/kg;
Skin, rabbit: LD50 = 1280 mg/kg;
Skin, rabbit: LD50 = 2000 mg/kg;

CAS# 110-86-1:

Dermal, guinea pig: LD50 = 1 gm/kg;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC50 = 28500 mg/m³/1H;
Oral, mouse: LD50 = 1500 mg/kg;
Oral, rat: LD50 = 891 mg/kg;
Skin, rabbit: LD50 = 1121 mg/kg;

Carcinogenicity:

CAS# 109-86-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 110-86-1:

- **ACGIH:** A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
- **California:** carcinogen, initial date 5/17/02
- **NTP:** Not listed.
- **IARC:** Not listed.

Epidemiology: NIOSH recommends that 2-methoxyethanol be regarded as having the potential to cause adverse reproductive effects in workers, including teratogenesis in the offspring of exposed pregnant females.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: If released into the soil, 2-methoxyethanol can be expected to volatilize as well as leach into the ground. It will slowly volatilize from water and in the atmosphere it will photodegrade (half-life <1day). Pyridine will most likely leach into the ground and biodegrade if released into soil. If released into water, it will biodegrade and photooxidize. In the atmosphere it will react with photochemically produced hydroxyl radicals.

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.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 110-86-1: waste number U196.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	FLAMMABLE LIQUIDS, N.O.S.	No information available.
Hazard Class:	3	
UN Number:	UN1993	
Packing Group:	III	

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 109-86-4 is listed on the TSCA inventory.

CAS# 110-86-1 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 110-86-1: Effective 10/4/82, Sunset 10/4/92

Chemical Test Rules

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

Section 12b

CAS# 109-86-4: Section 5, 1 % de minimus concentration

TSCA Significant New Use Rule

CAS# 109-86-4: This product is for research and development use only. It is subject to a SNUR which has specific requirements and restrictions. The specific citation for this product is 4040 CFR 721.10001.

CERCLA Hazardous Substances and corresponding RQs

CAS# 110-86-1: 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 # 109-86-4: immediate, delayed, fire.

CAS # 110-86-1: immediate, delayed, fire.

Section 313

This material contains 2-Methoxyethanol (CAS# 109-86-4, 80.70%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

This material contains Pyridine (CAS# 110-86-1, 19.30%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 109-86-4 (listed as Glycol ethers (except for EGBE)) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances 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# 109-86-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 110-86-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains 2-Methoxyethanol, a chemical known to the state of California to cause male reproductive toxicity. WARNING: This product contains Pyridine, a chemical known to the state of California to cause cancer. WARNING: This product contains 2-Methoxyethanol, a chemical known to the state of California to cause developmental reproductive toxicity.
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 10 Flammable.
- R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- R 60 May impair fertility.
- R 61 May cause harm to the unborn child.

Safety Phrases:

- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 28 After contact with skin, wash immediately with...
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 53 Avoid exposure - obtain special instructions before use.

WGK (Water Danger/Protection)

- CAS# 109-86-4: 1
- CAS# 110-86-1: 2

Canada - DSL/NDSL

- CAS# 109-86-4 is listed on Canada's DSL List.
- CAS# 110-86-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

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# 109-86-4 is listed on the Canadian Ingredient Disclosure List.
- CAS# 110-86-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/30/1997

Revision #5 Date: 11/20/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.