



# Material Safety Data Sheet

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Responsible Party: Reference Standards Technical Services

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## RESIDUAL SOLVENT CLASS 2 - XYLENES

Catalog Number: 1601849

Package Size: See label

Revision Date:

October 28, 2003

This reference standard contains xylenes 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.

Xylenes is a mixture of isomers and ethyl benzene (60% m, 14% p, 9% o, and 17% ethyl benzene [EB]). Xylenes are toxic and irritant. Ethyl benzene is toxic, an irritant, and a possible carcinogen.

### SECTION 1 - IDENTIFICATION

**Common Name:** Xylenes

**Formula:** C<sub>8</sub>H<sub>10</sub> (Xylenes); C<sub>2</sub>H<sub>6</sub>OS (DMSO)

**Synonym:** n/f

**Chemical Name:** Xylenes in dimethyl sulfoxide

**CAS Number:** 1330-20-7 (Xylenes); 100-41-4 (EB);  
67-68-5 (DMSO)

**RTECS Number:** ZE2100000 (Xylenes); DA0700000 (EB);  
PV6210000 (DMSO)

**Chemical Family:** Hydrocarbon (Xylenes)

**Therapeutic Category:** Residual solvent

### SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
Xylenes	0.90055%	OSHA: TWA 100 ppm NIOSH: TWA 100 ppm; STEL 150 ppm ACGIH: TWA 100 ppm; STEL 150 ppm
Ethyl Benzene	0.18445%	OSHA: TWA 100 ppm NIOSH: TWA 100 ppm; STEL 125 ppm; IDLH 800 ppm ACGIH: TWA 100 ppm; STEL 125 ppm
Dimethyl sulfoxide	98.915%	n/f

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### SECTION 3 - HEALTH HAZARD INFORMATION

**Usual Adult Dose:** n/f

**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. Adverse effects of xylenes may include headache, dizziness, nausea, confusion, tremor, impaired memory, weakness, gastrointestinal distress, drowsiness, loss of coordination, and vomiting. There is a risk of aspiration following xylenes ingestion, which may lead to pneumonitis and pulmonary edema. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

**Overdose Effects:** Overdose of xylenes may cause pulmonary edema, respiratory depression or failure, convulsions, seizures, ventricular arrhythmias, coma, and death.

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

**Chronic:** Possible hypersensitization; damage to liver, kidneys, or cardiovascular or nervous systems.

**Inhalation:** Causes irritation and toxicity. 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 and toxic effects. Avoid ingestion. Flush out mouth with water.

**Medical Conditions Aggravated by Exposure:** Hypersensitivity to material; alcoholism; heart, liver, kidney, neurological, or blood disorders.

**Cross Sensitivity:** n/f

**Pregnancy Comments:** There have been few well-conducted studies of reproductive effects of xylene exposure in humans. Very limited data suggest toxicosis, miscarriage, hemorrhage during birth, and infertility may occur. There is evidence in animals that xylenes cause toxicity and birth defects, usually at maternally toxic doses. Ethyl benzene has caused birth defects, affected fertility, and caused birth defects in animal reproductive studies.

**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 xylene overdose may include the following:

1. Because of the risk of CNS depression and pulmonary aspiration, do not induce vomiting. Activated charcoal may induce vomiting and pulmonary aspiration. Routine use is not recommended.
2. Support respiratory and cardiovascular function.
3. Monitor for respiratory distress. Delayed pulmonary edema may not develop for 24 to 72 hours. If symptomatic, obtain chest x-ray; if severe, monitor arterial blood gases or pulse oximetry. PEEP or CPAP may be necessary. If CNS depression, noncardiogenic pulmonary edema, or ARDS develop, endotracheal intubation, assisted ventilation, and supplemental oxygen may be required.
4. Monitor cardiac function. Epinephrine and other sympathomimetics should be used with caution. Xylene may decrease the myocardial threshold to the arrhythmogenic effects of such drugs, increasing the risk of arrhythmias.
5. Monitor fluid and electrolyte status. Correct hypokalemia and acidemia with intravenous potassium and sodium bicarbonate. Hypocalcemia may ensue following fluid and electrolyte replenishment. This should be corrected with intravenous calcium. [Meditext 2003]

### SECTION 5 - TOXICOLOGICAL INFORMATION

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**Oral Rat:** LD50: 4300 mg/kg (Xylenes); 3500 mg/kg (EB); 145

**Oral Mouse:** LD50: 2119 mg/kg (Xylenes); 7920 mg/kg (DMSO)

**Irritancy Data:** Rabbit/skin:mod.(Xylenes); Rabbit/eye:severe(Xylenes, EB); Rabbit/skin,eye:mild(DMSO)

**Target Organ(s):** Central nervous system, kidneys, cardiovascular system (Xylenes)

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

**Other:** Ethyl benzene is listed as a possible carcinogen by IARC.

### 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:** Dry chemical, carbon dioxide or foam as appropriate for surrounding fire and materials. Solid stream of water may scatter and spread fire.

**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:** n/f

**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 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.

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### 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

**Boiling Point:** n/f

**Specific Gravity:** n/f

**Vapor Pressure:** n/f

**Vapor Density:** n/f

**Evaporation Rate:** n/f

**Reactivity in Water:** n/f

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