

## Material Safety Data Sheet

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### Section 1 – Chemical Product and Company Identification

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Product Name: GZN 1510 Part A  
 Product Use: Component of polyurethane.  
 Effective Date: 11/20/10

In an emergency call CHEMTREC @ 800-424-9300

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### Section 2 – Composition/Information on Ingredients

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Ingredients(s)	%(by wt.)	OSHA TLV(ACGIH)	CAS NO.
Homopolymer of Hexamethylene Diisocyanate (HDI)	> 95 %	Not Established	28182-81-2
Hexamethylene-1,6- Diisocyanate (HDI)	< 0.7 %	(.005 ppm TWA)	822-06-0

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### Section 3 – Hazards Identification

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#### EMERGENCY OVERVIEW

Warning! Color: Clear, Pale yellow; Form: Liquid; Odor: Odorless; Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. Causes eye irritation. May cause lung damage.

**Routes of Entry:** Skin Contact; Eye Contact; Inhalation

#### Human Effects and Symptoms of Overexposure:

**Acute Inhalation:** Inhalation of vapors and mist of product at concentration above the applicable exposure limit can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing 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 limit with similar symptoms as well as an asthma attack or asthma-like symptoms. Exposure well above the exposure limit may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitive 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.

**Chronic Inhalation:** As a result of previous repeated overexposures or a single large dose, certain individuals will develop sensitization to Diisocyanates or Polyisocyanates (asthma or asthma-like

symptoms) which will cause them to react to a later exposure to Diisocyanates or Polyisocyanates at levels well below the applicable exposure limits. These symptoms, which 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. Chronic overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent.

- Acute Skin Contact:** Causes 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.
- Chronic Skin Contact:** Prolonged contact can cause reddening, swelling, rash and in some cases, skin sensitization. Animal test and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.
- Acute Eye Contact:** Causes irritation with symptoms of reddening, tearing, stinging and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.
- Chronic Eye Contact:** Prolonged vapor contact may cause conjunctivitis.
- Acute Ingestion:** May cause irritation; Symptoms may include abdominal pain, nausea, vomiting and diarrhea.
- Chronic Ingestion:** None known.
- Carcinogenicity:** This product and its components are not listed by NTP, IARC or regulated as a carcinogen by OSHA
- Medical Conditions Aggravated by Exposure:**  
Skin allergies, asthma and any other respiratory disorders (bronchitis, emphysema, hyperreactivity), eczema.

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#### Section 4 – First Aid Measures

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- 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 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.
- Inhalation:** Move to an area free from risk of further exposure. 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. Extreme asthmatic reactions can be life threatening.
- Ingestion:** Do not induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.
- Note to Physicians:** Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation frequently. Work place vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a potent 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 irritation nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from exposure to any diisocyanate.

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**Section 5 – Fire Fighting Measures**

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<b>Flash Point:</b>	>338°F (170°C)
<b>Extinguishing Media:</b>	Dry chemical; Carbon Dioxide; Foam; Water spray for large fires.
<b>Special Fire Fighting Procedures:</b>	Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. 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.
<b>Unusual Fire/Explosion Hazards:</b>	Closed container may explode when exposed to extreme heat or burst when 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.

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**Section 6 – Accidental Release Measures**

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**For major spills call Chemtrec (800) 424-9300.**

**Spills, Leaks, or Releases:** Evacuate non-emergency personnel. Isolate the area and prevent access. Remove all sources of ignition. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Notify appropriate authorities if necessary.

**Major Spill or Leak (Standing Liquid):** To minimize vapor, cover the spillage with fire fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat.

**Minor Spill or Leak (Wet Surface):** Cover spill area with suitable absorbent material (Kitty litter Oil-Dri, etc.). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO<sub>2</sub>) escape. Do not seal containers, as product may have been exposed to moisture and will react to form CO<sub>2</sub> which will pressurize in a sealed container and risk explosive rupture.

**Additional Spill Procedures/Neutralization Solutions:**

1. Colormetric Laboratories Inc. (CLI) decontamination solution.
2. A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia and 2% liquid detergent.

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**Section 7 – Handling and Storage**

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**Storage Temperature (Min/Max):** - 30°F (- 34°C)/ 86°F (30°C)

**Shelf Life:** 6 Months @ 77°F (25°C)

**Special Sensitivity:** Diisocyanate reacts slowly with water to form CO<sub>2</sub> gas. This gas can cause sealed containers to expand and possibly rupture explosively. Store in tightly closed containers to prevent moisture contamination. Do not reseal container if contamination is suspected.

**Handling/Storage Precautions:** Do not breath 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.

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 Section 8 – Exposure Controls/Personal Protection
 

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**Required Work/**

- Hygiene Procedures:** 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 emission into the work place. 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.
- 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.
- Hand Protection:** Gloves should be worn. Nitrile rubber gloves, Butyl rubber gloves, Neoprene gloves.
- 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.
- Respiratory Protection:** In some situations, a respirator may be necessary in addition to ventilation. The use of a positive pressure air-supplied respirator is mandatory when: airborne isocyanate concentrations are not known or exceed 0.005 ppm; operations are performed in a confined space or area with limited ventilation; material is heated or sprayed. An air-purifying respirator is not generally recommended based on the poor warning properties of Diisocyanate or Polyisocyanate (e.g. lack of odor or irritation). By the time the worker would detect, by odor or irritation, leakage of the face seal or breakthrough of the filter cartridge, his exposure could be well above the applicable exposure limit. Consider the type of application, airborne isocyanate concentrations and material being used concurrently when determining respirator use and selection. Observe OSHA regulations for respirator use (29 CFR 1910.134).
- Medical Surveillance:** Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with pulmonary function tests (FEV<sub>1</sub>, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.
- Additional Protective Measures:** Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions.

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 Section 9 – Chemical and Physical Properties
 

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**Physical Form:** ..... Liquid  
**Color:** ..... Clear, Pale Yellow  
**Odor:** ..... Odorless  
**Boiling Point:** ..... Decomposes  
**Melting Point:** ..... Below 77 F (25 C)  
**Solubility (Water):** ..... Partially soluble; reacts slowly to release CO<sub>2</sub> gas  
**Bulk Density:** ..... 9.33 lbs./gal  
**Specific Gravity:** ..... 1.12  
**Viscosity:** ..... Not Established

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 Section 10 – Stability and Reactivity
 

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<b>Stability:</b>	This is stable material under normal conditions of use and storage.
<b>Hazardous Reactions:</b>	Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization.
<b>Incompatibilities:</b>	Water, amines, Strong bases, Alcohols, copper alloys
<b>Instability Conditions:</b>	Moisture and high heat
<b>Decomposition Products:</b>	By high heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, dense black smoke, Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds.

#### Section 11 – Toxicology Information

LD50 Oral: > 5000 mg/kg (Rat)

#### Section 12 – Ecological Information

This substance may be toxic to fish and aquatic organisms. Do not release to water or sewer. Avoid releasing to the environment.

#### Section 13 – 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.

**Empty Container Precautions:** Empty containers must be handled with care due to product residue. Do not heat or cut empty container with electric or gas torch. Do not reuse without commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

#### Section 14 – Transportation Information

**Land Transportation DOT:** Not Regulated in Non-Bulk Packaging

**Sea Transportation:** Not Regulated in Non-Bulk Packaging

**Air Transportation:** Not Regulated in Non-Bulk Packaging

#### Section 15 – Regulatory Information

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material. To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. GlowZone Inc does not undertake to furnish advice on such matters.

**United States Federal Regulations:**

**OSHA Hazcom Standard Rating:** Hazardous

**US Toxic Substances Control Act:** Listed on the TSCA Inventory

**US EPA CERCLA Hazardous Substances (40 CFR 302):**

None

**SARA Section 311/312 Hazard Categories:**

Acute Health Hazard, Chronic Health Hazard, Reactivity 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): 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:

None

**US EPA Resource Conservation and Recovery Act (RCRA) composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):**

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

**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 MSDS may also be applicable for state requirements. For details of your regulatory requirement you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

CAS NO.	Component(s)	%(by wt.)
28182-81-2	Homopolymer of Hexamethylene Diisocyanate (HDI)	> 95 %

**New Jersey Environmental Hazardous Substances List and/or New Jersey, RTK Special Hazardous Substances Lists:**

CAS NO.	Component(s)	%(by wt.)
822-06-0	Hexamethylene-1,6- Diisocyanate (HDI)	< 0.7 %

**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**

HMIS Rating: Health: 2\* Flammability: 1 Reactivity: 1

The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication as part of GlowZone Inc's product safety program. It is not intended to constitute performance information concerning the product. No Express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

Company: GlowZone Inc

Rev Date: 11/20/10