# FLOORMAX™ Coatings

Phone 877-TECH-986 (877-832-4986)

**MATERIAL SAFETY DATA SHEET**

Product: FLOORMAX™ Polyurea High Performance Coating Part: Iso
Date: July 3, 2012
Revision No: 1

**SECTION 1 Material**

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| Product Name: | FLOORMAX™ Polyurea High Performance Coating (Iso) |
| Chemical Family: | Aliphatic Polyisocyanate |
| Chemical Name: | Blend of IPDI/HDI based Polyisocyanate Prepolymers |
| Product Use: | Polyurea/Polyurethane Hardener |

**SECTION 2 Physical and Chemical Properties**

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|---|---|---|---|
| Form: | Liquid | Odor: | Slight |
| Color: | Clear/Pale Yellow | Odor Threshold: | not est. |
| Molecular Weight: | N/A | Solubility in Water % by WT: | Insoluble |
| Boiling Point: | N/A | Specific Gravity ($H_2O$=1): | 1.00 @ 20℃ |
| Vapor Pressure (at 20℃, mm Hg): | $1.8 \times 10^{-5}$ | Percent VOC's by Volume: | 0% |
| Vapor Density (air=1): | N/A | Evaporation Rate (butyl acetate = 1): | N/A |
| Freezing Point: | -74℉ (-59℃) | Viscosity (cps at 25° C): | N/A |
| Bulk Density (lbs/gal): | 8.3 | Percent Solids by Weight: | 75% |

**SECTION 3 Stability and Reactivity**

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| Stability: | Stable under normal conditions. |
| Conditions to Avoid: | N/A |
| Incompatibility (Materials to Avoid) | Water, amines, strong bases, alcohols |
| Hazardous Polymerization: | May occur; contact with moisture or other materials which react with isocyanates or temperatures above 400℉ may cause p olymerization. |
| Decomposition Products: | By high heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, HCN, HDI, and other undetermined aliphatic fragments. |

**SECTION 4 Hazard Identification**

| Material | CAS # | % | SARA 313 | OSHA | ACGIH |
|---|---|---|---|---|---|
| Homopolymer of HDI | 28182-81-2 | 30-85% | None | N/E | N/E. |
| IPDI Prepolymer | Proprietary | 15-55% | None | N/E | N/E |
| VOC Exempt Solvent | Proprietary | 10-40% | | | |
| Isophorone Diisocyanate | 4098-71-9 | <.5% | | | |

| | ppm | mg/m3 |
|---|---|---|
| OSHA PEL-TWA: | N/E | N/E |
| OSHA PEL STEL: | N/E | N/E |
| OSHA PEL CEILING: | N/E | N/E |
| ACGIH TLV-TWA: | N/E | N/E |
| ACGIH TLV STEL: | N/E | N/E |
| ACGIH TLV CEILING: | N/E | N/E |

N/E = Not Established

EMERGENCY OVERVIEW: May cause eye, skin, and respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. May cause allergic skin reaction. May cause lung damage.

ROUTES OF ENTRY: Inhalation; Skin Contact; Eye Contact

POTENTIAL HEALTH EFFECTS

EYES: Liquid, aerosol and vapors of this product may cause irritation

SKIN: May cause skin sensitization

INGESTION: None found

INHALATION: Can cause respiratory tract irritation. Certain individuals may develop isocyanate sensitization (asthma like symptoms).

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Asthma and other respiratory disorders (bronchitis, emphysema), skin allergies, eczema

CARCINOGENICITY:
Not listed by NW, IARC or regulated as a carcinogen by OSHA

HMIS HAZARD CLASSIFICATION 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe, *=Chronic Health Hazard
HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1

**SECTION 5 First Aid Measures**

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| Eye Contact: | Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. |
| Skin Contact: | Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. 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. Obtain medical attention. |
| Ingestion: | DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician immediately. Should vomiting occur keep patient's head lower than hip level to prevent aspiration. |

**NOTE TO PHYSICIAN**

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| Skin: | Treat symptomatically as for contact dermatitis. |
| Eyes: | Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation frequently. Workplace vapors could produce reversible corneal epithelial edema impairing vision. |
| Inhalation: | This product is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material must be removed from any further exposure to any isocyanate. |
| Ingestion: | Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritation nature of the product. |

**SECTION 6 Fire-Fighting Measures**

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| Flash Point (test method): | 365℉ (185℃) Setaflash (ASTM D-3243, D-3278, D-3828) |
| Flammable Limits: | None established. |
| Auto-Ignition Temperature: | Not established. |
| Extinguishing Media: | Water Spray, Dry Chemical, Foam, and $CO_2$. |
| Special Fire Fighting Procedures: | Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. |
| Decomposition Products: | (See Section 3) |
| Unusual Fire and Explosion Hazards: | None reported. |

**SECTION 7 Accidental Release Measures**

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| Steps to be taken if material is released or spilled: | Evacuate nonessential personnel. Remove all sources of ignition and ventilate the area. Notify appropriate authorities if necessary. Put on personal protective equipment (See Section 9). Dike or impound spilled material and control further spillage if feasible. Cover the spill with sawdust, vermiculite, Fuller's earth, or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. |
| Decontamination Solutions: | 1. Nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%). |
| Waste Disposal Method: | Waste must be disposed of in accordance with Federal, State, and Local Environmental Control Regulations. Incineration is the preferred method. If incinerated, toxic and corrosive combustion gases must be properly handled. |
| Empty Container Precautions: | Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner |

and in accordance with governmental regulations.

**SECTION 8 Handling and Storage**

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| Storage Temperature (min/max): | 30°F (-1°C) / 122°F (50°C) |
| Shelf Life: | 6 months at 77°F (25°C) after receipt o f material by customer. |
| Handling / Storage Precautions: | Storage of this product at temperatures greater than 122°F (50°C) can result in a significant increase in monomeric HDI content. Store in tightly closed containers to prevent moisture contamination. Nitrogen blanketing of material is recommended. |
| Technical Shipping Name: | Polyisocyanate Containing 1, 6-Hexamethylene Diisocyanate |
| Freight Class Bulk: | Isocyanate |
| Freight Class Package: | Chemicals, NOI (Isocyanate), NMFC 60000 |
| Product Label: | Product Label Established |
| | << DOT (DOMESTIC SURFACE) >> |
| Proper Shipping Name: | Other Regulated Substances, Liquid, N.O.S.* (contains Polymeric Hexamethylene Diisocyanate) |
| Hazard Class or Division: | 9 |
| UN/NA Number: | NA 3082 |
| Packing Group: | III |
| Hazardous Substance: | Hexamethylene-1, 6-Diisocyanate |
| DOT Product RQ: | 20,000 lbs. (9072.0 kgs.) |
| Hazard Label(s): | Class 9 |
| Hazard Placard(s): | Class 9 |
| | * When in individual containers of less than the Product RQ, this material ships as non-regulated. |
| | << IMO / IMDG CODE (OCEAN) >> |
| Hazard Class Division Number: | Non-Regulated |
| | << ICAO / IATA (AIR) >> |
| Hazard Class Division Number: | Non-Regulated |
| Special Sensitivity: | If container is exposed to high heat and/or moisture, it can be pressurized and possibly rupture explosively. HDI reacts slowly with water to form $CO^2$ gas. This gas can cause sealed containers to expand and possibly rupture explosively. |

**SECTION 9 Exposure Controls / Personal Protection Information**

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| Required Work/Hygiene Procedures: | Precautions must be taken so that persons handling this product do not allow contact with the eyes or skin. In spray operations, protection must be afforded against exposure to both vapor and spray mist. Educate and train all employees in the safe use of product. |
| Eye Protection Requirements: | Safety glasses, splash goggles, or face shield. Contact lenses should not be worn as eye protection but used with safety glasses, splash goggles or face shield for full protection. |
| Skin Protection Requirements: | Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol (PVA)). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. Tyvek suits with headcover is recommended for spray applications. |
| Respirator Requirements: | A respirator that is recommended or approved for use in isocyanate-containing environments (air purifying or fresh air supplied) is necessary for spray applications. |
| Additional Protective Measures: | Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions. |

**SECTION 10 Toxicology Information**
Toxicity Data for HDI homopolymer materials except where indicated.

| | ACUTE TOXICITY |
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| Oral LD50: | Estimated to be greater than 10,000 mg/kg (rats). Based on the results of actual tests conducted using specific HDI – homopolymer products. |
| Dermal LD50: | Estimated to be greater than 5,000 mg/kg (rabbits). Based on the results of actual tests conducted using specific HDI – homopolymer products. |
| Inhalation LC50: | Lower respiratory (pulmonary) irritant. LC50 values range from 137-1150 mg/m3 were obtained in rats exposed to aerosols (4 hr. exposure). |
| Eye Effects: | Severe irritant capable of inducing corneal injury (rabbit). Maximum primary eye irritation score: 54.6/110 for a 24 hr. exposure. |
| Skin Effects: | Moderate irritant; primary dermal irritation score: 3.4/8.0 (rabbit). |
| Sensitization: | Pulmonary and dermal sensitizer in animals and humans. Evidence exists that cross-sensitization between HDI and other isocyanates, particularly hydrogenated MDI and TDI, can occur. |
| Other Acute Effects: | Ames test – negative for Desmodur N-100 (100& solids material). |

**SECTION 11 Ecological Information**
ECOLOGICAL INFORMATION: None available

**SECTION 12 Disposal Considerations**
WASTE DISPOSAL METHOD: Waste must be disposed of in accordance with federal state and local environmental control regulations. Incineration is the preferred method.
RCRA HAZARD CLASS: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic

**SECTION 13 Regulatory Information**
U.S. FEDERAL REGULATIONS
TSCA (TOXIC SUBSTANCE CONTROL ACT):
On Inventory
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):
Reportable quantity 100 lbs
SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):
311/312 HAZARD CATEGORIES:
Immediate Health Hazard; Delayed Health Hazard; Reactive Hazard
313 REPORTABLE INGREDIENTS:
None

**SECTION 14 Other Information**
The information and recommendations contained herein are based on standard product and are proprietary and furnished solely for the use of our customers. While believed to be true and accurate, they are offered solely for your consideration, investigation, and verification, and no guarantee or warranty of any kind, expressed or implied, is made by FLOORMAX™ Coatings with respect to this data. The applicability of federal, state and local laws and regulations to this product information must be determined by the user.