

# Material Safety Data Sheet

**HUNTSMAN**  
Enriching lives through innovation

## 1. Product and company identification

Product name **RUBINATE® 1790** MSDS # 00002283

Product Use Component of a Polyurethane System

Huntsman Polyurethanes (an international business unit of Huntsman International LLC.)

10003 Woodloch Forest Drive  
The Woodlands, TX 77380

For Polyurethanes product information/assistance:

The Woodlands: (800) 257-5547

Auburn Hills: (800) 553-8624

Canada: (905) 678-9150

Email: MSDS@huntsman.com

Validation date : 2/6/2008.

### In Case of Emergency

Spills Leaks Fire or Exposure Call Chemtrec: (800) 424-9300

Medical Emergency Information: (800) 328-8501

In Mexico: 01 800 00 214 00

## 2. Hazards identification

Physical state : Liquid.  
Odor : slightly musty  
OSHA/HCS status : This material is classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).  
Emergency overview : WARNING

Harmful by inhalation. Irritating to eyes and respiratory system. May cause sensitization by inhalation and skin contact. This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons. The onset of the respiratory symptoms may be delayed for several hours after exposure.

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

GENERAL INFORMATION : Read the entire MSDS for a more thorough evaluation of the hazards.

## 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Isocyanates, reaction product of polyol with methylenediphenyl diisocyanate	proprietary	30 - 60
Diphenylmethane 4,4'- diisocyanate	101-68-8	30 - 60

## 7. Handling and storage

### Handling

- Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Storage

- Keep container in a cool, well-ventilated area. Keep container tightly closed. Keep away from moisture. Due to reaction with water producing CO<sub>2</sub>-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Do not reseal contaminated containers. Uncontaminated containers, free of moisture, may be resealed only after placing under a nitrogen blanket. Do not store in containers made of copper, copper alloys or galvanized surfaces.

## 8. Exposure controls/personal protection

### Product name

Diphenylmethane 4,4'- diisocyanate

### Exposure limits

#### ACGIH TLV (United States, 1/2006).

TWA: 0.05 mg/m<sup>3</sup> 8 hour(s).

TWA: 0.01 ppm 8 hour(s).

#### NIOSH REL (United States, 12/2001).

CEIL: 0.2 mg/m<sup>3</sup> 10 minute(s).

CEIL: 0.02 ppm 10 minute(s).

TWA: 0.05 mg/m<sup>3</sup> 10 hour(s).

TWA: 0.005 ppm 10 hour(s).

#### OSHA PEL (United States, 11/2006).

CEIL: 0.2 mg/m<sup>3</sup> 0 hour(s).

CEIL: 0.02 ppm 0 hour(s).

#### OSHA PEL 1989 (United States, 3/1989).

CEIL: 0.2 mg/m<sup>3</sup> 0 hour(s).

CEIL: 0.02 ppm 0 hour(s).

### Consult local authorities for acceptable exposure limits.

### Preventive Measures

- Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace. Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted.

### Engineering Controls

- Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.'

### Personal protection

#### Eyes

- Chemical safety goggles. If there is a potential for splashing, use a full face shield.

#### Skin

- The following protective materials are recommended: Gloves - neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long term use. Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.

## 11 . Toxicological information

### Toxicity data

#### Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure
Diphenylmethane 4,4'- diisocyanate	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>2240 mg/m <sup>3</sup>	1 hours
	LC50 Inhalation Dusts and mists	Rat	490 mg/m <sup>3</sup>	4 hours

### Potential acute health effects

- Ingestion** : Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.
- Inhalation** : Toxic by inhalation. May cause sensitization by inhalation.
- Eyes** : Irritating to eyes.
- Skin** : Irritating to skin. May cause sensitisation by skin contact. Animal studies have shown that respiratory sensitization can be induced by skin contact with known respiratory sensitizers including diisocyanates. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

### Potential chronic health effects

- Target organs** : Contains material which causes damage to the following organs: lungs, upper respiratory tract, skin.
- Carcinogenicity** : Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m<sup>3</sup>), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m<sup>3</sup> and no effects at 0.2 mg/m<sup>3</sup>. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.
- Mutagenicity** : There is no substantial evidence of mutagenic potential.
- Teratogenicity** : No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations, which are well in excess of defined occupational exposure limits.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

## 12 . Ecological information

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Diphenylmethane 4,4'- diisocyanate	-	Acute EC50 >1000 mg/L	Daphnia	48 hours
	-	Acute LC50 >1000 mg/L	Fish	96 hours

## 15 . Regulatory information

Components	Concentration	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity	Product Reportable Quantity
Diphenylmethane 4,4'- diisocyanate	45.82	Listed	5000	10912

This product does not contain nor is it manufactured with ozone depleting substances.

### SARA 313

<b>Form R - Reporting requirements</b>	<b>Product name</b> : Diisocyanate compound (category code N120)	<b>CAS number</b>	<b>Concentration</b> 46%
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SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

**California Prop 65** : No ingredients listed.

### Canada

**WHMIS (Canada)** : WHMIS Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
WHMIS Class D-2A: Material causing other toxic effects (Very toxic).  
WHMIS Class D-2B: Material causing other toxic effects (Toxic).

**CEPA (DSL)** : **Canada inventory:** All components are listed or exempted.  
HMIRC Registration Number: 6420  
(Claim for exemption granted. decision date 11-JAN-2006)

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

## 16 . Other information

**Label requirements** : Harmful by inhalation. Irritating to eyes and respiratory system. May cause sensitization by inhalation and skin contact. This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons. The onset of the respiratory symptoms may be delayed for several hours after exposure.

**Hazardous Material Information System (U.S.A.)** :

Health	Fire hazard	Reactivity
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**National Fire Protection Association (U.S.A.)** :



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**Date of issue** : 2/6/2008.  
**Date of previous issue** : 1/17/2008.  
**Notice to reader**

# MATERIAL SAFETY DATA SHEET

Date Prepared: 9/24/2012

Date Modified: 00/00/0000

Date Printed: 3/29/2021

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

### MATERIAL IDENTITY:

XRS 600 B  
Part B

### INFORMATION TELEPHONE:

920-803-1700

### COMPANY:

NOVOC Performance Resins, LLC  
3687 Enterprise Drive  
Sheboygan, WI 53083

### EMERGENCY TELEPHONE:

CHEMTREC: 800-424-9300

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### OSHA HAZARDOUS

Target Organ Effect: Corrosive

Target Organs: Lungs, Eyes

### GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

Health		Environmental		Physical
Acute Toxicity, Oral	Category 4	Harmful to Aquatic Life	Category 3	Not Classified
Skin Sensitization	Category 1			
Serious Eye Damage	Category 1			

Pictogram:



Signal Word

Danger

Hazard Statements	Precautionary Statements
H303 + H313 May be harmful if swallowed or in contact with skin H314 Causes severe skin burns and eye damage	P280 Wear protective gloves/protective clothing/eye protection/face protection P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P2310 Immediately call a POISON CENTER or doctor/physician.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical Characterization:

Ingredient(s)	CAS Number	% (by weight)
Polyether polyol	25791-96-2	30 - 90 %
Poly(Propylene Glycol)	25322-69-4	5 - 15 %
Butadiene-Acrylic Copolymer	Trade Secret	1%-5%

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## Methods and Materials for Containment and Cleaning Up

Stop the leak if it can be done without risk. Move containers from the spill area. Prevent entry into sewers, water ways or soils. Contain and collect spillage with non-combustible, absorbent material such as sand, earth, vermiculite or diatomaceous earth. Place in container for disposal according to local regulations via a licensed waste disposal contractor. Contaminated absorbent materials may pose the same hazards as the spilled product. See section 1 for emergency contact information and section 13 for waste disposal.

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## 7. HANDLING AND STORAGE

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### Precautions for Safe Handling

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Conditions for Safe Storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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Contains no substances with occupational exposure limit values

### Engineering Controls

Use local exhaust ventilation to maintain airborne concentrations below exposure limits. Respiratory protection may be required in addition to general room ventilation.

### Respiratory Protections

Use a properly fitted, air-purifying or air supplied respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### Eye Protection

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles or vapor. Contact lenses should not be worn.

### Skin and Body Protection

When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. Gloves should be impervious neoprene or rubber. Clean equipment thoroughly after each use.

### Other hygienic practices

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

### Other work practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

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## Respiratory or Skin Sensitization

No data available

## Mutagenicity

No data available

## Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as carcinogen or potential carcinogen by ACGIH

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP

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## 12. ECOLOGICAL INFORMATION

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### Aquatic Ecotoxicity for Polyoxypropylenediamine

Acute EC50 15 mg/l	Daphnia	48 hours
Acute IC50 135 mg/l	Algae	72 hours
Acute LC50 100 mg/l	Fish	96 hours

### Biodegradability Polyoxypropylenediamine

Persistent

### Mobility in soil Polyoxypropylenediamine

No data available

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## 13. DISPOSAL CONSIDERATIONS

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### Waste Disposal

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residuals. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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## 14. TRANSPORTATION INFORMATION

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### DOT (US)

UN Number: 2735      Class 8      Packing Group: III  
Proper Shipping Name: Amines, liquid, corrosive, N.O.S. (Polyoxypropylenediamine)  
Marine Pollutant: No      (Aldrich)  
Poison Inhalation Hazard: No      (Aldrich)

### IMDG

UN Number: 2735      Class 8      Packing Group: III      EMS-No: F-A, S-B  
Proper Shipping Name: Amines, liquid, corrosive, N.O.S. (Polyoxypropylenediamine)  
Marine Pollutant: No      (Aldrich)

### TDG

UN Number: 2735      Class 8      Packing Group: III  
Proper Shipping Name: Amines, liquid, corrosive, N.O.S. (Polyoxypropylenediamine)

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## 15. REGULATORY INFORMATION

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