

## SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product identifier**

Chemical Name	Mixture
Product Name / Trade Name	ISO-Guard™ ISO-101 Part A
CAS No.	Mixture

**Relevant identified uses of the substance or mixture and uses advised against**

Identified Use(s)	Industrial Flooring Resin
Uses Advised Against	None

**Details of the supplier of the safety data sheet**

Company Identification	Pilgrim Permocoat, Inc. 402 S. 22nd St. Tampa, FL 33605 United States of America 813 248 3328
Telephone	
<b>Emergency telephone number</b>	CHEMTREC 24 hr. 1-800-424-9300

### SECTION 2: HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

OSHA HCS (29 CFR 1910.1200)	Skin Sens. 1
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**Label elements**

**Hazard Symbol**



**Signal Word(s)**

**WARNING**

**Hazard Statement(s)**

May cause an allergic skin reaction.

**Precautionary Statement(s)**

Avoid breathing dust/fume/gas/mist/vapours/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Contaminated work clothing should not be allowed out of the work place.  
If on skin wash with plenty of soap and water.  
If skin irritation or rash occurs get medical advice/attention.  
Wash contaminated clothing before reuse.

**Other hazards**

Irritating to eyes.  
May cause sensitization by skin contact.  
35.475% of mixture consists of ingredients of unknown acute toxicity.

**Additional Information**

None

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition/information on ingredients	%W/W	CAS No.	Hazard Statement(s)
Secondary diamines	>25%	Proprietary	Skin Sens. 1; H317

Additional Information - None

## SECTION 4: FIRST AID MEASURES



### Description of first aid measures

Inhalation	Seek medical advice/attention. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.
Skin Contact	Wash off immediately with plenty of water for at least 20 minutes. Take off contaminated clothing and shoes immediately. If irritation occurs or persists get medical advice/attention.
Eye Contact	Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses if present. If irritation occurs or persists get medical advice/attention.
Ingestion	Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.

### General advice

Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.

### Most important symptoms/effects - acute and delayed

Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Eye disease. Skin disorders and Allergies. Asthma.

## SECTION 5: FIRE-FIGHTING MEASURES

### Extinguishing Media

Suitable Extinguishing Media	Alcohol-resistant foam. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Dry sand. Limestone powder
Unsuitable Extinguishing Media	None known.

### Special hazards arising from the substance or mixture

Ammonia gas may be liberated at high temperatures. In case of incomplete combustion an increased formation of oxides of nitrogen (NO<sub>x</sub>) is to be expected. Incomplete combustion may form carbon monoxide. May generate

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<b>Special protective equipment for fire-fighters</b>	ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.
	Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
<b>Further information</b>	Do not allow run-off from fire fighting to enter drains or water courses., Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.
<b>Environmental precautions</b>	Construct a dike to prevent spreading.
<b>Methods and material for containment and cleaning up</b>	Approach suspected leak areas with caution. Place in appropriate chemical waste container.
<b>Additional advice</b>	Open enclosed spaces to outside atmosphere. If possible, stop flow of product.

## SECTION 7: HANDLING AND STORAGE

<b>Precautions for safe handling</b>	
Handling	Spraying increases the risk of hazardous exposure. In atmospheres where the material is sprayed, workers should avoid contact with aerosols. Do not use sodium nitrite or other nitrating agent in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, do not eat, drink, or smoke.
Storage	Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Control parameters</b>	
<b>Occupational Exposure Limits</b>	Not available.
<b>Appropriate engineering controls</b>	Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.
<b>Personal protection equipment</b>	
Hygiene measures	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. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Discard contaminated leather articles. Ensure that eyewash stations and safety showers are close to the workstation location.

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Eye/face protection



Chemical resistant goggles must be worn.

Skin protection (Hand protection/  
Other)



Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Butyl-rubber gloves. Nitrile rubber gloves. Neoprene gloves.

Respiratory protection



Keep self contained breathing apparatus readily available for emergency use. Spraying increases the risk of hazardous exposure. In atmospheres where the material is sprayed, workers should avoid contact with aerosols through proper engineering controls such as exhaust ventilation and/or proper protective equipment such as full face air supplied respirators. Wear appropriate respirator when ventilation is inadequate.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Liquid
Color.	Light Yellow
Odor	Not available.
Odor Threshold (ppm)	Not available.
pH (Value)	Not available.
Melting Point (°C) / Freezing Point (°C)	Not available.
Boiling point/boiling range (°C):	Not available.
Flash Point (°C)	>200°F (>93°C)
Evaporation Rate	Not available.
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not applicable.
Vapour pressure (mmHg)	Not available.
Vapour Density (Air=1)	Not applicable.
Density (g/ml)	1.04 @ 25°C (8.70 lb/gal @ 25°C)
Solubility (Water)	Not available.
Solubility (Other)	Not available.
Partition Coefficient (n-Octanol/water)	Not available.
Auto Ignition Point (°C)	Not available.
Decomposition Temperature (°C)	Not available.
Viscosity	100 mPa*s @ 77°F (25°C)
<b>Other information</b>	No additional information.

## SECTION 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	No data available.

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## Incompatible materials

CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.

Nitrous acid and other nitrosating agents.  
Organic acids (i.e. acetic acid, citric acid, etc.)  
Mineral acids.

Sodium hypochlorite.

Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.

Oxidizing agents.

## Hazardous decomposition product(s)

Nitric acid.

Ammonia

Nitrogen oxides (NOx).

Nitrogen oxide can react with water vapors to form corrosive nitric acid.

Carbon monoxide.

Carbon dioxide (CO<sub>2</sub>).

Nitrosamine.

## Other hazards

No data available.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Likely routes of exposure

Effects on eye	Contact with eyes may cause irritation.
Effects on Skin	No data available.
Inhalation Effects	This product presents an elevated inhalation health risk when used in spray or aerosol applications. Harmful if inhaled and may cause delayed lung injury.
Ingestion Effects	No data available.
Symptoms	No data available.

#### Acute toxicity

Acute Oral Toxicity	No data is available on the product itself.
Inhalation	No data is available on the product itself.
Inhalation	No data is available on the product itself.
Acute Dermal Toxicity	No data is available on the product itself.
Skin corrosion/irritation	No data available.
Serious eye damage/eye irritation	Eye irritation.
Sensitization	No data available.

#### Chronic toxicity or effects from long term exposures

Carcinogenicity	No data available.
Reproductive toxicity	No data is available on the product itself.
Germ cell mutagenicity	No data is available on the product itself.
Specific target organ systemic toxicity (single exposure)	No data available.

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Specific target organ systemic toxicity (repeated exposure) No data available.  
Aspiration hazard No data available.

## Delayed and Immediate Effects and Chronic Effects from Short and Long Term Exposure

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. May cause allergic skin reaction. Eye disease., Skin disorders and Allergies.

## SECTION 12: ECOLOGICAL INFORMATION

### Ecotoxicity

**Aquatic toxicity** No data is available on the product itself.

**Toxicity to other organisms** No data available.

### Persistence and degradability Conclusion/Summary

Biodegradability No data is available on the product itself.

Mobility No data available.

Bioaccumulation No data is available on the product itself.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods** Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.

**Additional Information** None known.

## SECTION 14: TRANSPORT INFORMATION

	Land transport (U.S. DOT)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN number	Not Regulated	Not Regulated	Not Regulated
Proper Shipping Name			
Transport hazard class(es)			
Packing group			
Environmental hazards			
Special precautions for user			

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

## SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

TSCA (Toxic Substance Control Act) - Inventory Status: All components listed or polymer exempt.

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)
None	-----	-----	-----

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## SARA 311/312 - Hazard Categories:

Fire     Sudden Release     Reactivity     Immediate (acute)     Chronic (delayed)

## SARA 313 - Toxic Chemicals (40 CFR 372):

Chemical Name	CAS No.	Typical %wt.
None	-----	-----

## SARA 302 - Extremely Hazardous Substances(40 CFR 355):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)	TPQ (Pounds)
None	-----	-----	-----	-----

## Proposition 65 (California):

Chemical Name	CAS No.	Typical %wt.	Hazards
None	-----	-----	-----

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1 - 16.

### Hazard Statement(s) Listed in: SECTION 3

H317:May cause an allergic skin reaction.

Additional Information: Non.

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## SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product identifier**

Product Name / Trade Name

UR-101, Part B

**Relevant identified uses of the substance or mixture and uses advised against**

Identified Use(s)

Curing Agent for Urethane Coating

**Details of the supplier of the safety data sheet**

Company Identification

Pilgrim Permocoat, Inc.

402 S. 22nd St.

Tampa, FL 33605

United States of America

Telephone

1-888-737-8351 / 1-770-427-4034

**Emergency telephone number**

CHEMTREC 24 hr. 1-800-424-9300 / 1 (703) 527-3887  
(Collect calls accepted)

### SECTION 2: HAZARDS IDENTIFICATION

**GHS Classification**

Acute toxicity	-	Category 4
Specific target Organ toxicity	-	Category 3 (respiratory system)
Skin Sensitization	-	Category 1

**GHS Label Elements****Signal Word**

**WARNING**

**Hazard Statements**

H317: May cause an allergic skin reaction.  
H332: Harmful if inhaled  
H335: May cause respiratory irritation

**Precautionary Statements**

Prevention

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264: Wash hands thoroughly after handling.  
P363: Wash contaminated clothing before reuse.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.



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Response	P301+P330+P331 :IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 :IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338 :IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P310 :Immediately call a POISON CENTER or doctor/physician. P333+P313 :If skin irritation or rash occurs: Get medical advice/attention. P363 :Wash contaminated clothing before reuse.
Disposal	P501:Disposal of contents/container to be specified in accordance with regulations.
Hazards not otherwise classified	

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition/information on ingredients	CAS No.	Concentration (Weight)
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	95% - 100%
Hexamethylene-1,6-Diisocyanate	822-06-0	0.1% - 1%

**CHEMICAL FAMILY: Aliphatic Polyisocyanate**

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

General Advice	Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
Eye Contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention if irritation develops.
Skin Contact	Immediately remove contaminated clothing and shoes. Wash off with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. For severe exposures, immediately get under safety shower and begin rinsing. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.
Inhalation	If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to

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fresh air.

## Most important symptoms/effects - acute and delayed

Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Skin disorders, Allergies and Asthma.

## SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Water spray for large fires
Unsuitable Extinguishing Media	High Volume water jet
Fire Fighting Procedure	Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.
Hazardous Decomposition Products	By Fire and High Heat: Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), oxides of nitrogen (NO <sub>x</sub> ), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds
Unusual Fire/Explosion Hazards	Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO <sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment & Emergency Procedures	Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.
Environmental precautions	Construct a dike to prevent spreading.
Methods for cleaning up	Contact Res-Tek, Inc. for advice. Approach suspected leak areas with caution. Place in appropriate chemical waste container.
Additional Information	Open enclosed spaces to outside atmosphere. If possible, stop flow of product.

## SECTION 7: HANDLING AND STORAGE

Handling	Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent 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. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash
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thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

## Storage

### **Storage Period:**

6 Months @ 25 °C (77 °F): after receipt of material by customer

### **Storage Temperature**

Minimum: -34 °C (-29.2 °F)

Maximum: 50 °C (122 °F)

### **Storage Conditions**

Store separate from food products.

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### **Substances to Avoid**

Water, Amines, Strong bases, Alcohols, Copper alloys

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### **Engineering measures/Hygiene**

Provide readily accessible eye wash stations and safety showers.

Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

### **Personal protection equipment**

#### Respiratory protection

A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended.

#### Hand protection

Butyl-rubber Nitrile rubber. Neoprene gloves.  
Impervious gloves. PVC disposable gloves.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### Eye protection

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

#### Skin and body protection

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Gloves, long sleeved shirts and pants.

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Special instructions for protection and hygiene

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates.

## Exposure Limits

Hexamethylene-1,6-Diisocyanate (822-06-0)  
(28182-81-2)

US. ACGIH Threshold Limit Values      0.005 ppm  
Time Weighted Average (TWA):

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid. Colorless to light yellow
Odor	Odorless
Odor threshold	No data available
pH	No data available
Melting point/range	No data available
Boiling point/range	Not applicable @ 1,013 hPa, decomposition
Flash point	358 °F (181 °C)
Evaporation rate	No data available
Flammability (solid, gas)	Not applicable
Upper/lower explosion/flammability limit	Not applicable
Vapor pressure	9.3 x 10 <sup>-6</sup> mmHg at 70 °F (21 °C)
Water solubility	Insoluble – Reacts slowly with water to liberate CO <sub>2</sub> gas
Relative vapor density	Not applicable
Relative density	9.66 lb/gal at 70° (21°C)
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	896 °F (480 °C)
Decomposition temperature	No data available.
Viscosity	2,500 cPs @ 70°F (21°C)

## SECTION 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to avoid	Heat, flames and sparks.
Materials to avoid	Water, Amines, Strong bases, Alcohols, Copper alloys
Hazardous decomposition product(s)	By Fire and High Heat: Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), oxides of nitrogen (NO <sub>x</sub> ), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds
Possibility of hazardous Reactions/Reactivity	Contact with moisture, other materials that react with isocyanates, or temperatures above 350° F (177° C), may cause polymerization

## SECTION 11: TOXICOLOGICAL INFORMATION

**Likely routes of exposure**

Skin contact  
Inhalation  
Eye contact

**Acute Toxicity**

Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the

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respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

## Chronic Toxicity

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent.

Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

## Toxicity Data for Homopolymer of Hexamethylene Diisocyanate

### Toxicity Note

#### Acute Oral Toxicity

#### Acute Inhalation Toxicity

Data is based on a similar product, including residual monomer.

LD50: > 5000 mg/kg (rat, female) (OECD Test Guideline 423)

LC50: 0.554 mg/l, 4 h (rat)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

### Skin Irritation

rabbit, slight irritant

### Eye Irritation

rabbit, slight irritant

### Sensitization

Skin sensitization according to Magnusson/Kligmann (maximizing test):

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positive (guinea pig, OECD Test Guideline 406)

## Repeated Dose Toxicity

Subchronic inhalation toxicity, rat:

Test concentration – 0.4, 3.4 and 21.0 mg aerosol/m<sup>3</sup> exposure time - 13 weeks (6 hours a day, 5 days a week) 3.4 mg/m<sup>3</sup> was tolerated without damage (NOEL), 21.0 mg/m<sup>3</sup> caused increase of lung weight. No evidence of histopathological changes in the upper and central respiratory passages. Unspecific changes in the lower respiratory tract; these are attributed to the product's primary irritation potential. Evidence of damage to organs other than the organs of respiration was not found.

## Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects.

Genetic Toxicity in Vivo:

Micronucleus test: negative (mouse)

## Toxicity Data for Hexamethylene-1,6-Diisocyanate

### Acute Oral Toxicity

LD50: 746 mg/kg (rat, male) (OECD Test Guideline 401)

LD50: 959 mg/kg (rat, male) (OECD Test Guideline 401)

### Acute Inhalation Toxicity

LC50: 0.124 mg/l, 4 h (rat, male/female) (OECD Test Guideline 403)

Acute Dermal Toxicity

LD50: > 7000 mg/kg (rat, male/female) (OECD Test Guideline 402)

### Skin Irritation

rabbit, OECD Test Guideline 404, Corrosive

### Eye Irritation

rabbit, OECD Test Guideline 405, Corrosive

### Sensitization

dermal: sensitizer (guinea pig, Maximization Test (GPMT))

Other isocyanates have been shown to produce dermal and respiratory sensitization in several species (guinea pigs, mice, rabbits, dogs). In addition, there is some evidence to suggest that cross-sensitization between different types of diisocyanates may occur.

dermal: sensitizer (Human, Case Report)

Respiratory sensitization: sensitizer (guinea pig)

## Repeated Dose Toxicity

2 years, inhalation: NOAEL: < 0.005 ppm, LOAEL: 0.005 ppm, (rat, Male/Female, 6 hrs./day 5 days/week) Irritation to lungs and nasal cavity.

## Mutagenicity

**Genetic Toxicity in Vitro:**

Salmonella/microsome test (Ames test): negative (Salmonella typhimurium, Metabolic Activation: with/without)

Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

**Genetic Toxicity in Vivo:**

Micronucleus test: negative (mouse, male/female, Inhalative).

## Carcinogenicity

Rat, male/female, Inhalative, 2 yrs., 6 hours/day, 5 days/week, Did not show carcinogenic effects in animal experiments.

## Toxicity to Reproduction/Fertility

Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test, Inhalative, 6 hours/day 7 days/week, (rat, male/female) NOAEL (F2): 0.3 ppm Fertility and

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developmental toxicity tests did not reveal any effect on reproduction.

## Developmental Toxicity/Teratogenicity

Rat, female, inhalation, gestation days 0 - 19, daily, NOAEL (teratogenicity): >0.3 ppm, NOAEL (maternal): < 0.3 ppm No Teratogenic effects observed at doses tested. No fetotoxicity observed at doses tested.

## Neurological Effects

Rats exposed by inhalation, 6 hours/day, for approximately 3 weeks, to concentrations as high as 0.3 ppm showed no neurobehavioral effects or damage to nerve tissues.

## Carcinogenicity

No carcinogenic substances as defined by IARC, NTP and/or OSHA

## SECTION 12: ECOLOGICAL INFORMATION

### Ecological Data for Homopolymer of Hexamethylene Diisocyanate

Biodegradation	1 %, Exposure time: 28 d, i.e. not readily degradable
Acute and Prolonged Toxicity to Fish	LC50: > 100 mg/l (Danio rerio (zebra fish), 96 h)
Acute Toxicity to Aquatic Invertebrates	EC50: > 100 mg/l (Daphnia magna (Water flea), 48 h)
Toxicity to Aquatic Plants	ErC50: > 100 mg/l, (scenedesmus subspicatus, 72 h)
Toxicity to Microorganisms	EC50: > 100 mg/l, (activated sludge, 3 h)
Additional Ecotoxicological Remarks	Data is based on a similar product, including residual monomer.

### Ecological Data for Hexamethylene-1,6-Diisocyanate

Biodegradation	aerobic, 42 %, Exposure time: 28 d, i.e. not readily degradable
Bioaccumulation	value calculated, 57.6 BCF An accumulation in aquatic organisms is not to be expected. value calculated, 3.2 BCF An accumulation in aquatic organisms is not to be expected. Studies of hydrolysis products.
Acute and Prolonged Toxicity to Fish	LC0: >= 82.8 mg/l (Danio rerio (zebra fish), 96 h)
Acute Toxicity to Aquatic Invertebrates	EC0: >= 89.1 mg/l (Daphnia magna (Water flea), 48 h)
Toxicity to Aquatic Plants	ErC50: > 77.4 mg/l, (Desmodesmus subspicatus (Green algae), 72 h)
Toxicity to Microorganisms	EC50: 842 mg/l, (activated sludge, 3 h)

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste from residues / unused products

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

### Contaminated packaging

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

# Urocel-101 Part B

## SECTION 14: TRANSPORT INFORMATION

DOT	Non-regulated
IATA	Non-regulated
IMDG	Non-regulated
TDG	Non-regulated
Further information	The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact Res-Tek, Inc.

## SECTION 15: REGULATORY INFORMATION

### United States Federal Regulations

US Toxic Substance Control Act (TSCA) 12(b) Component(s):	Listed on the TSCA Inventory.
US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:	None
SARA Section 311/312 Hazard Categories:	Acute Health Hazard
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:	None
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:	None
US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):	Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

### State Right-To-Know Information

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

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists: Weight percent	Components	CAS-No.
>=95%	Homopolymer of Hexamethylene Diisocyanate	28182-81-2
0.1 - 1%	Hexamethylene-1,6-Diisocyanate	822-06-0
New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists: Weight percent	Components	CAS-No.
0.1 - 1%	Hexamethylene-1,6-Diisocyanate	822-06-0

**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.



# Urocel-101 Part B

Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

## SECTION 16: OTHER INFORMATION

### HMIS Rating

Health	3
Flammability	1
Physical hazard	0
Revision Date	07/25/2022

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