

P.O. Box 4980  
The Woodlands, TX 77387-4980

8 am to 5 pm Phone: (800) 257-5547  
24-Hour Emergency Phone: (800) 328-8501  
International Emergency Phone: (409) 727-0831  
Asia Pacific Emergency Phone: (65) 6336-6011

**Effective Date:** 6/11/10

**Material Safety Data Sheet**

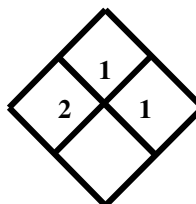
MSDS No: 6100

**1. PRODUCT IDENTIFICATION**

**Trade Name:** RenCast 6403-1

**MSDS Category:** Commercial Product

**Chemical Family:** Isocyanate



NFPA RATING

<b>Health:</b>	<b>2*</b>
<b>Flammability:</b>	<b>1</b>
<b>Reactivity:</b>	<b>1</b>
<b>Personal Protection:</b>	

HMIS RATING

**Synonyms:**  
RP 6403-1 Resin

**Intended Use or Product Type:** Polyurethane resin

**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: Concentration	Benzene, 1,1'-Methylenebis[4-Isocyanato-MDI 60.00 - 90.00 % by wt	0.005 ppm	NE	0.02 ppm	NE	NE	NR	NR	NR
*	26447-40-5 Common Name: Concentration	Benzene, 1,1'-Methylenebis[Isocyanato-Diphenylmethane diisocyanate 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	39310-05-9 Common Name: Concentration	Benzene, 1,1'-Methylenebis(Isocyanato-, homopolymer Diphenylmethane diisocyanate homopolymer 10.00 - 30.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	61788-32-7 Common Name: Concentration	Terphenyl, hydrogenated Plasticizer 1.00 - 5.00 % by wt	0.5 ppm	NE	0.5 ppm	NE	NE	NR	NR	NR
*	78-40-0 Concentration	Phosphoric Acid, Triethyl Ester 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR

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

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:** WARNING!!! Contains organic isocyanate. Causes severe eye and skin irritation and possible eye burns. Vapor or mist harmful if inhaled. Can cause allergic respiratory and skin reaction. Harmful if swallowed.

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

### 4. FIRST AID MEASURES

**Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

**Inhalation:** Remove to fresh air. Seek immediate medical attention.

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

**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

<b>Flash Point:</b>	> 230°F (> 110 °C)
<b>Flash Point Method Used:</b>	Estimated
<b>Flammable Limits in Air (Lower - % by volume):</b>	Not established
<b>Flammable Limits in Air (Upper - % by volume):</b>	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.

Effective Date: 6/11/10

## 7. HANDLING AND STORAGE

**Signal Word:** Isocyanate!

**Precautions:** Can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Can be harmful if inhaled. 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

<b>Appearance:</b>	Clear
<b>Color:</b>	Amber
<b>Physical State:</b>	Liquid
<b>Solubility in Water:</b>	Reacts with water
<b>Viscosity:</b>	35 - 50 cps at 25°C (77 °F)
<b>Vapor Pressure:</b>	0.11 mm Hg at 71°C (160 °F)
<b>Specific Gravity:</b>	1.17 - 1.21 (water = 1)
<b>Boiling Point:</b>	Not Evaluated
<b>Evaporation Rate:</b>	Not Determined
<b>Vapor Density:</b>	> 1 (Air = 1)
<b>VOC:</b>	0 g/L
<b>pH:</b>	Not Evaluated
<b>Coefficient of water/oil:</b>	Not Evaluated

## 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.

Effective Date: 6/11/10

**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.**Additional Information:** Disposal of Cured Product: This product when cured may contain very small quantities of organic mercury compounds. It is the responsibility of the user to determine if the selected disposal method complies with applicable regulations.**14. TRANSPORT INFORMATION****DOT: Non-Bulk****Proper Shipping Name:** Not Regulated**IATA: Non-Bulk****Proper Shipping Name:** Not Regulated**IMDG: Non-Bulk****Proper Shipping Name:** Not Regulated**TDG: Non-Bulk****Proper Shipping Name:** Not Regulated**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.

Effective Date: 6/11/10

**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: 60 - 90 % by wt

Comment: DIISOCYANATE COMPOUNDS

**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.

### **International Regulations:**

**Australian Inventory Status:** This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

**Canadian Inventory Status:** This product contains only chemicals that are currently listed on the Canadian Domestic Substance List.

**Canadian WHMIS:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. D2A, D2B

**European Inventory Status (EINECS):** This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

**Japanese Inventory Status:** This product contains one or more chemicals currently not on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

### **State Regulations:**

**California Proposition 65:** This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

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

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

Chemical Name: Terphenyl, hydrogenated

Common Name: Plasticizer

CAS Number: 61788-32-7

Comment: Hazardous Substance

Effective Date: 6/11/10

Chemical Name: Benzene, 1,1'-Methylenebis[Isocyanato-  
Common Name: Diphenylmethane diisocyanate  
CAS Number: 26447-40-5  
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Terphenyl  
CAS Number: 26140-60-3  
Comment: Special Hazardous Substance

## **16. OTHER INFORMATION**

**MSDS No:** 6100  
**Reason Issued:** 6/10 update  
**Approved By:** Matt Austin  
**Title:** EHS Chemist

**Other Information:** CLW (C10020030) [C25]

**Disclaimer:** The information and recommendations contained herein are based upon tests in controlled laboratory conditions, are believed to be correct, and are provided for the sole purpose of hazard communication as part of Huntsman's product safety program. This product has not been tested for, and therefore is not recommended or suitable for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended or likely, or for uses for which implantation within the human body is intended, and Huntsman assumes no liability for any such uses.

The information and recommendations contained herein are not intended to constitute performance information concerning the product, which is available in separate technical data sheets available from Huntsman upon request. Users are urged, and are urged to urge others who may come in contact with the product, to obtain and consult data sheets prior to purchase, use, transportation or storage of the product.

HUNTSMAN MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED TO REIMBURSEMENT OF BUYER'S PURCHASE PRICE, OR IN HUNTSMAN'S DISCRETION REPLACEMENT, OF THE PRODUCT IN RESPECT OF WHICH SUCH CLAIM IS MADE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED BY LEGAL NOTICES IN TECHNICAL DATA SHEETS, PRODUCT LITERATURE, AND/OR SALE DOCUMENTS. The foregoing DISCLAIMERS and LIMITATION OF LIABILITY supercede inconsistent or contradictory provisions in Buyer's documents.

USER SHOULD CONSULT A LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENTAL AGENCY TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT. HUNTSMAN DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.



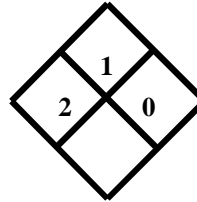


4917 Dawn Avenue  
East Lansing, MI 48823-5691

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

**Effective Date:** 10/13/04**Material Safety Data Sheet**

MSDS No: 6101

**1. PRODUCT IDENTIFICATION****Trade Name:** Ren 6403-1**Chemical Family:** Polyol

NFPA RATING

<b>Health:</b>	<b>2</b>
<b>Flammability:</b>	<b>1</b>
<b>Reactivity:</b>	<b>0</b>
<b>Personal Protection:</b>	

HMIS RATING

**Synonyms:**

RP 6403-1 Hardener  
TDT 178-76 Hardener

**Intended Use or Product Type:** Polyol hardener**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				
*	107-21-1 Common Name:	1,2-Ethanediol Ethylene glycol	NE	100 mg/m3	NE	NE	NE	NR	NR	NR
*	120-07-0 Common Name:	Ethanol, 2,2'-(Phenylimino)bis-N,N-Hydroxyethyl aniline	NE	NE	NE	NE	NE	NR	NR	NR

\* = OSHA Hazardous Ingredient

**3. HAZARDS IDENTIFICATION**

**Emergency Overview:** Causes skin and eye irritation.

**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.

---

**Effective Date:** 10/13/04

---

**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:** Causes skin and eye irritation.

**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**

<b>Flash Point:</b>	> 230°F (> 110 °C)
<b>Flash Point Method Used:</b>	Estimated
<b>Flammable Limits in Air (Lower - % by volume):</b>	Not established
<b>Flammable Limits in Air (Upper - % by volume):</b>	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:** Can cause skin and eye irritation. Avoid contact with eyes, skin, and clothing. 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:** 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.

Effective Date: 10/13/04

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Color:</b>	Off White
<b>Physical State:</b>	Liquid
<b>Solubility in Water:</b>	Slight
<b>Vapor Pressure:</b>	Not Determined
<b>Specific Gravity:</b>	1.06 (water = 1)
<b>Boiling Point:</b>	Not Determined
<b>Evaporation Rate:</b>	Not Determined
<b>Vapor Density:</b>	Not Determined
<b>VOC:</b>	63.07 g/L
<b>pH:</b>	Not Determined

**Percent Volatile:** Less than 1%.**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****Skin Irritation:** Irritant.**Eye Irritation:** Irritant.**Teratogenicity:** Contains Ethylene glycol. An inhalation teratology study has confirmed that ethylene glycol is teratogenic in CD-1 mice. Fetotoxicity was present at 1,000 and 2,500 mg/m as evidenced by reduced body weights and reduced ossification at numerous skeletal districts. Teratogenicity was demonstrated at 1,000 and 2,500 mg/m<sup>3</sup> as evidenced by a significantly increased incidence of malformations.**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.

Effective Date: 10/13/04

**Additional Information:** Disposal of Cured Product: This product when cured may contain very small quantities of organic mercury compounds. It is the responsibility of the user to determine if the selected disposal method complies with applicable 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):** D 009 contains mercury.

**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: 1,2-Ethanediol  
Common Name: Ethylene glycol  
Percent in Composition: 5.95 % 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:**

**California Proposition 65:** The following is required composition information. This product contains the following chemical(s) which are currently listed on the California list of Known Carcinogens and Reproductive Toxins:

Chemical Name: Mercury catalyst  
CAS Number: Held confidential by our supplier  
Percent in Composition: 0.26 % by wt  
Comment: Warning! This chemical is known to the State of California to cause birth defects or other reproductive harm.

Chemical Name: 2- Propenenitrile  
Common Name: Acrylonitrile

**Effective Date:** 10/13/04

CAS Number: 107-13-1

Percent in Composition: 0.0022 % by wt

Comment: Warning! This chemical is known to the State of California to cause cancer.

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

Chemical Name: Polymer Polyol

CAS Number: Confidential

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Ethanol, 2,2'-(Phenylimino)bis-

Common Name: N,N-Hydroxyethyl aniline

CAS Number: 120-07-0

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: 1,2-Ethanediol

Common Name: Ethylene glycol

CAS Number: 107-21-1

Comment: Environmental Hazardous Substance

**16. OTHER INFORMATION****MSDS No:**

6101

**Approved By:**

Dianne Blessing

**Title:**

EH&amp;S Specialist

**Disclaimer:** The information and recommendations contained herein are based upon tests in controlled laboratory conditions, are believed to be correct, and are provided for the sole purpose of hazard communication as part of Huntsman's product safety program. This product has not been tested for, and therefore is not recommended or suitable for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended or likely, or for uses for which implantation within the human body is intended, and Huntsman assumes no liability for any such uses.

The information and recommendations contained herein are not intended to constitute performance information concerning the product, which is available in separate technical data sheets available from Huntsman upon request. Users are urged, and are urged to urge others who may come in contact with the product, to obtain and consult data sheets prior to purchase, use, transportation or storage of the product.

HUNTSMAN MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED TO REIMBURSEMENT OF BUYER'S PURCHASE PRICE, OR IN HUNTSMAN'S DISCRETION REPLACEMENT, OF THE PRODUCT IN RESPECT OF WHICH SUCH CLAIM IS MADE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED BY LEGAL NOTICES IN TECHNICAL DATA SHEETS, PRODUCT LITERATURE AND/OR SALE DOCUMENTS. The foregoing DISCLAIMERS and LIMITATION OF LIABILITY supercede inconsistent or contradictory provisions in Buyer's documents.

USER SHOULD CONSULT A LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENTAL AGENCY TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT. HUNTSMAN DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

