



# Safety Data Sheet

Monopole, Inc.

**Product Name:** PERMASHIELD 2000 PART A

**Issue Date:** January 2016

Monopole Inc. encourages and expects you to read and understand the entire SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## SECTION 1: Identification

**Product Name:** PERMASHIELD 2000 PART A

**Item No.** 1400

### COMPANY IDENTIFICATION

Monopole, Inc.  
4661 Alger Street  
Los Angeles, CA 90039  
Tel: (818) 500-8585  
Fax: (818) 502-0818

### EMERGENCY TELEPHONE NUMBERS:

Health Emergency ..... : (818) 500-8585  
Poison Center..... : (800) 222-1222  
Chemtrec..... : (800) 424-9300

## SECTION 2: Hazard Identification

### Hazard Classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

### Other Hazards

no data available

## SECTION 3: Composition/Information on Ingredients

Hazardous Components	% (by weight)	CAS#	Classification
There are no hazardous components above the relevant concentration limits according to OSHA HazCom 2012.			

## SECTION 4: First Aid Procedures

**Eye Contact:** Immediately flush eyes with plenty of water, preferably lukewarm. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel.

**Inhalation:** Inhalation is unlikely due to low vapor pressure. If affected by odor, remove victim to fresh air.

**Skin Contact:** Wash material off the skin thoroughly with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminates footwear before reuse.

**Ingestion:** Do not induce vomiting. Give 1 or 2 glasses of milk or water to drink and refer person to medical personnel. Do not give anything by mouth to an unconscious person.

## SECTION 5: Fire Fighting Measures

**Extinguishing Media:** Dry chemical, foam, carbon dioxide, foam, or water spray for large fires.

**Fire Fighting Procedures:** Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide, nitrogen oxides, ammonia, trace amounts of hydrogen cyanide and unidentified organic compounds may be formed during combustion.

## SECTION 6: Accidental Release Measures

**Spill or Leak Procedures:** Dike or dam spilled material and control further spillage, if possible. Prevent from entering open drains and waterways. Cover spill with inert material (dry sand or earth) and collect for proper disposal. Ventilate area to remove vapors or dust.

## SECTION 7: Handling and Storage

**Handling/Storage Precautions:** Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

**Storage:** 6 months from manufacture date.

**Storage Temperature:** Minimum: 50°F; Maximum: 77°F

**Storage Conditions:** Protect from freezing. Store in a cool dry place. Store in original or similar containers. Store separate from food products.

**Substances To Avoid:** Water reactives, Oxidizing agents

## SECTION 8: Exposure Controls / Personal Protection

**Ventilation:** Local exhaust is necessary to control airborne vapors, mists, dusts. Application operations should be ventilated to control fumes.

**Respiratory Protection:** None required under normal conditions of use.

**Hand Protection:** Permeation resistant gloves. Butyl rubber gloves. Nitrile rubber gloves.

**Eye Protection:** Chemical safety goggles and side shield.

**Skin Protection:** Permeation resistant clothing. Gloves, long sleeved shirts and pants.

**Additional Protective Measures:** Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after use. Showers and cleaning of clothes are recommended. Follow all label instructions. Educate and train employees in safe use of product.

## SECTION 9: Physical and Chemical Properties

**Boiling Point:** 212°F (100°C)

**Freezing Point:** 32°F (0.0°C)

**V.O.C. (Combined Part A & Part B):** < 10 g/L

**Vapor Density:** N/E

**Solubility in Water:** Soluble

**Color And Odor:** Milky White, Mild Odor

**pH:** 7 - 7.5

## SECTION 10: Stability and Reactivity

**Hazardous Reactions:** Hazardous polymerization does not occur.

**Stability:** Stable under normal conditions.

**Conditions to Avoid:** Moisture and protect from freezing.

**Incompatibility (Materials to Avoid):** Water reactives, oxidizing agents.

**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide, oxides of nitrogen.

## SECTION 11: Toxicological Information

**Likely Routes of Exposure:** Inhalation, Skin, Eye, Ingestion.

**Carcinogenicity:** NTP: No IARC Monographs: No OSHA Regulated: No

## SECTION 12: Ecological Information

No information available.

## SECTION 13: Disposal Information

**Waste Disposal Method:** Dispose of in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

## SECTION 14: Transportation Information

**DOT Proper Shipping Name:** Not regulated.

**IATA Proper Shipping Name:** Not regulated.

**IMO Proper Shipping Name:** Not regulated.

## SECTION 15: Regulatory Information

**Toxic Substance Control Act:** Listed on the TSCA inventory.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):** 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.

**U.S. EPA CERCLA Hazardous Substances (40 CFR 302) Components:** None.

**SARA Section 311/312 Hazard Categories:** Non-hazardous under Section 311/312.

**U.S. 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

## SECTION 16: Other Information

**USER'S RESPONSIBILITY:** A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any

health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

**DISCLAIMER:** To the best of our knowledge, the information contained herein is accurate, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reliability or completeness of the information. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Monopole Inc. urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.



# Safety Data Sheet

Monopole, Inc.

**Product Name:** PERMASHIELD 2000 PART B

**Issue Date:** January 2016

Monopole Inc. encourages and expects you to read and understand the entire SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## SECTION 1: Product and Company Identification

**Product Name:** PERMASHIELD 2000 PART B

### COMPANY IDENTIFICATION

Monopole, Inc.  
4661 Alger Street  
Los Angeles, CA 90039  
Tel: (818) 500-8585  
Fax: (818) 502-0818

### EMERGENCY TELEPHONE NUMBERS:

Health emergency ..... : (818) 500 - 8585  
Poison center..... : (818) 356 - 3129  
Chemtrec..... : (800) 424 - 9300

## SECTION 2: Hazard Identification

### GHS Classification

Acute toxicity (Inhalation): Category 4  
Respiratory sensitization: Category 1  
Skin sensitization: Category 1  
Specific target organ toxicity: Category 3 (Respiratory system)  
single exposure  
Specific target organ toxicity: Category 2 (Lungs)  
repeated exposure (Inhalation)

### GHS Label Elements

Hazard pictograms:



Single word: Danger

Hazard statements:

May cause an allergic skin reaction.  
Harmful if inhaled  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

Precautionary statements:

### Prevention:

Do not breathe dust, mist, gas, vapors or spray.

Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Wear protective gloves.  
 In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.  
 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.  
 Call a doctor or emergency medical facility if you feel unwell.  
 If skin irritation or rash occurs, get medical attention.  
 If experiencing respiratory symptoms: Call a doctor or emergency medical facility.  
 Wash contaminated clothing before reuse.

**Storage:**

Store locked up.  
 Store in well-ventilated place. Keep container tightly closed.

**Disposal:**

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

**SECTION 3: Composition/Information on Ingredients**

Hazardous Components	% (by weight)	CAS#	Classification
Homopolymer of Hexamethylene Diisocyanate	95-100%	28182-81-2	Acute toxicity Category 4 Inhalation. Respiratory sensitization Category 1. Skin sensitization Category 1. Specific target organ toxicity - single exposure Category 3 (Respiratory). Specific target organ toxicity - repeated exposure Category 2 (Inhalation, lungs)
Hexamethylene-1,6- Diisocyanate	1-5%	822-06-0	Acute toxicity Category 4 Oral. Acute toxicity Category 1 Inhalation. Skin sensitization Category 1. Serious eye damage Category 1. Respiratory sensitization Category 1. Skin sensitization Category 1. Specific target organ toxicity - single exposure Category 3 (Respiratory).

**SECTION 4: First Aid Measures**

**Important Symptoms/Effects**

**Acute/Chronic Inhalation:** 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 hyperactivity can respond to concentrations below the exposure limits

with similar symptoms as well as asthma attack. Exposure well above the limits may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs).

**Acute/Chronic Skin Contact:** Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms because of contact with very small amounts of liquid material or because of exposure to vapor.

**Acute/Chronic 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. Prolonged vapor contact may cause conjunctivitis.

**Acute Ingestion:** May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

**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.

**INHALATION:** Move to an area free from 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.

**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. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

## **SECTION 5: Fire Fighting Measures**

**EXTINGUISHING MEDIA:** Dry chemical, foam, carbon dioxide foam, water spray for large fires.

**SPECIAL FIREFIGHTING PROCEDURES:** 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.

**UNUSUAL FIRE AND 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 Measure

### SPILL AND LEAK PROCEDURES

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 adsorbent, completely cover the spill area with suitable adsorbent material (e.g., vermiculite, kitty litter, Oil-Dri®, etc) Allow for the adsorbent material to absorb the spilled liquid. Shovel the adsorbent 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 adsorbent 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 application of the neutralization solution. Cover the area with adsorbent 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 adsorbent 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.

### ADDITIONAL SPILL PROCEDURES/NEUTRALIZATION

Products or product mixture that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment that has 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.

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

\*ZEP® Commercial Heavy DUTY Floor Stripper

\*Greases 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 application of the neutralization solution to decontaminate the surface. Check for residual surface contamination using a surface wipe method such as the CLI Swype® pad.



## SECTION 7: Handling and Storage

**STORAGE TEMPERATURE:** 45°F - 115°F

**STORAGE PERIOD:** 9 Months @ 77 °F from manufacture date.

**HANDLING/STORAGE PRECAUTIONS:** 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.

**FURTHER INFO ON STORAGE CONDITIONS:** 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. Store separate from food products.

## SECTION 8: Exposure Controls and Personal Protection

### Homopolymer of Hexamethylene Diisocyanate

Exposure Limit

Time Weighted Average (TWA): 0.5 mg/m<sup>3</sup>

Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m<sup>3</sup> (15-min)

### Hexamethylene-1,6-Diisocyanate (822-06-0)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 0.005 ppm

Exposure Limit

Ceiling Limit Value: 0.01 ppm

**INDUSTRIAL HYGIENE/VENTILATION 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.

**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. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and 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/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> 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/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> 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 brush or roller application 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/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> 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/m<sup>3</sup> averaged over eight (8) hours or 10 mg/m<sup>3</sup> 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.

**HAND PROTECTION:** Gloves should be worn. Nitrile rubber gloves, Butyl rubber gloves, Neoprene gloves.

**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.

**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. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. 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.

## SECTION 9: Physical / Chemical Properties

**BOILING POINT:** Decomposition

**DENSITY:** 1.16 g/cm<sup>3</sup>

**V.O.C.** (Combined Part A & Part B): Zero

**VAPOR PRESSURE:** HDI Polyisocyanate: 5.2 x 10<sup>-9</sup>

**SOLUBILITY IN WATER:** Insoluble.

**APPEARANCE AND ODOR:** Light yellow liquid, slight odor

**FLASH POINT:** 330°F (165°C)

**VISCOSITY:** 120 KUs

## SECTION 10: Stability & Reactivity Data

**STABILITY:** Stable under normal conditions.

**INCOMPATIBILITY (MATERIALS TO AVOID):** Water, amines, strong bases, alcohols, copper alloys.

**HAZARDOUS DECOMPOSITION OR BY-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.

**CONDITIONS TO AVOID:** Keep from freezing. Avoid heat, open flame, sparks and moisture.

**HAZARDOUS REACTIONS:** Contact with moisture, other material that react with isocyanates, or temperatures above 350°F may cause polymerization.

## SECTION 11: Toxicological Information

**LIKELY ROUTS OF EXPOSURE:** Skin Contact, Inhalation, Eye Contact

**ACUTE:** Isocyanate vapors or mist at concentrations above the exposure limits can irritate the mucous membranes in the respiratory tract.

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:** Repeated overexposure may result in sensitization to isocyanates. These symptoms may include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Extreme asthmatic reactions can be life threatening. Chronic overexposure to isocyanates has been reported to cause lung damage that may be permanent.

Prolonged contact with skin can cause reddening, swelling rash and in some cases, skin sensitization. Animal test 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 eyes may cause conjunctivitis.

**DELAYED:**

Respiratory track symptoms can occur several hours after exposure.

## SECTION 12: Ecological Information

Data on the product is not available.

## **SECTION 13: Disposal Considerations**

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

**EMPTY CONTAINER PRECAUTIONS:** 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.

## **SECTION 10: Regulatory Information**

**DOT PROPER SHIPPING NAME:** Not regulated.

**IATA PROPER SHIPPING NAME:** Not regulated.

**IMO PROPER SHIPPING NAME:** Not regulated.

**OSHA HAZCOM STANDARD RATING** – Hazardous

**TOXIC SUBSTANCE CONTROL ACT:** Some chemicals comprising this product are listed on the TSCA inventory.

**CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):** 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.

**USER'S RESPONSIBILITY:** A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

**DISCLAIMER:** To the best of our knowledge, the information contained herein is accurate, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reliability or completeness of the information. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Monopole Inc. urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.