



Material Safety Data Sheet

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RESIDUAL SOLVENTS MIX C - CLASS 2

Catalog Number: 1601306

Package Size: See label

Revision Date:

March 2, 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 reproductive hazards. Concentrations of the residual solvents: N,N-Dimethylacetamide (127-19-5) 5450 ppm; N,N-Dimethylformamide (68-12-2) 4400 ppm; 2-Ethoxyethanol (110-80-5) 800 ppm; Ethylene glycol (107-21-1) 3100 ppm; Formamide (75-12-7) 1100 ppm; 2-Methoxyethanol (109-86-4) 250 ppm; N-methylpyrrolidinone (872-50-4) 2650 ppm; Sulfolane (126-33-0) 800 ppm

SECTION 1 - IDENTIFICATION

Common Name: Residual Solvents Mix C - 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	98.145%	n/f
Class 2 Residual Solvents	1.855%	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 and skin; swelling of face; troubled breathing; shortness of breath; and nasal congestion. Exposure to the

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residual solvents may cause central nervous system depression with headache, dizziness, drowsiness, gastrointestinal disturbances, and liver or 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, acidosis, loss of consciousness, cardiac problems, respiratory arrest, coma, and death. Toxic effects from ethylene glycol occur in three stages. Between 1/2 and 12 hours following ingestion effects are neurological and may include transient inebriation and euphoria, nausea, vomiting, metabolic acidosis, central nervous system depression, loss of reflexes, seizures, and coma. In 12 to 24 hours post-ingestion fast heart rate and high blood pressure may develop; severe metabolic acidosis with hyperventilation, multiple organ failure, and death may occur in severe poisonings. In stage three, 24 to 72 hours post-ingestion, kidney damage is characterized by decreased urination, acute tubular necrosis, and kidney failure. Bone marrow suppression may occur.

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

Chronic: Possible hypersensitization.

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. N,N-dimethylformamide has been associated with an increased risk of miscarriage in women. 2-ethoxyethanol has 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 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: No IARC: No OSHA: No

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Other: N,N-Dimethylformamide is not classifiable as to its carcinogenicity in humans.

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 a thick plastic hazardous waste disposal bag or leakproof container. Wash spill site.

Disposal: Place material in a thick plastic hazardous waste disposal bag or leakproof container. 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