



Material Safety Data Sheet

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Responsible Party: Reference Standards Technical Services

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RESIDUAL SOLVENT CLASS 2 - CYCLOHEXANE

Catalog Number: 1601408

Package Size: See label

Revision Date: September 29, 2003

This reference standard contains cyclohexane 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. Cyclohexane is an irritant.

SECTION 1 - IDENTIFICATION

Common Name: Cyclohexane **Formula:** C₆H₁₂ (Cyclohexane); C₂H₆OS (DMSO)
Synonym: Hexamethylene, hexanaphthene
Chemical Name: Benzene, hexahydro- in dimethyl sulfoxide
CAS Number: 110-82-7 (Cyclohexane); 67-68-5 (DMSO) **RTECS Number:** GU6300000 (Cyclohexane); PV6210000 (DMSO)
Chemical Family: Alicyclic hydrocarbon (Cyclohexane)
Therapeutic Category: Residual solvent

SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
Cyclohexane	1.94%	OSHA: TWA 300 ppm NIOSH: TWA 300 ppm; IDLH 1300 ppm
Dimethyl sulfoxide	98.06%	

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. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

Overdose Effects: Exposure to high levels of cyclohexane may cause central nervous system depression, with symptoms including headache, nausea, weakness, dizziness, loss of coordination and judgement, seizures, loss of consciousness, coma, and death from respiratory paralysis.

Acute: Eye, skin, gastrointestinal and/or respiratory tract irritation.

Chronic: Possible hypersensitization.

Inhalation: Causes irritation. 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. Flush out mouth with water.

Medical Conditions

Aggravated by Exposure: Hypersensitivity to material.

Cross Sensitivity: n/f

Pregnancy Comments: Two-generation reproduction and developmental toxicity studies using rats and rabbits exposed to atmospheric cyclohexane did not show evidence of developmental toxicity.

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: Overdose treatment should be symptomatic and supportive. Support respiratory and cardiovascular function.

SECTION 5 - TOXICOLOGICAL INFORMATION

Oral Rat: LD50: 12705 mg/kg (Cyclohexane); 14500 mg/kg (DMSO)

Oral Mouse: LD50: 813 mg/kg (Cyclohexane); 7920 mg/kg (DMSO)

Irritancy Data: RTECS - Rabbit/skin: reaction not reported (Cyclohexane); Rabbit/skin,eye: mild (DMSO)

Target Organ(s): Central nervous system (Cyclohexane)

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.

Firefighting Procedures: As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing

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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 and label it CAUTION: HAZARDOUS CHEMICAL WASTE. 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: Colorless 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