RESIDUAL SOLVENT CLASS 2 - 1,4-DIOXANE

This reference standard contains 1,4-dioxane 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. 1,4-Dioxane is an irritant and possible carcinogen.

SECTION 1 - IDENTIFICATION

Common Name: 1,4-Dioxane
Synonym: Diethylene dioxide; diethylene ether; p-dioxane
Chemical Name: 1,4-Dioxane in dimethyl sulfoxide
CAS Number: 123-91-1 (1,4-Dioxane); 67-68-5 (DMSO)
RTECS Number: JG8225000 (1,4-Dioxane); PV6210000 (DMSO)
Chemical Family: Heterocyclic compounds (1,4-Dioxane)
Therapeutic Category: Residual solvent

SECTION 2 - INGREDIENT INFORMATION

<table>
<thead>
<tr>
<th>Principle Components</th>
<th>Percent</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,4-Dioxane</td>
<td>0.1900%</td>
<td>OSHA: TWA 100 ppm (skin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH: CL 1 ppm (30 min.); IDLH 500 ppm</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>99.81%</td>
<td>ACGIH: TWA 20 ppm (skin)</td>
</tr>
</tbody>
</table>

SECTION 3 - HEALTH HAZARD INFORMATION

Usual Adult Dose: n/f
RESIDUAL SOLVENT CLASS 2 - 1,4-DIOXANE

Catalog Number: 1601521  Package Size: See label  Revision Date: October 7, 2003

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. Ventilate spill site. Wipe up spillage. Avoid breathing vapors. Place spillage in appropriately labelled container for disposal. Wash spill site. 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.
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.
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

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