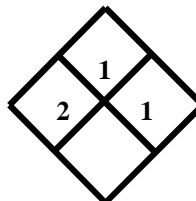


4917 Dawn Avenue
East Lansing, MI 48823-5691

8am to 5pm Phone: (517) 351-5900
24-Hour Emergency Phone: 1-888-354-3323

Effective Date: 1/20/04**Material Safety Data Sheet**

MSDS No: 34850

1. PRODUCT IDENTIFICATION**Trade Name:** RenCast 6498**Chemical Family:** Isocyanate**NFPA RATING**

Health:	2*
Flammability:	1
Reactivity:	1
Personal Protection:	

HMIS RATING**Intended Use or Product Type:** Polyurethane casting system**2. COMPOSITION / INFORMATION ON INGREDIENTS**

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS					CARCINOGEN STATUS		
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	101-68-8 Common Name:	Benzene, 1,1'-Methylenebis[4-Isocyanato-MDI	0.005 ppm	NE	0.02 ppm	NE	NE	NR	NR	NR
*	26447-40-5 Common Name:	Benzene, 1,1'-Methylenebis[Isocyanato-Diphenylmethane diisocyanate	NE	NE	NE	NE	NE	NR	NR	NR
*	39310-05-9 Common Name:	Benzene, 1,1'-Methylenebis(Isocyanato-, homopolymer Diphenylmethane diisocyanate homopolymer	NE	NE	NE	NE	NE	NR	NR	NR
*	78-40-0	Phosphoric Acid, Triethyl Ester	NE	NE	NE	NE	NE	NR	NR	NR
*	9048-58-2 Common Name:	Poly(oxy-1,4-butanediyl), .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] MDI prepolymer	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION**Emergency Overview:** Causes skin, eye, and respiratory irritations. May cause allergic skin and respiratory reactions.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

4. FIRST AID MEASURES

Ingestion: If conscious, give 2 - 4 glasses of water to drink. Do not induce vomiting. Call a physician.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Inhalation: Remove to fresh air. Call a physician.

Eyes: Immediately flush eyes with water for at least 15 minutes. Call a physician.

Overexposure Effects: Contact with liquid causes eye and skin irritation. If inhaled causes breathlessness, chest discomfort, and reduced pulmonary function. May cause allergic skin and respiratory reactions in some individuals, leading to asthma type spasms of the bronchial tubes and difficulty in breathing.

Medical Conditions Aggravated by Exposure: Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases, eye conditions or recurrent skin eczema or sensitization should be excluded from working with isocyanates.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point:	> 177°C (> 351 °F)
Flash Point Method Used:	Estimated
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Causes irritation if inhaled and can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: If a person is concerned with exposure to isocyanates, an organic respirator can provide protection at less than the TLV. It is not a requirement at an exposure level less than the TLV. For exposures in excess of the TLV, an air supplied respirator would be required. Conditions that may create exposures above the TLV are spray applications, the material being strongly heated in excess of 125F before application, or the use of material in poorly ventilated areas.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear to Cloudy
Physical State:	Liquid
Solubility in Water:	Reacts with water
Vapor Pressure:	0.027 mm Hg at 71°C (160 °F)
Specific Gravity:	1.15 (water = 1)
Boiling Point:	Not Determined
Evaporation Rate:	Not Determined
Vapor Density:	> 1 (Air = 1)
VOC:	0 g/L
pH:	Not Determined

Percent Volatile: Negligible.

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Inhalation Exposure Effects: Respiratory irritant.

Sensitization: May cause allergic skin reaction and respiratory sensitivity in some people.

Skin Irritation: Irritant.

Eye Irritation: Irritant.

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT: Non-Bulk

Proper Shipping Name: Resin compounds, N.O.I.

Department of Transportation: Not regulated as a hazardous material by the U.S. Dept. of Transportation (DOT) 49 CFR 172.101 hazardous materials table.

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not specifically listed as hazardous waste under RCRA (40 CFR 261). However, it is strongly recommended that compound be treated as a hazardous waste and disposed of accordingly.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product contains a toxic chemical(s) for routine annual toxic chemical release reporting under section 313 (40 CFR 372). This information must be included in all MSDS's copied or distributed for this material.

Chemical Name: Benzene, 1,1'-Methylenebis[4-Isocyanato-

Common Name: MDI

Percent in Composition: 28.9563 % by wt

Comment:

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

State Regulations:

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Poly(oxy-1,4-butanediyl), .alpha.-hydro.-omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene]

Common Name: MDI prepolymer

CAS Number: 9048-58-2

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Benzene, 1,1'-Methylenebis[4-Isocyanato-

Common Name: MDI

CAS Number: 101-68-8

Comment: Environmental Hazardous Substance

Chemical Name: Benzene, 1,1'-Methylenebis(Isocyanato-, homopolymer

Common Name: Diphenylmethane diisocyanate homopolymer

CAS Number: 39310-05-9

Comment: Not on Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

MSDS No:

34850

Approved By:

Dianne Blessing

Title:

EH&S Specialist

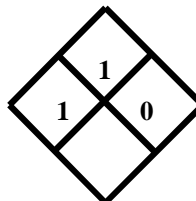
Disclaimer: The following supercedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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Effective Date: 1/20/04**Material Safety Data Sheet**

MSDS No: 34849

1. PRODUCT IDENTIFICATION**Trade Name:** Ren 6498**Chemical Family:** Polyol and Amine Blend**NFPA RATING**

Health:	1*
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING**Intended Use or Product Type:** Polyurethane casting system**2. COMPOSITION / INFORMATION ON INGREDIENTS**

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS					CARCINOGEN STATUS		
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
	102093-68-5 Common Name:	1,3-Benzenediamine, 4-Methyl-2,6-bis(Methylthio) Di-(methylthio) toluenediamine	NE	NE	NE	NE	NE	NR	NR	NR
	104983-85-9 Common Name:	1,3-Benzenediamine, 2-Methyl-4,6-bis(Methylthio)-Di-(methylthio) toluenediamine	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed

3. HAZARDS IDENTIFICATION**Emergency Overview:** May be harmful if swallowed.**Primary Route(s) of Entry:** Dermal; heated product may produce inhalable vapors.**Chronic:** Overexposure may have effects on kidney and liver.**4. FIRST AID MEASURES****Ingestion:** If conscious, give 2 - 4 glasses of water to drink. Do not induce vomiting. Call a physician.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Inhalation: Remove to fresh air. Call a physician.

Eyes: Immediately flush eyes with water for at least 15 minutes. Call a physician.

Overexposure Effects: May be harmful if swallowed.

Medical Conditions Aggravated by Exposure: Skin and eye conditions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point:	> 200°F (> 93 °C)
Flash Point Method Used:	Estimated
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

7. HANDLING AND STORAGE

Signal Word: Caution!

Precautions: May be harmful if swallowed. Avoid tasting or swallowing. Wash thoroughly after handling. Notice! Overexposure may have effects on kidney and liver.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Light Amber
Odor:	Typical
Physical State:	Liquid
Vapor Pressure:	Not Determined
Specific Gravity:	1.02 - 1.06 (water = 1)
Boiling Point:	Not Determined
Evaporation Rate:	Not Determined
Vapor Density:	Not Determined
pH:	Not Determined

Percent Volatile: Not Determined

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Effects (LD50): Component(s) are slightly toxic, 500 - 5000 mg/kg (rat).

Sub-Chronic: Butyl benzyl phthalate (BBP) produced liver necrosis and pancreatic lesions at a dose of approximately 675 mg/kg/day and 275 mg/kg/day, respectively, during a 90-day oral administration study with rats. The no observable effect levels (NOEL) were approximately 275 and 110 mg/kg/day, respectively.

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT: Non-Bulk

Proper Shipping Name: Resin compounds, N.O.I.

Department of Transportation: Not regulated as a hazardous material by the U.S. Dept. of Transportation (DOT) 49 CFR 172.101 hazardous materials table.

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any chemicals for routine annual toxic chemical release reporting under Section 313 (40 CFR 372).

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

State Regulations:

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol

Common Name: Polyether triol

CAS Number: 9082-00-2

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Hexanedioic acid, bis(2-ethylhexyl) ester

Common Name: Dioctyl adipate

CAS Number: 103-23-1

Comment: Environmental Hazardous Substance

Chemical Name: 1,3-Benzenediamine, 4-Methyl-2,6-bis(Methylthio)

Common Name: Di-(methylthio) toluenediamine

CAS Number: 102093-68-5

Comment: Not on Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

MSDS No: 34849

Approved By: Dianne Blessing

Title: EH&S Specialist

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