



# Material Safety Data Sheet

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Responsible Party: Reference Standards Technical Services

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## RESIDUAL SOLVENT CLASS 2 - 2-ETHOXYETHANOL

Catalog Number: 1601543

Package Size: See label

Revision Date:

October 7, 2003

This reference standard contains 2-ethoxyethanol 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-Ethoxyethanol is an irritant and reproductive hazard.

### SECTION 1 - IDENTIFICATION

**Common Name:** 2-Ethoxyethanol

**Formula:** C<sub>4</sub>H<sub>10</sub>O<sub>2</sub> (2-Ethoxyethanol); C<sub>2</sub>H<sub>6</sub>OS (DMSO)

**Synonym:** Ethylene glycol monoethyl ether; EGEE

**Chemical Name:** Ethanol, 2-ethoxy- in dimethyl sulfoxide

**CAS Number:** 110-80-5 (2-Ethoxyethanol); 67-68-5 (DMSO)

**RTECS Number:** KK8050000 (2-Ethoxyethanol); PV6210000 (DMSO)

**Chemical Family:** Ethylene glycol monoalkyl ethers (2-Ethoxyethanol)

**Therapeutic Category:** Residual solvent

### SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
2-Ethoxyethanol	0.08%	OSHA: TWA 200 ppm (skin) NIOSH: TWA 0.5 ppm (skin); IDLH 500 ppm ACGIH: TWA 5 ppm (skin)
Dimethyl sulfoxide	99.92%	

### SECTION 3 - HEALTH HAZARD INFORMATION

**Usual Adult Dose:** n/f

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**Adverse Effects:** Adverse effects of glycol ethers may include loss of coordination, tremor, drowsiness, lethargy, headache, slurred speech, blurred vision, personality changes, confusion, disorientation, agitation, motor restlessness, and coma. 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:** n/f

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

**Chronic:** Chronic effects include possible hypersensitization.

**Inhalation:** Causes irritation. Avoid inhalation. Remove to fresh air. 2-Ethoxyethanol is readily absorbed through the lungs.

**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 and bitter taste. Avoid ingestion. Flush out mouth with water. 2-Ethoxyethanol is readily absorbed from the gastrointestinal tract.

**Medical Conditions Aggravated by Exposure:** Hypersensitivity to material; eye, skin, neurological, kidney, or blood conditions.

**Cross Sensitivity:** n/f

**Pregnancy Comments:** Animal studies with 2-ethoxyethanol have resulted in embryo death, fetal abnormalities, and birth defects. 2-ethoxyethanol has also caused reduced fertility in male animals, and humans occupationally exposed to 2-ethoxyethanol have had lowered sperm counts.

**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 overdose should be symptomatic and supportive and may include the following:

1. Do not induce vomiting because of the potential for central nervous depression and seizures.
2. For acute lung injury: Maintain ventilation and oxygenation and evaluate with frequent arterial blood gas or pulse oximetry monitoring. Early use of PEEP and mechanical ventilation may be needed.
3. The role of ethanol therapy in preventing toxicity is uncertain. Animal data suggest it may inhibit the formation of toxic metabolites.
4. Monitor arterial pH and blood gasses in symptomatic patients or following large ingestion. Monitor kidney function.
5. Treat severe (pH<7.1) acidosis with IV sodium bicarbonate.
6. Hemodialysis may be effective in severe acid base or fluid-electrolyte abnormalities or kidney failure.
7. Delayed onset of symptoms (8-18 hours) has been seen following ingestion of other glycol ethers. Observe patient for at least 24 hours following significant ingestion. [Poisindex 2003]

## SECTION 5 - TOXICOLOGICAL INFORMATION

**Oral Rat:** LD50: 2125 mg/kg (2-Ethoxyethanol) ; 14500 mg/kg

**Oral Mouse:** LD50: 2451 mg/kg (2-Ethoxyethanol) ; 7920 mg/kg (

**Irritancy Data:** RTECS - Rabbit/skin: mild; Rabbit/eye: moderate, mild (2-Ethoxyethanol); Rabbit/skin,eye: mild (DMSO)

**Target Organ(s):** Central nervous system; kidneys; male reproductive system

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

Other: No

## 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. 2-Ethoxyethanol forms peroxides with air.

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

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**Solubility in Water:** n/f

**Vapor Density:** n/f

**Boiling Point:** n/f

**Evaporation Rate:** n/f

**Specific Gravity:** n/f

**Reactivity in Water:** n/f

**Vapor Pressure:** n/f

**% Volatile by Volume:** n/f