



Material Safety Data Sheet

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RESIDUAL SOLVENTS MIX A - CLASS 2

Catalog Number: 1601281

Package Size: See label

Revision Date:

January 6, 2004

This reference standard contains residual solvents in DMSO. Specific hazards are not determined but it is expected to be combustible. DMSO is an irritant, is rapidly absorbed through skin, and may carry chemicals into the body via this route. Residual solvents are poison, toxic, irritant, and possible carcinogens. Concentrations of the residual solvents: Acetonitrile (75-05-8) 2050 ppm; Chlorobenzene (108-90-7) 1800 ppm; Cyclohexane (110-82-7) 19400 ppm; 1,2-Dichloroethene (540-59-0) 9350 ppm; Dichloromethane (75-09-2) 3000 ppm; 1,4-Dioxane (123-91-1) 1900 ppm; Methanol (67-56-1) 15000 ppm; Methylcyclohexane (108-87-2) 5900 ppm; Tetrahydrofuran (109-99-9) 3600 ppm; Toluene (108-88-3) 4450 ppm; Xylenes (1330-20-7; contain ethyl benzene [100-41-4]) 10850 ppm.

SECTION 1 - IDENTIFICATION

Common Name: Residual Solvents Mix A - Class 2

Formula: C₂H₆OS (DMSO)

Synonym: n/f

Chemical Name: n/f

CAS Number: 67-68-5 (DMSO)

RTECS Number: PV6210000 (DMSO)

Chemical Family: n/f

Therapeutic Category: Residual solvents

SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
Dimethyl Sulfoxide	92.2%	n/f
Class 2 Residual Solvents	7.73%	n/f

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

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and skin; swelling of face; troubled breathing; shortness of breath; and nasal congestion. Exposure to the residual solvents may cause central nervous system depression with headache, dizziness, drowsiness, and gastrointestinal disturbances. There is a risk of aspiration following xylenes ingestion, which may lead to pneumonitis and pulmonary edema. 1,4-Dioxane, toluene, and chlorobenzene may cause liver and kidney damage. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

Overdose Effects: Overexposure or exposure to high levels of residual solvents may cause narcotic-like effects, seizures, loss of consciousness, cardiac problems, respiratory arrest, coma, and death. In methanol toxicity, narcotic effects occur first, followed by a latent period of 10 to 48 hours, then more severe central nervous system effects, vision disturbances, seizures, metabolic acidosis, and coma occur. Blindness may be permanent. Acetonitrile is converted to cyanide in the body; effects of cyanide poisoning may be delayed 2 to 13 hours. Dichloromethane is metabolized to carbon monoxide, resulting in carboxyhemoglobin in the blood and possible carbon monoxide poisoning.

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

Chronic: Possible hypersensitization and cancer.

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

Eye: Causes irritation. Avoid contact. Flush with copious quantities of water.

Skin: Causes irritation. Avoid contact. Wash with copious quantities of soap and water for at least 15 minutes. DMSO readily penetrates skin and may enhance skin absorption of other chemicals.

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

Medical Conditions Aggravated by Exposure: Hypersensitivity to material.

Cross Sensitivity: n/f

Pregnancy Comments: Studies in hamsters, rats, and mice have shown that DMSO causes abnormal development when administered by injection at high doses; however, DMSO did not cause reproductive problems in animals when administered in oral or topical doses. Adverse reproductive effects have been seen in animal studies of some residual solvents.

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 should be symptomatic and supportive. Induced vomiting is not recommended because of the potential for seizures and central nervous system depression. Support respiratory and cardiac function. Some overdose symptoms may be delayed.

SECTION 5 - TOXICOLOGICAL INFORMATION

Oral Rat: LD50: 14500 mg/kg (DMSO)

Oral Mouse: LD50: 7920 mg/kg (DMSO)

Irritancy Data: RTECS - Rabbit/skin: mild; Rabbit/eye: mild (DMSO)

Target Organ(s): Central nervous system

Listed as a Carcinogen? NTP: Yes IARC: Yes OSHA: Yes

Other: Dichloromethane is listed as a carcinogen by NTP, IARC, and OSHA. 1,4-Dioxane is listed as a carcinogen by NTP and IARC.

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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:	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:	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 a thick plastic hazardous waste disposal bag or leakproof container and label it CAUTION: HAZARDOUS CHEMICAL WASTE. Wash spill site.
Disposal:	Place material in a thick plastic hazardous waste disposal bag or leakproof container and label it CAUTION: HAZARDOUS CHEMICAL WASTE. 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.

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Melting Point:	n/f	Vapor Density:	n/f
Solubility in Water:	n/f	Evaporation Rate:	n/f
Boiling Point:	n/f	Reactivity in Water:	n/f
Specific Gravity:	n/f	% Volatile by Volume:	n/f
Vapor Pressure:	n/f		