

SAFETY DATA SHEET

Date Prepared: 7/23/2015

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1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

MATERIAL IDENTITY: Urethane Foam Resin
RR 600 Soil Stabilizer

INFORMATION TELEPHONE: 920-645-6205
800-526-2464

COMPANY:
Hydraulic Mudpumps, Inc
1025 East Albert Drive
Manitowoc, WI 54220

EMERGENCY TELEPHONE:
CHEMTREC: 800-424-9300

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Skin and Eye Irritant. Respiratory Irritant, Skin and Respiratory Sensitizer.

OSHA HAZARDOUS

Target Organ Effect: Irritant, Respiratory Toxicity

Target Organs: Respiratory, Eyes, Skin,

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

Health		Environmental	Physical
Acute Toxicity: Oral	Category 4	Not Classified	Not Classified
Acute Toxicity: Inhalation	Category 4		
Skin Corrosion/Irritation	Category 2		
Serious Eye Damage/Eye Irritation	Category 2B		
Respiratory Sensitization	Category 1		
Skin Sensitizer	Category 1		
Specific Target Organ Toxicity (Single Exposure) Respiratory Tract Irritant	Category 3		

Pictogram:



Signal Word **Danger**

Hazard Statements	Precautionary Statements
H302 Harmful if swallowed	P103 Read label before use.
H315 Causes skin and eye irritation	P261+P271 Avoid breathing vapor. Use only outdoors or in a well ventilated area.
H317 May cause an allergic skin reaction	P264 Wash hands thoroughly after handling.
H319 Causes serious eye irritation	P272 Contaminated work clothing should not be allowed out of the workplace.
H332 Harmful if inhaled	P280 Wear protective gloves, eye and face protection.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	P285 In case of inadequate ventilation wear respiratory protection.
H335 May respiratory irritation	P264 Wash hands thoroughly after handling.
	P270 Do not eat, drink, or smoke when using this product.
	P273 Avoid release to the environment.
	P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P311+P342 Call a POISON CENTER or physician if you feel

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	<p>unwell.</p> <p>P302+P350 IF ON SKIN: Wash with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse.</p> <p>P313+P333 If skin irritation or rash occurs: Get medical attention.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization:

Ingredient(s)	CAS Number	% (by weight)
4,4'-Diphenylmethane diisocyanate (MDI)	101-68-8	25 – 35 %
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	35- 45 %
Propylene Carbonate	108-32-7	15- 25 %
4,4'' MDI Homopolymer	70644-57-4	5 - 15%
Methylenediphenyl diisocyanate Homopolymer	25686-28-6	3 - 8%

4. FIRST AID MEASURES

Eyes Contact: Check for and remove any contact lenses. Immediately flush eyes gently with large amounts of water for at least 15 minutes. Retract eyelids often. Get prompt medical attention.

Skin Contact: Remove contaminated clothing. Wash the exposed area with plenty of soap and water. Flush w/lukewarm water for at least 15 minutes. An MDI Study has demonstrated that a polyglycol-based skin cleanser such as (such as D-Tam TM, PEG) or corn oil may be more effective than soap and water. Launder contaminated clothing before re-use. Seek medical attention if ill effect or symptoms develop.

Ingestion: Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Keep person warm, quiet and get medical attention if symptoms occur.

Inhalation: Wear appropriate respiration protection if vapor or mist is expected. If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention immediately. Treatment is symptomatic for primary irritation or bronchospasm.

Advice to physicians: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Conditions of Flammability

Flash Point closed cup 135 °C (275 °F)

Suitable extinguishing media for 2014)

Use extinguishing media appropriate to surrounding fire conditions. Foam, CO₂ or dry powder. Water may be used if no other media is available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous. Prevent washings from entering water courses. Keep fire exposed containers cool with water spray.

Hazardous Decomposition Products

Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons, and HCN.

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Fire Fighting Instructions

Wear self contained breathing apparatus (pressure-demand MSHA/NIOSH) approved or equivalent and protective clothing including PVC boots, gloves, safety helmet and protective clothing should be worn. See Section 10 – decomposition products possible. Contain runoff to prevent entry to water or drainage systems. In a fire or if heated, a pressure increase will occur and the container may burst.

Remark: Due to reaction with water producing CO₂ gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Containers may burst if overheated.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental Precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and Materials for Containment and Cleaning Up

Stop the leak if it can be done without risk. If the product is in solid form, spilled MDI flakes should be picked up carefully. The area should be vacuum cleaned to remove remaining dust particles. If the product is in liquid form: absorb spillage onto sand, earth or any suitable adsorbent material. Leave to react for at least 30 minutes. Shovel into open-top drums for further decontamination. Wash spill area with water. Test atmosphere for MDI vapor. Neutralize small spills with decontaminant (See Section 16). Remove and dispose of residual. See section 1 for emergency contact information and section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Put on appropriate personal protective equipment (see Section 8). Persons with a history or skin sensitization problems, asthma, allergies or chronic respiratory disease should not be employed in any process in which this product is used. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. 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 compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

General Hygiene Advice

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. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for Safe Storage

Store in accordance with local regulations. Keep container tightly closed in a cool well ventilated place. Keep away from moisture. Due to reaction with water producing CO₂ 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store in containers made of copper, copper alloys or galvanized surfaces.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

HAZARDOUS COMPONENT	PEL	STEL	TLV	Other
4,4'-Diphenylmethane diisocyanate (MDI) (101-68-8)	0.2 mg/m ³ Ceiling	NE	0.008pm ACGIH TWA	NE
Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)	NE	NE	NE	NE
Propylene Carbonate (108-32-7)	NE	NE	NE	NE
4,4'' MDI Homopolymer (70644-57-4)	NE	NE	NE	NE
Methylenediphenyl diisocyanate Homopolymer (25686-28-6)	NE	NE	NE	NE

Engineering Controls

Use local exhaust to provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Diisocyanates can only be smelled if the occupational exposure limit has been exceeded considerably.

Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Personnel with a history of asthma-type conditions bronchitis or skin sensitization should not work with MDI based products. The Occupational Exposure Limits listed do not apply to previously sensitized individuals. Sensitized individuals should be removed from any additional exposure.

Environmental Exposure Controls

Emissions from ventilation or work process equipment should be checked to ensure that they comply with the requirements of environmental protection legislation. In some cases fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Respiratory Protections

In case of inadequate ventilation 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 or the product and the safe working limits of the selected respirator.

Eye/Face 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 Hand Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Acceptable glove materials may include butyl rubber, natural latex, chloroprene for full contact. Nitrile rubber, polyvinyl chloride, viton for splash contact.

Skin and Body Protection

When skin contact is possible, protective clothing including should be selected based on the task being performed. Recommended skin and body protection include heavy cotton overall, or Tyvek-Pro disposable coveralls. Boots head and face protection impervious to this material should be worn.

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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, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	Viscous liquid
Color	Brown
pH	Not available
Melting/Freezing Temperature	-16.5 to - 12.3 °C (2.3 to 9.9 °F)
Boiling Point	200 °C / 392 °F
Flash Point	135 °C (275 °F)
Ignition Temperature	Not available
Autoignition Temperature	135 °C (275 °F)
Lower explosive limit; na	Upper explosive limit: na
Vapor Pressure	Not available
Vapor Density (air=1)	3.5 (Air = 1)
Specific Gravity (water=1 @39.2F)	1.26 @ 25C/77F
Percent Volatiles	20 %
Evaporation Rate (Bac=1)	Not available
Odor	Mild
Odor threshold	Not available

10. STABILITY AND REACTIVITY

Suprasec PMDI

Chemical Stability

Stable under recommended storage conditions

Possibility of Hazardous Reactions

Reaction with water (moisture) produces CO₂ gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures or if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

Conditions to Avoid

High temperatures, localized heat sources (i.e., drum or band heaters). Keep container tightly sealed.

Materials to Avoid

Water, alcohols, amines, bases, acids, strong oxidizers, strong acids strong alkalis.

Hazardous Decomposition Products

Combustion products may include: carbon oxides (CO, CO₂), nitrogen oxides (NO and NO₂), hydrocarbons, and HCN.

11. TOXICOLOGY INFORMATION

Toxicity

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Acute Toxicity

LD50: (Oral rat)	9,200 mg/kg	4,4'-Diphenylmethane diisocyanate
LD50: (Oral rat)	33,520 mg/kg	Propylene Carbonate
LD50: (Oral rat)	>10,000 mg/kg	4,4'-Diphenylmethane diisocyanate
LD50: (Dermal Rabbit)	> 9,400 mg/kg	4,4'-Diphenylmethane diisocyanate
LD50: (Dermal Rabbit)	> 2,000 mg/kg	Propylene Carbonate
LC50:(Inhalation Rat)	> 2.24 mg/l 4-hr	4,4'-Diphenylmethane diisocyanate
LC50:(Inhalation Rat)	0.49 mg/l 4-hr	Isocyanic acid,
polymethylenepolyphenylene		Ester

Skin Corrosion/Irritation

Skin Irritant

Serious Eye Damage/Eye Irritation

Eye Moderate Irritant

Respiratory

No information

Respiratory or Skin Sensitization

Respiratory sensitizer

Skin sensitizer

Mutagenicity

None Known

Carcinogenicity

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

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

12. ECOLOGICAL INFORMATION

Aquatic Ecotoxicity

4,4'-Diphenylmethane diisocyanate		
Acute 24 hr EC50 24 hr	0.35 mg/l	Daphnia magna
Acute 96 hr Static LC50	> 1000 mg/l	Fish
Isocyanic acid, polymethylenepolyphenylene		
Acute 24 hr EC50 24 hr	> 1000 mg/l	Daphnia magna
Acute 96 hr Static LC50	> 1000 mg/l	Fish
Propylene glycol		
Static 96 hr LC 50	> 1000 mg/l	Fish
Static 48 hr EC 50	> 1000 mg/l	Daphnia magna
Static 72 hr EC 50	> 929 mg/l	Algae

Chronic Toxicity

No Observed Effect Concentration (NOEC) in Daphnia magna is > 10 mg/l

No Observed Effect Concentration (NOEC) in Algae is 1,640 mg/l

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Biodegradability

Not readily biodegradable
Not bioaccumulative

Mobility in soil

Very Low

13. DISPOSAL CONSIDERATIONS

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 compliant with the requirements of environmental protection and waste disposal legislation and any regional, local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORTATION INFORMATION

DOT (US)

Proper Shipping Name: Other Regulated Substances, Liquid, N.O.S
Technical Name: Methylene Diphenyl Diisocyanate
Hazard Class: 9 ID Number: NA9032 Packing Group: PG III

IMDG

Not Regulated

TDG

Not Regulated

15. REGULATORY INFORMATION

TSCA INVENTORY STATUS

All components are listed or exempt

OSHA HAZARDS

Acute Toxicity, Skin, Respiratory, and Eye irritant, Sensitizer

HMIS Classification

Health Hazard;	4
Flammability	0
Physical Hazards	0

NFPA Rating

3
0
0

SARA TITLE III: Section 311/312 Hazard Class

Acute Health Hazard, Chronic Health Hazard

SARA TITLE III: Section 313 (40CFR 370)

The following components are subject to the reporting requirements of SARA Title III, Section 313:

4,4'-Diphenylmethane diisocyanate	101-68-8
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9

CERCLA Information (40CFR 302.4)

This material contains no hazardous or extremely hazardous substances at or above the de minimus concentrations as defined by CERCLA or SARA Title III, and release is therefore not reportable.

4,4'-Diphenylmethane diisocyanate	101-68-8	RQ 5000 lbs
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California Proposition 65 Information:

This product contains no listed substances known to the state of California to cause cancer and/or reproductive toxicity.

16. OTHER INFORMATION

Liquid decontaminants (percentages by weight or volume)

Decontaminant 1: *-sodium carbonate: 5 – 10 % *-liquid detergent: 0.2 – 2% *-water: to make up to 100%

Decontaminant 2: *-concentrated ammonia solution: 3 – 8 % *-liquid detergent: 0.2 – 2% *-water: to make up to 100%

Decontaminant 1 reacts slower with diisocyanates but is more environmentally friendly than decontaminant 2. Decontaminant 2 contains ammonia. Ammonia presents health hazards. (See supplier safety information.) Literature reference: PU 193-1 : 'MDI-Based Compositions : Hazards and Safe Handling Procedures.'

PU 181-15 : Recommended melting procedures for MDI-based isocyanates.

ISOPA Guidelines for safe Loading/Unloading, Transportation, Storage of TDI and MDI , Ref.03-96 PSC-0005-GUIDL. SPI PMDI User Guidelines for the Chemical Protective Clothing Selection.

References of methods used in the Physico-Chemical Properties section are reported in Annex V part A to Commission Directive 92/69/EEC of 31 July 1992 adapting to technical progress for the Seventeenth time Council Directive 67/548/EEC.

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this SDS was obtained from sources, which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. This SDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

*Note – qualifiers and codes that may be used in this MSDS

EQ=Equal; AP= Approximately; LT= Less Than; GT = Greater Than; TR =Trace; UK = Unknown; N/AP= Not Applicable; N/P = No Applicable Information Found; N/DA = No Data Available; NE = Not Established