



Material Safety Data Sheet

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RESIDUAL SOLVENT CLASS 2 - 2-METHOXYETHANOL

Catalog Number: 1601645

Package Size: See label

Revision Date:

October 9, 2003

This reference standard contains 2-methoxyethanol in dimethyl sulfoxide (DMSO). The mixture has not been tested to determine specific physical hazards, but it is considered potentially combustible. DMSO is an irritant and is rapidly absorbed through the skin. It may carry dissolved chemicals into the body through this route. 2-Methoxyethanol is toxic and an irritant.

SECTION 1 - IDENTIFICATION

Common Name: 2-Methoxyethanol

Formula: C₃H₈O₂ (2-Methoxyethanol); C₂H₆OS (DMSO)

Synonym: Ethylene glycol methyl ether; EGME, methyl cellosolve

Chemical Name: Ethanol, 2-methoxy- in dimethyl sulfoxide

CAS Number: 109-86-4 (2-Methoxyethanol); 67-68-5 (DMSO)

RTECS Number: KL5775000 (2-Methoxyethanol); PV6210000 (DMSO)

Chemical Family: Glycol ether (2-Methoxyethanol)

Therapeutic Category: Residual solvent

SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
2-Methoxyethanol	0.025%	OSHA: TWA 25 ppm (skin) NIOSH: TWA 0.1 ppm (skin); IDLH 200 ppm ACGIH: TWA 5 ppm (skin)
Dimethyl sulfoxide	99.975%	n/f

SECTION 3 - HEALTH HAZARD INFORMATION

Usual Adult Dose: n/f

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Adverse Effects: Adverse effects of DMSO may include redness, itching, or rash on skin; garlic-like taste or odor on breath and skin; swelling of face; troubled breathing; shortness of breath; and nasal congestion. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

Overdose Effects: Symptoms of 2-methoxyethanol poisoning may be delayed 8 to 18 hours and may include agitation, confusion, anemia, metabolic acidosis, hyperventilation, loss of coordination, tremor, sleepiness, headache, slurred speech, blurred vision, personality change, kidney failure, and coma.

Acute: Eye, skin, gastrointestinal and/or respiratory tract irritation; central nervous system depression.

Chronic: Possible hypersensitization; brain damage; bone marrow depression.

Inhalation: Causes irritation. Avoid inhalation. Remove to fresh air.

Eye: Causes irritation. Avoid contact. Flush with copious quantities of water for at least 15 minutes.

Skin: Causes irritation. Avoid contact. Flush with copious quantities of soap and water. DMSO readily penetrates the skin and can enhance absorption of other chemicals.

Ingestion: Causes irritation. Avoid ingestion. Flush out mouth with water.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material; blood or kidney disorders.

Cross Sensitivity: n/f

Pregnancy Comments: 2-Methoxyethanol has caused central nervous system depression; cardiovascular and skeletal birth defects; damage to the testes; reduction of and abnormal sperm; and infertility in experimental animals.

Pregnancy Category: n/f

SECTION 4 - FIRST AID MEASURES

General: Remove from exposure. Remove contaminated clothing. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention. If person is not breathing give artificial respiration. If breathing is difficult give oxygen. Obtain medical attention.

Overdose Treatment: Treatment of 2-Methoxyethanol overdose may include the following:

1. Do not induce vomiting because of the potential for central nervous system depression.
2. Because symptoms may be delayed 8 to 18 hours, patients suspected of toxic ingestions should be admitted and observed for at least 24 hours.
3. Obtain CBC, electrolytes, renal function tests, urinalysis, and arterial blood gasses in symptomatic patients.
4. Treat severe acidosis (pH <7.1) with IV sodium bicarbonate. Monitor blood gasses to adjust dose.
5. Monitor renal function and urinalysis closely. Renal insufficiency may develop 2 to 3 days post-ingestion. Oxaluria may develop.
6. Ethanol therapy and fomepizole have not been specifically studied for 2-methoxyethanol toxicity but may be beneficial. Hemodialysis may be effective. [Poindex 2003]

SECTION 5 - TOXICOLOGICAL INFORMATION

Oral Rat: LD50: 2370; 2460 mg/kg (2-Methoxyethanol); 14500

Oral Mouse: LD50: 2560 mg/kg (2-Methoxyethanol); 7920 mg/kg

Irritancy Data: RTECS - Rabbit/skin, eye: mild; Guinea pig/eye: mild (2-Methoxyethanol); Rabbit/skin,eye: mild (DMSO)

Target Organ(s): Central nervous system, brain, bone marrow, blood, kidneys, reproductive system

Listed as a Carcinogen? NTP: No IARC: No OSHA: No

Other: No

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SECTION 6 - FIREFIGHTING MEASURES

- Flash Point:** n/f **Upper Flammable Limit:** n/f
- Auto-Ignition Temperature:** n/f **Lower Flammable Limit:** n/f
- Extinguisher Media:** Water spray, dry chemical, carbon dioxide or foam as appropriate for surrounding fire and materials.
- Fire and Explosion Hazards:** This material is expected to be combustible. Vapors may form explosive mixtures with air. Vapors may travel to sources of ignition and flash back.
- Firefighting Procedures:** As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

SECTION 7 - PHYSICAL HAZARDS

- Conditions to Avoid:** Avoid exposure to light.
- Incompatibilities:** n/f
- Decomposition Products:** When heated to decomposition material emits toxic fumes. Emits toxic fumes under fire conditions.
- Stable?** Yes **Hazardous Polymerization?** No

SECTION 8 - HANDLING / SPILL / DISPOSAL MEASURES

- Handling:** As a general rule, when handling USP Reference Standards avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Wash thoroughly after handling.
- Storage:** Store in tight, light-resistant container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.
- Spill Response:** Wear approved respiratory protection, chemically compatible gloves and protective clothing. Remove ignition sources. Ventilate enclosed spaces. Absorb with suitable material. Do not flush into a confined space such as a sewer. Avoid breathing vapors. Place spillage and all contaminated cleanup materials in an appropriately-labelled container for disposal. Wash spill site.
- Disposal:** Dispose of waste in accordance with all applicable Federal, State and local laws.

SECTION 9 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- Respiratory Protection:** Use a NIOSH approved respirator, if it is determined to be necessary by an industrial hygiene survey involving air monitoring.
- Ventilation:** Recommended.
- Gloves:** Chemically compatible
- Eye Protection:** Safety Goggles
- Protective Clothing:** Protect exposed skin.

SECTION 10 - PHYSICAL AND CHEMICAL PROPERTIES

NOTE: The data reported below is general information, and is not specific to the USP Reference Standard Lot provided!

- Appearance and Odor:** Clear liquid.
- Melting Point:** n/f
- Solubility in Water:** n/f **Vapor Density:** n/f
- Boiling Point:** n/f **Evaporation Rate:** n/f

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Specific Gravity: n/f

Reactivity in Water: n/f

Vapor Pressure: n/f

% Volatile by Volume: n/f