



MATERIAL SAFETY DATA

Chemtrec 24-Hour Emergency Telephone

Domestic North America (800) 424-9300

International (800) 527-3887

This MSDS complies with 29 CFR 1910.1200 (Hazard Communications)

1. Product and Supplier Identification

Product Name: Polyurethane Resin Part A

Product Number: 26320010

Date of Prep: 08/10/2010

Product Type: Cycloaliphatic diisocyanate prepolymer

Supplier: Fiberlay Inc.
24 S. Idaho S.
Seattle, Wa 98134
(206)782-0660

2. Composition/Information On Ingredients

| Chemical Name | Wt.% | CAS |
|--|-------|-------------|
| Cycloaliphatic diisocyanate prepolymer | 60-80 | Proprietary |
| Dicyclohexylmethane-4,4'-diisocyanate | 15-30 | 005124-30-1 |
| Isophorone diisocyanate | 1-5 | 004098-71-9 |

3. Hazards Identification

Routes of Entry: Eye and skin contact, inhalation of vapors, or accidental ingestion.

Emergency Overview:

Physical Appearance: Clear viscous liquid with a slight odor.

Immediate Concerns:

Avoid eye and skin contact.

Avoid breathing vapors.

May cause eye and skin irritation.

Use in a well ventilated area.

Reacts slowly with water to produce carbon dioxide which may rupture closed containers; This reaction accelerates at higher temperatures.

Inhalation at levels above the occupational exposure limit could cause respiratory sensitization and risk of serious damage to respiratory system. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons.

Potential Health Effects:

Eyes: May cause irritation, tearing, reddening, and swelling. May cause slight corneal injury.

Skin: May cause irritation and possible allergic sensitivity. Skin inflammation is characterized by itching, scaling, or reddening.

Ingestion: Harmful if swallowed

Inhalation: May be harmful if inhaled. Inhalation at levels above the occupational exposure limit could cause respiratory sensitization and risk of damage to the respiratory system.

Medical Conditions Aggravated: May cause or aggravate dermatitis and asthma.

4. First Aid Measures

EYES: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Consult a physician.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

5. Fire Fighting Measures

Flash point and Method: 157°C (315°F) Pensky-Martens CC

Extinguishing Media: Water spray, carbon dioxide, dry chemical, or foam

Fire Fighting Procedures: Cool fire exposed containers with water spray. Remove containers from the fire area if possible. Do not release runoff from fire control methods to sewers or waterways.

Fire Fighting Equipment: Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and consider use of unmanned hose holders or monitor nozzles for fighting large fires.

Hazardous Combustion Products: Carbon monoxide and carbon dioxide, and nitrogen oxides.

6. Accidental Release Measures

Small Spill: Evacuate the area. Clean-up should only be performed by trained personnel. People dealing with a major spill should wear full protective clothing including respiratory protection. Prevent product spill from entering sewers or waterways. Neutralize small spills with a decontaminant.

Large Spill: Contain and absorb large spills onto an inert, non-flammable adsorbent carpet (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination if necessary. Wash the spill area clean with a liquid decontaminant. Remove and properly dispose of residues. Notify applicable government authorities if release is reportable (See CERCLA in Section 15).

Release Notes: US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

General Procedures: Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Avoid breathing vapor over open containers. Avoid open container exposure to damp air. Avoid breathing aerosols, mists, and vapors.

Handling: Use appropriate personal protective equipment as specified in Section 8. Handle in a well ventilated area. Handle and use in a manner consistent with good industrial manufacturing techniques and practices.

Storage: Store in a cool, dry place, away from excessive heat, in original or similar container. Avoid unnecessary contact. Protect from freezing. Containers should be tightly sealed to prevent contamination with foreign materials.

Shelf Life: 6 months from date of shipment under manufacturers recommended storage conditions.

8. Exposure Controls, Personal Protection

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

| | | EXPOSURE LIMITS | | | | | |
|--|------|-----------------|-------------------|-----------|-------------------|----------------------|----------------------|
| | | OSHA PEL | | ACGIH TLV | | Supplier OEL | |
| Chemical Name | | ppm | mg/m ³ | ppm | mg/m ³ | ppm | mg/m ³ |
| Cycloaliphatic diisocyanate prepolymer | TWA | NE | NE | NE | NE | NE | NE |
| | STEL | NE | NE | NE | NE | NE | NE |
| Dicyclohexylmethane-4,4'-diisocyanate | TWA | NE | NE | 0.005 | 0.054 | 0.01 ^[1] | 0.11 ^[1] |
| | STEL | NE | NE | NE | NE | NE | NE |
| Isophorone diisocyanate | TWA | | | 0.005 | 0.045 | 0.005 ^[1] | 0.045 ^[1] |
| | STEL | | | | | 0.02 ^[1] | 0.18 ^[1] |
| OSHA TABLE COMMENTS: | | | | | | | |
| 1. NIOSH REL (ceiling) | | | | | | | |

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal Protective Equipment:

Eye and Face Protection: Safety goggles are recommended. Pastic face shields should be used for complete face protection to protect against possible splashing or spraying of material. ANSI Z87.1 or approved equivalent.

Skin Protection: Chemical-resistant glove and chemical goggles face-shield, and synthetic apron or coveralls should be used to prevent contact with eyes, skin, or clothing. Wear nitrile or neoprene gloves. Chemical resistant gloves lined with polyethylene offer maximum protection

Respiratory Protection: Exhaust ventilation recommended. An organic vapor cartridge or fresh air supplied respirator (NIOSH approved) may be necessary for certain applications. Consider the type of application, environmental concentrations, and other materials being used concurrently when determining respirator use and selection. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Protective Clothing: Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.

Work Hygienic Practices: Contaminated clothing should be changed and washed before reuse. Eating, drinking and smoking in immediate work area should be prohibited. Wash hands before eating.

Other Use Precautions: Facilities storing or utilizing this material should be equipped with eyewash facility and a safety shower. Training is important. Follow all label precautions.

9. Physical and Chemical Properties

| | | | |
|-------------------------|------------------------|--|---|
| Physical State | Viscous Liquid | Boiling Point | Not established |
| Odor | Slight | Flashpoint & Method | 157°C (315°F) Pensky-Martens CC |
| Color | Colorless | Solubility in Water | Reacts slowly in water |
| pH | Not applicable | Specific Gravity | 1.050 (water = 1) at 25°C (77°F) |
| Percent Volatile | 0.03 | Viscosity | 6650 Centipoise at 25°C (77°F) |
| Vapor Pressure | < 1mmHg at 20°C (68°F) | VOC (Volatile organic Compound) | 0.320 g/l Calculated. Theoretical VOC minus water and exempt solvents |
| Vapor Density | Heavier than air | | |

10. Stability and Reactivity

Stability: This product is stable under normal ambient conditions of temperature and pressure.

Polymerization: May occur when exposed to heat in the presence of moisture, alkalies, tertiary amines, metal compounds.

Conditions to Avoid: Moisture, strong bases, alcohol, amines, metals, and oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide

Incompatible Materials: Moisture, acids, oxidizers, amines, and strong bases.

11. Toxicological Information

TOXICITY TO ANIMALS

| CHEMICAL NAME | ORAL LD ₅₀ (rat) | DERML.I.D ₅₀ (rabbit) | INHALATION LC ₅₀ (rat) |
|--|--------------------------------|-------------------------------------|--------------------------------------|
| Cycloaliphatic diisocyanate prepolymer | Not Established | Not Established | Not Established |
| Dicyclohexylmethane 4,4'-diisocyanate | Not Established | Not Established | Not Established |
| Isophorone diisocyanate | 4825 mg/kg | >7000 mg/kg | 0.04 mg/l (4 h of aerosols) |

12. Ecological Information

Ecotoxicological Information: No specific ecological data are available for this product. Refer to Section 6 for information regarding accidental release and Section 15 for regulatory reporting information.

13. Disposal Considerations

Disposal Method: The generation of waste should be avoided or minimized wherever possible. Disposal should be in accordance with local, state, provincial or national regulations.

Empty Container: Containers must be emptied as defined by RCRA, 40 CFR Section 261.7 or state regulations that may be more stringent) and either passed to approved recycler or destroyed.

14. Transport Information

DOT (Department of Transportation) Land:

NOTE: Not regulated

AIR (ICAO/IATA)

NOTE: Not regulated

VESSEL (IMO/IMDG)

15. REGULATORY INFORMATION

United States:

SARA Title III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories: Acute Health hazard. Chronic health hazard

313 Reportable Ingredients: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

EPCRA SECTION 313 SUPPLIER NOTIFICATION

| Chemical Name | Wt.% | CAS | Comments |
|---------------------------------------|-------|-------------|---|
| Dicyclohexylmethane-4,4'-diisocyanate | 15-30 | 005124-30-1 | Diisocyanate Compounds (Category Code N120) |

TSCA Status: This product or its components are listed in or exempt from the TSCA inventory requirements.

Occupational Safety and Health Administration (OSHA):

29 CFR1910.119---Process Safety Management of Highly Hazardous Chemicals: None of the chemicals in this product are considered highly hazardous by OSHA.

California Proposition 65: This product contains chemical(s) which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): None

16. Other Information

HMIS RATING:

Health 3
 Flammability: 1
 Physical Hazard: 1
 Personal Protection: X

NFPA

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Preparation Date: August 18, 2010

Prepared by: Fiberlay Inc

Comments: This Material Safety Data Sheet was prepared using information provided by Sewon Chemical Co. Ltd., Fiberlay Inc. and CCINFO.

Revisions: None

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