

# MATERIAL SAFETY DATA



Approval Date: 6/24/2012

Supersedes Date:

## Section 1. Chemical Product and Company Identification

**Product Name:** *Uroflex 65, A Component*

**Chemical Name:** Prepolymer Blend

**Manufacturer:** Pilgrim Permocoat, Inc.

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## Section 2. Composition/Information on Ingredients

Name	CASRN	Percent (By Weight)	Exposure Limits		Carcinogen	Skin
			OSHA PEL TWA/STEL	ACGIH TLV TWA/STEL		
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	<30%	0.2ppm Ceiling .20mg/m <sup>3</sup> Ceiling	.005ppm TWA .051mg/m <sup>3</sup> TWA	No	Yes

## Section 3. Hazards Identification

### Emergency Overview

Musty smelling pale yellow liquid. Burns, but not ignited easily. May cause eye, skin, and respiratory tract irritation. Harmful if inhaled. May cause allergic respiratory reaction. May cause allergic skin reaction. May cause lung damage. Toxic gases/fumes are given off during burning or thermal decomposition.

The following ratings are subjective. They are provided as a quick hazard guide only. Read the entire MSDS before using the product.

### Hazard Rating System:

	Health	Flammability	Reactivity	Incompatibility	PPE
NFPA:	2	1	1	----	X
HMIS:	2*	1	1	----	X

0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, \* chronic health hazard

### **Potential Health Effects, Signs, and Symptoms of Exposure:**

**Inhalation:** Vapor or mist at concentrations above the TLV can irritate the respiratory tract. Persons with a pre-existing, nonspecific bronchial hyper-reactivity can respond to concentrations below the TLV. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema.

**Ingestion:** Acute ingestion can result in irritation of the mouth, stomach and digestive tract.

**Skin Contact:** Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Persons with skin sensitization can develop these symptoms from contact with liquid or vapors.

**Eye Contact:** Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur.

### **Section 4. First Aid Measures**

**Eyes:** Immediately flush with water, preferably lukewarm, for at least 15 minutes. Refer to physician or ophthalmologist for immediate follow-up.

**Skin:** Remove contaminated clothing. Wash affected area thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposure, get under safety shower after removing clothing, seek medical attention. For lesser exposure, seek medical attention if irritation develops or persists.

**Inhalation:** Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Seek medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this occur.

**Ingestion:** If swallowed, do not induce vomiting. Wash mouth out with water. Never give anything by mouth to an unconscious person. Get medical advice.

### **Section 5. Fire Fighting Measures**

Combustion may produce aromatic or aliphatic fragments, carbon monoxide, and carbon dioxide.

**Flash Point:** >216°C

**Auto-Ignition Temperature:** ND

**UEL/LEL:** NA

**Extinguishing Media:** Dry chemical; foam; carbon dioxide; water spray for large fires.

**Special Fire Fighting Procedures:** Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Refer to Section 10. Keep personnel away from smoke and fumes. At temperatures greater than 400°F polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use water to cool fire-exposed containers.

## Section 6. Accidental Release Measures

**Spill or Release Procedures:** Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment, including respiratory equipment during clean-up. If temporary control of isocyanate vapor is required, a blanket of protein foam may be placed over the spill. Large quantities may be pumped into closed, but not sealed, container for disposal. Minor spills can be treated with sawdust or other absorbent, shoveled into suitable unsealed containers, transported to well-ventilated area (outside) and treated with neutralizing solution: mixture of 80% water, 20% non-ionic surfactant, or 90% water, 3-8% concentrated ammonia and 2% detergent. Add about 10 parts neutralizer per part of isocyanate, with mixing. Allow to stand uncovered for 48 hours to let CO<sub>2</sub> escape. Clean-up by decontaminating floor with decontamination solution, letting it stand for at least 15 minutes.

## Section 7. Handling and Storage

**Handling:** Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Warning properties are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated MDI can be dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

**Storage:** 6 month shelf life. 64°F min/86°F max. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. If container is exposed to temperature at or above 400°F self-polymerization can occur resulting in pressurization and possibly rupture. MDI reacts slowly with water to form CO<sub>2</sub> gas. This gas can cause sealed containers to expand and possibly rupture.

## Section 8. Exposure Controls/Personal Protection

**Exposure Controls:** Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation.

### Personal Protection:

**Eye/Face:** Chemical goggles should be used in a splash hazard environment. For additional protection, chemical goggles should be used in combination with a full face shield.

**Skin:** Permeation resistant gloves (butyl rubber, nitrile rubber). Cover as much exposed skin area as possible with appropriate clothing.

**Respiratory:** Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn.

## Section 9. Physical and Chemical Properties

**Odor:** Slightly musty odor

**Appearance:** Pale yellow liquid

**Decomposition Temperature:** >400°F (204°C)

**Evaporation Rate:** NA

**Freezing/Melting Point:** Below 32°F (0°C)

**pH:** NA

**Specific Gravity:** 1.15 @ 77°F (25°C)

**Vapor Density:** 8.5 (Air=1)

**Vapor Pressure:** <0.00001 mm Hg @ 77°F (25°C) for MDI

**Percent Volatile:** Nil

**Solubility in Water:** Not soluble. Reacts slowly with water to liberate CO<sub>x</sub> gas.

## Section 10. Stability and Reactivity

**Chemical Stability:** Stable

**Incompatibility with Other Materials:** Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum.

**Hazardous Polymerization:** May occur; contact with moisture, other materials which react with isocyanates, or temperatures about 400°F (204°C), may cause polymerization.

**Hazardous Decomposition Products:** By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

## Section 11. Toxicological Information

**Toxicity Data For:** Diphenylmethane Diisocyanate (Monomeric and Polymeric)

**Oral LD50:** Greater than 10,000 mg/kg (rat).

**Dermal LD50:** Greater than 6,200 mg/kg (rabbit).

**Eye Effects:** Slight to moderate irritation (rabbit).

**Skin Effects:** Slight to moderate irritation (rabbit).

**Sensitization:** MDI has been shown to produce dermal sensitization laboratory animals. Intradermal or topical application followed by inhalation challenge have resulted in a respiratory sensitization response in guinea pigs. In addition, there is some evidence to suggest that cross-sensitization between different types of isocyanates may occur.

**Chronic Toxicity:** In a chronic inhalation exposure study, rats were exposed to an aerosol of polymeric MDI for 6 hours per day, 5 days per week for a period of two years. The exposure concentrations were 0, 0.2, 1.0 and 6.0 mg/m<sup>3</sup>. Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m<sup>3</sup>. The No Observable Effect Level (NOEL) was 0.2 mg/m<sup>3</sup>.

**Carcinogenicity:** In the same two year inhalation study described above, the occurrence of pulmonary adenomas (benign tumors) and a single pulmonary adenocarcinoma (malignant tumor) was considered to be related to the exposure. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m<sup>3</sup>.

**Mutagenicity:** Positive (salmonella microsome test with metabolic activation; cell transformation assay) as well as negative (mouse lymphoma specific locus mutation test with or without metabolic activation) results have been observed "in vitro". The use of certain solvents which rapidly hydrolyze MDI is suspected of producing Mutagenicity in some of these studies. MDI was negative in an "in vivo" (mouse micronucleus) assay.

## Section 12. Ecological Information

**Chemical Fate Information:** ND

**Aquatic Toxicity:** LC50-24 hr. (static) Greater than 500 mg/liter for Daphnia magna, Limnea stagnalis, and zebra fish (Brachydanio rerio) for polymeric and monomeric MDI.

**Biodegradability:** ND

## Section 13. Disposal Considerations

**Waste Disposal Method:** Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is perceived as the preferred method. As shipped, this material is neither a listed nor characteristic waste.

**Empty Container Precautions:** Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. Gases may be highly toxic.

**Transportation Emergencies:** INFOTRAC should be notified when this product is unintentionally released from its container during its course of distribution. Distribution includes transportation, storage incidental to transportation, loading and unloading.

## Section 14. Transport Information

### Land Transport (DOT)

Non-Regulated

### Sea Transport (IMODG)

Non-Regulated

### Air Transport (ICAO/IATA)

Non-Regulated

## Section 15. Regulatory Information

### **U.S. EPA CERCLA Hazardous Substances (40CFR302.4)**

#### Components

4,4'-Diphenylmethane Diisocyanate

#### Reportable quantity

5,000 lb

### **U.S. EPA SARA TITLE III: Section 311/312 Categorizations (40CFR370):**

Chronic Health Hazard

Acute Health Hazard

### **U.S. EPA Emergency Planning and Community Right-to-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40CFR 355, Appendix A):**

#### Components

None

### **U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40CFR372.65)-Supplier Notification Required:**

## Components

4,4'-Diphenylmethane Diisocyanate (MDI)

### **U.S. Toxic Substances Control Act:**

All components of this material are in compliance with the current inventory requirements.

### **State Right-to-Know Information**

The following chemical is specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
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### **California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

## **Section 16. Other Information**

### **Abbreviations:**

ACGIH – American Conference of Governmental Industrial Hygienists  
CASRN – Chemical Abstracts Service Registry Number  
IARC – International Agency for Research on Cancer  
N/A – Not Applicable  
N/D – Not Determined  
N/E – Not Established  
NTP – National Toxicology Program  
OSHA – Occupational Safety & Health Administration  
PEL – Permissible Exposure Limit  
PPE – Personal Protective Equipment  
STEL – Short Term (15 min.) Exposure Limit  
STP – Standard Temperature and Pressure  
TLV – Threshold Limit Value  
TWA – Time Weighted Average (8 hr.)

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