# Material Safety Data Sheet

## Product: Syntho-Glass

**MSDS Date:** 03/16/2010
**Product Name:** Syntho-Glass
**Manufacturer:** Neptune Research, Inc.

## I. Product and Company Description

Neptune Research, Inc.
1346 S. Killian Drive
Lake Park, FL 33403

**Emergency Phone Number:**
800-535-5053

**For Product Information:**
(561) 683-6992

**Product Description:**
Fiberglass cloth impregnated with water activated resin

**Product Use:**
Intended to repair pipes or for corrosion control.

**Chemical Name or Synonym:**
NA

**Molecular Formula:**
NA

## II. Chemical Composition

| Component | CAS# | %Composition |
|---|---|---|
| Homologues of methylene bisphenyl isocyanate | 9016-87-9 | 5-10 |
| Methylene bisphenyl isocyanate | 101-68-8 | 1-5 |
| Polypropylene Polyol | 25322-69-4 | 5-15 |

## III. Hazards Identification

### A. Emergency Overview:

**Physical Appearance and Odor:**
Fiberglass cloth, coated with viscous resin with no odor

### B. Potential Health Effects:

**Acute Eye:**
Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage, however is usually reversible.

**Acute Skin:**
Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Acute Inhalation:**
Although MDI is low volatility, an inhalation hazard can exist from MDI aerosols or vapors formed during heating, foaming or spraying. Can irritate mucous membranes, cause runny nose, sore throat, coughing, and other symptoms.

**Acute ingestion:**
Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract. Symptoms can include: sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Chronic effects:**
Prolonged skin contact can cause reddening, swelling, rash, scaling or blistering and in some cases, skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapor. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. These data reinforce the need to prevent direct skin contact with MDI.

**Medical Conditions Aggravated by Exposure:**
Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyper reactivity), skin allergies, eczema.

## IV. First Aid Measures

### First Aid Measures for Accidental:

**Eye Exposure:**
Flush with copious amount of water. Preferably lukewarm, for at least 15 minutes, holding eyelids open at all times. Refer individual to a physician or ophthalmologist for immediate follow up.

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

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

**Ingestion:**
Do not induce vomiting. Give one to two cups of milk or water to drink. Do not give anything by mouth to an unconscious person, consult a physician.

**Notes to Physician:**
Eyes: stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision
Skin: This compound is a known skin sensitizer. Treat symptomatically for contact dermatitis or thermal burns, if burned treat as a thermal burn.
Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound.
Respiratory: This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. Removing exposed individual to any isocyanate.

## V. Fire Fighting Measures

### Fire Hazard Data:

**Flash Point:** 370°F

**Method Used:** Pensky-Martens Closed Cup

**Flammability Limits (vol/vol%):** **Lower:** N/A **Upper:** N/A

**Extinguishing Media:**
Carbon Dioxide, foam, dry chemical. Water spray for large fires.

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

**Unusual Fire and Explosion Hazards:**
None

**Hazardous Decomposition Materials (Under Fire Conditions):**
Combustion produces carbon monoxide, oxides of nitrogen, and traces of HCN, MDI vapors or aerosols.

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## VI. Accidental Release Measures

**Cleanup and Disposal of Spill:**
Normal housekeeping practices. Pick up and contain any spilled material.

Dispose of materials according to the applicable Federal, State, or local regulations.

## VII. Handling and Storage

**Handling:**
No special procedures are necessary when handling this product.

**Storage:**
Store in a well-ventilated, cool, dry place.

## VIII. Exposure Controls / Personal Protection

**Exposure Guidelines:**

| Component | Exposure limits | | |
|---|---|---|---|
| | ACGIH | NIOSH | OSHA-PELs |
| Homologues of methylene bisphenyl isocyanate | ND | ND | ND |
| Methylene bisphenyl isocyanate | 3 mg/m3, respirable | ND | 0.02 ppm Ceiling (STEL)<br>0.2 mg/m3 Ceiling(STEL) |
| Polypropylene Polyol | ND | ND | ND |

**Engineering Controls:**
Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS.

**Respiratory Protection:**
Not required under anticipated use conditions.

**Eye / Face Protection:**
Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

**Skin Protection:**
Permeation resistant gloves (butyl rubber, nitrile, and polyvinyl alcohol). However, please note that polyvinyl alcohol degrades in water. Cover as much of the exposed area as possible, with protective clothing. If skin creams are used, keep the area covered by the cream to a minimum.

## IX. Physical and Chemical Properties

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| | |
|---|---|
| **Physical Appearance:** | Fiberglass cloth, coated with viscous resin. |
| **Odor:** | None |
| **pH:** | ND |
| **Specific Gravity:** | 1.22 |
| **Water Solubility:** | Insoluble |
| **Melting Point Range:** | NA |
| **Vapor Pressure:** | 0.0003 mm Hg |
| **Percent Volatiles by Volume:** | Negligible |

## X. Stability and Reactivity

**Chemical Stability:**
Stable under standard use and storage conditions.

**Conditions to Avoid:**
Contamination with water

**Materials / Chemicals to be Avoided:**
Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum

**Hazardous Decomposition Products:**
Carbon Monoxide, Oxides of nitrogen, traces of HCN, MDI vapors or aerosols

**Hazardous Polymerization:**
Contact with moisture, other materials which can react with isocyanates or temperatures above 400°, may cause polymerization.

## XI. Toxicological Information

**For Monomeric and Polymeric Methylene Bisphenyl Isocyanate:**
Oral LD50 (rats): >15,800 mg/kg
Dermal LD50 (rabbits): 7,900 mg/kg
Inhalation LC50: ~370-490 mg/m3 for an aerosol of polymeric MDI (Rats four hours). An LC50 (two hours) of greater 400 mg/m3 was determined on a dust of monomeric MDI (Rats).

**Acute Eye Irritation:**
Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage, however is usually reversible.

**Acute Skin Irritation:**

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Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Acute Dermal Toxicity:**
Slight to moderate iritant. Primary dermal irritation scores are tyopically below 3.4/8.0 (Draize).

**Acute Respiratory Irritation:**
MDI has been shown to produce dermal sensitization in several species (guinea pigs, mice, rabbits, and dogs). Intradermal or topical application followed by inhalation challenge have resulted in a respiration sensitization response in guinea pigs. In addition there is some evidence to suggest that cross-sensitization between different types of diisocyanates may occur.

**Acute Ingestion Toxicity:**
No hazard in normal industrial use.

**Acute Inhalation Toxicity:**
Can irritate mucous membranes, cause runny nose, sore throat, coughing, and other symptoms.

**Acute Oral Toxicity:**
ND

**Chronic Toxicity:**
Ina chronic inhalation study, rats were exposed to an aerosol of polymeric MDI for six hours per day, five days per week for a period of two years. The exposure concentrations were 0, 0.2, 1.0 and 6.0 mg/m3. Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m3. The No Observable effect Level (NOEL) was 0.2 mg/m3. In the same study, the occurrence of pulmonary adenomas (benign tumors) and a single pulmonary adenocarcinoma (malignant tumor) was considered to be related to exposure. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m3. No conclusive evidence has been developed to indicate that either MDI or a similar product (a solution of MDI and a polyisocyanate propolymer based on MDI) is carcinogenic, teratogenic or that it causes reproductive effects in animals or in humans.

## XII. Ecological Information

**Ecotoxicological Information:**

| | |
|---|---|
| Degradation: | Not Determined |
| Accumulation: | Not Determined |
| Fish-Toxicity: | >500 mg/l for Daphnia magna, Limnea stagnalis, and Zebra fish (Brachydanio rerio) for both polymeric and monomeric MDI. |

**Chemical Fate Information:**
Not Determined

## XIII. Disposal Considerations

**Waste Disposal Method:**

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Discard any product, residue, disposable container or liner in full compliance with federal, state, and local regulations.

**Container Handling and Disposal:**
Dispose of container and unused contents in accordance with federal, state, and local regulations.

## XIV. Transportation Information

**US Department of Transportation Shipping Name:**

| | | |
|---|---|---|
| **US Department of Transportation** | **Proper Shipping Name** | Not Regulated |
| | **Hazard Class** | Not Regulated |
| | **ID Number** | Not Regulated |
| | **Packaging Group** | Not Regulated |
| | **Label Statement** | Not Regulated |

## XV. Regulatory Information

### Federal Regulations:

**SARA Title III Hazard Classes:**

| | |
|---|---|
| Fire Hazard: | YES |
| Reactive Hazard: | YES |
| Release of Pressure: | NO |
| Acute Health Hazard: | YES |
| Chronic Health Hazard: | YES |

### Other Federal Regulations:

**State Regulations:**
The components identified with an X are present on the respective state's Right To Know lists:

| Component | MA | PA | MI | NJ | RI | FL |
|---|---|---|---|---|---|---|
| Homologues of methylene bisphenyl isocyanate | | | | | | |
| Methylene bisphenyl isocyanate | X | X | | X | | |
| Polypropylene Polyol | | | | | | |

California Prop. 65: None of the chemicals in this product are listed.

### Canada Regulations:

All components of this product are listed on Canada's DSL and Ingredient Disclosure Lists.

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This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## XVI. Other Information

**National Fire Protection Association Hazard Ratings – NFPA(R):**

| | |
|---|---|
| Health Hazard: | 2 |
| Flammability: | 1 |
| Reactivity: | 0 |

**Key Legend Information:**
N/A – Not Applicable
ND – Not Determined
ACGIH – American Conference of Governmental Industrial Hygienists
OSHA – Occupational Safety and Health Administration
TLV – Threshold Limit Value
PEL – Permissible Exposure Limit
TWA – Time Weighted Average
STEL – Short Term Exposure Limit
NTP – National Toxicology Program
IARC – International Agency for Research on Cancer

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