

SECTION 1: IDENTIFICATION**Product Identifier****Product Form:** Mixture**Product Name:** HARDENER 561, HARDENER 561BU**Intended Use of the Product****Use of the Substance/Mixture:** No use is specified.**Name, Address, and Telephone of the Responsible Party****Company**

Helmitin Inc.

99 Shorncliffe Rd

Toronto, Ontario, M8Z 5K7

877.823.2624

11110 Airport Road

Olive Branch, MS 38654

Phone: 877.823.2624

www.helmitin.com

Emergency Telephone Number**Emergency Number** : CANUTEC 613-996-6666 / CHEMTREC 1-800-424-9300**SECTION 2: HAZARDS IDENTIFICATION****Classification of the Substance or Mixture****Classification (GHS-US)**

Acute Tox. 4 H332

Skin Sens. 1 H317

STOT RE 3 H335

Full text of H-phrases: see section 16

Label Elements**GHS-US Labeling****Hazard Pictograms (GHS-US)** :

GHS07

Signal Word (GHS-US) :

Warning

Hazard Statements (GHS-US) :: H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.**Precautionary Statements (GHS-US)** : P260 Do not breathe mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302+P352 If on skin: Wash with plenty of water.
P314 Get medical advice/attention if you feel unwell.
P333+P313 If skin irritation occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards

On contact with water carbon dioxide is released.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)
Polyisocyanate based on HDI	(CAS No) 125252-47-3	80 -100

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Move the person away from the contaminated area. Fresh air and rest. If necessary seek medical advice. Show this sheet to the doctor. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

Skin Contact: Use appropriate protective equipment when treating a contaminated person. Immediately remove any clothing soiled by the product. Wash with soap and water. Wash immediately and thoroughly for a prolonged period (at least 15 minutes). In case of inflammation (redness, irritation, ...) obtain medical attention. Place contaminated clothing in a sealed bag for disposal.

Eye Contact: Immediately rinse with plenty of running water for a prolonged period, (at least 15 minutes) while keeping the eyes wide open. If irritation persists, consult a doctor. Show this sheet to the doctor.

Ingestion: NEVER attempt to induce vomiting. Rinse mouth out with water. Do not give anything to drink. Get medical attention. Show this sheet to the doctor.

Notes to Physician

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic.

Most Important Symptoms and Effects Both Acute and Delayed

Acute

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

Delayed

Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Danger

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Skin Contact: Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical, Carbon dioxide (CO₂), Foam, water spray for large fires.

Unsuitable Extinguishing Media: High volume water jet.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Combustible liquid. During combustion toxic vapors are released.

Explosion Hazard: Product is not explosive.

Reactivity: Reacts with water releasing large amounts of carbon dioxide which may cause pressure build-up in confined spaces.

Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), 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 (CO₂ 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.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

Protection During Firefighting:

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.

Additional Information

Stay upwind.

Evacuate the personnel away from the fumes.

In case of fire close by: Cool down the containers/equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product. Do not breathe fumes. Do NOT attempt to fight the fire without suitable protective equipment.

If there is a fire close by and if packaging has not been damaged: Use suitable extinguishers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Avoid contact with skin and eyes.

Do not breathe gas.

Do NOT approach from DOWNWIND.

Do NOT attempt to take action WITHOUT suitable protective equipment.

Self-contained breathing apparatus.

Full impermeable protective clothing and equipment.

Mark out the contaminated area with signs and prevent access to unauthorized personnel.

Environmental Precautions

Spill and Leak Procedures

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Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management. Call CHEMTREC at 1-800-424-9300 for assistance and advice.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g., vermiculite, kitty litter, Oil-Dri®, etc...). Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Check for residual surface contamination using Swype® test kits, available from Colorimetric Laboratories, Inc. (CLI) at 847-803-3737. If the Swype® test pad demonstrates that isocyanate remains on the surface (red color on pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color change on Swype® pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

Methods and Material for Containment and Cleaning Up

Products or product mixtures that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment that have been in contact with an isocyanate includes:

Products available through industrial suppliers:

·Spartan Chemical Company: 1-800-537-8990:

·Spartan® ShineLine Emulsifier Plus

·Spartan® SC-200 Heavy Duty Cleaner

·Colorimetric Laboratories, Inc. (CLI): 1-847-803-3737

·Isocyanate Decontamination Solution

·Mix equal amounts of the following:

·Mineral spirits (80%), VM&P Naphtha (15%), and household detergent (5%), and

·A 50-50 mixture of monoethanolamine and water

In a separate container, blend the two solutions in a 1:1 ratio by volume. Immediately prior to applying this blended neutralization solution onto the contaminated surface area, mix or agitate the container to help ensure uniform mixing of the ingredients.

the above products are not available, the following products can be obtained through retail outlets:

· ZEP® Commercial Heavy-Duty Floor Stripper

· Greased Lightning® Super Strength Cleaner and Degreaser

· EASY OFF® Grill and Oven Cleaner or EASY OFF® Fume Free Oven Cleaner

· A mixture of 50% Simple Green® Pro HD Heavy-Duty Cleaner and 50% household ammonia

· A mixture of 90% Fantastic® Heavy Duty All Purpose Cleaner and 10% household ammonia.

Note: Always wear proper PPE when cleaning up an isocyanate spill and using a neutralization solution. It may take two or more applications of the neutralization solution to decontaminate the surface. Check for residual surface contamination using a surface wipe method such as the CLI Swype® pad.

Reference to Other Sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Handling/Storage Precautions

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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 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 Period:

6 Months: after receipt of material by customer

Storage Temperature

Minimum: 0 °C (32 °F)

Maximum: 30 °C (86 °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

Control Parameters

Polyisocyanate based on HDI (125252-47-3)

Exposure Limit

Time weighted average 0.5 mg/m³

Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m³

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

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Personal Protective Equipment:

General protective and hygienic measures:

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.

Breathing equipment:

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. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections. Observe OSHA regulations for respirator use (29 CFR 1910.134). **SPRAY APPLICATION:** A. Good industrial hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of coatings containing this product the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: -the airborne isocyanate concentrations are not known; or -the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or -the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or -operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -The airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and -the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup. **NON-SPRAY OPERATIONS:** A. During non-spray operations such as mixing, batch-making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: - the airborne isocyanate concentrations are not known; or - the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or - the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or - operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -the airborne concentrations of the isocyanate monomer are below 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); and - the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over eight (8) hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

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· Protection of hands:



Protective gloves

Gloves should be worn. Nitrile rubber gloves, Butyl rubber gloves, Neoprene gloves. The selection of gloves must take into account the extent and duration of use at the workstation.

Material of gloves Nitrile rubber, Butyl rubber, Neoprene.

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.



Tightly sealed goggles

Body protection: Protective work clothing

Skin 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.

Medical Surveillance

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. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

Additional Protective Measures

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Pale Yellow or Blue
Odor	: Mild
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not applicable
Freezing Point	: Not available
Boiling Point	: Decomposition
Flash Point	: Approximately 181°C (357°F)
Auto-ignition Temperature	: Ca. 445°C (833°F) (DIN51794)
Decomposition Temperature	: ca. 290°C (554°F)
Flammability (solid, gas)	: Not available

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Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: 1.15g/mL
Specific Gravity	: 1.15 @ 20°C (68°F)
Solubility with Water	: Insoluble – Reacts slowly with water to liberate CO ₂ gas.
Solubility with Ketones	: Soluble
Solubility with Aromatic Hydrocarbons	: Soluble
Solubility with Esters	: Soluble
Segregation Coefficient: N-Octanol/Water	: Not available
Viscosity	: 900 – 1,800 centipoise @ 25 °C (77 °F)
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Hazardous Reactions

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization.

Stability

Stable under normal conditions of use and storage.

Materials to Avoid

Water, Amines, Strong bases, Alcohols, Copper alloys

Conditions to Avoid

Heat, flames and sparks. Protect from freezing.

Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:

Skin Contact
Inhalation
Eye Contact

Health Effects and Symptoms

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

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Chronic: 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.

Prolonged vapor contact with the eyes may cause conjunctivitis.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Toxicity Data:

Data on the product is not available.

Toxicity Data for Polyisocyanate based on HDI Toxicity

Note

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

Acute Oral Toxicity

LD50: > 2000 mg/kg (rat)

Acute Inhalation Toxicity

LC50: 0.39 mg/l, 4 h, dust/mist(rat, female) (OECD Test Guideline 403)

Toxicological studies of a comparable product. 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 expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 2000 mg/kg (rabbit, male/female)

Studies of a comparable product.

LD50: > 2000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Studies of a comparable product.

Skin Irritation

rabbit, OECD Test Guideline 404, slight irritant

Studies of a comparable product.

Eye Irritation

rabbit, OECD Test Guideline 405, slight irritant

Studies of a comparable product.

Sensitization

Skin sensitisation according to Magnusson/Kligmann (maximizing test):: positive (Guinea pig, OECD Test Guideline 406)

Studies of a comparable product.

Mutagenicity

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Genetic Toxicity in Vitro:

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

Studies of a comparable product.

SECTION 12: ECOLOGICAL INFORMATION

Ecological Data:

Data on the product is not available.

Ecological Data for Polyisocyanate based on HDI Biodegradation

2 %, Exposure time: 28 d, i.e. not readily degradable

Acute and Prolonged Toxicity to Fish

LC50: 17.8 mg/l (Danio rerio (zebra fish), 96 h)

Acute Toxicity to Aquatic Invertebrates

EC50: 58 mg/l (Daphnia magna (Water flea), 48 h)

Toxicity to Aquatic Plants

ErC50: > 100 mg/l, (scenedesmus subspicatus, 72 h)

Toxicity to Microorganisms

EC50: > 10,000 mg/l, (activated sludge)

Studies of a comparable product.

Additional Ecotoxicological Remarks

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

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. 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.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

United States Federal Regulations US. Toxic Substances Control Act: Listed on the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

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:

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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.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 03/14/2019

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

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

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2015