

# Safety Data Sheet



## **BULLDOG EPOXY**

### **Polyaspartic 88 – PART A**

#### 1. IDENTIFICATION

24 HOUR EMERGENCY ASSISTANCE	MANUFACTURER/GENERAL MSDS ASSISTANCE
CHEM-TEL 1-800-255-3924	<b>ONYX CONCRETE COATINGS</b> Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870

**PRODUCT IDENTIFIER/NAME:** Polyaspartic 88 – PART A

**RECOMMENDED USE:** Chemical intermediate for Polyaspartic

#### 2. HAZARD(S) IDENTIFICATION

**Emergency Overview:** May cause sensitization by skin contact (H317). Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment (H412).

**NFPA ratings (scale 0 – 4):**

<b>HEALTH</b>	<b>2</b>
<b>FIRE</b>	<b>2</b>
<b>REACTIVITY</b>	<b>0</b>
<b>SPECIAL</b>	<b>-</b>

**NFPA HAZARD RATING:**

4= EXTREME 3= HIGH 2= MODERATE 1= SLIGHT 0= INSIGNIFICANT



**HAZARD PICTOGRAMS:**

**SIGNAL WORD:** Warning

**PHYSICAL APPEARANCE:** Milky clear or colored liquid with a slight aromatic odor

**HAZARD STATEMENTS:**

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long-lasting effects.

**Precautionary Statement(s):**

Prevention:

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P171: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P370 + P378: In case of fire, use carbon dioxide, dry chemical or foam for extinction.

P303+P361+P353: IF ON SKIN (or hair), Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340: IF INHALED, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: IF SWALLOWED, immediately call a POISON CENTER or doctor/physician.

P305+P351+P338: IF IN EYES, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P331: Do NOT induce vomiting.

P332+P313: If skin irritation occurs, get medical advice/attention.

P337+P313: If eye irritation persists, get medical advice/attention.

P362: Take off contaminated clothing and wash before reuse.

P370+P378: In case of fire, use carbon dioxide, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P235: Keep cool.

Disposal:

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other Information:**

No data available.

**Carcinogenicity:** No carcinogenic substances as defined by IARC, NTP and/or OSHA.

See Section 12 for Ecological Information.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<i>Amine –Polyol Ester</i>	(CAS TS)	> 80%
<i>Blocked Diamine</i>	(CAS TS)	<10%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed. Where proprietary Ingredient shows, the identity may be made available as provided in this standard.

### 4. FIRST AID MEASURES

**Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Skin:** In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Thoroughly clean shoes before reuse. Wash clothing and other apparel before reuse.

**Eye:** In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that eyelids are separated and the eye is being irrigated. Get medical attention.

**Ingestion:** If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use carbon dioxide, foam, and dry chemical. Use water spray to keep fire-exposed containers cool.

Unsuitable Extinguishing Media: High volume water jet.

**Unusual Fire and Explosion Hazards:** Wear protective clothing and self-contained breathing apparatus to protect against potential toxic and irritating fumes. Cool exposed containers with water spray. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

**Hazardous Combustion Products:** carbon dioxide, carbon monoxide, oxides of nitrogen, and unidentified compounds.

**Advice for Fire Fighters:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Closed container may forcibly rupture under extreme heat. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Toxic gases/fumes may be given off during burning or thermal decomposition.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate personal protective equipment. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

**Environmental Precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform authorities if the product has caused environmental pollution (sewers, drains, waterways or soil).

**Containment/Clean-up Measures:** Cleanup personnel must use appropriate personal protective equipment. Evacuate and keep unnecessary personnel out of spill area. Remove all sources of ignition, including flames, heat, and sparks. Stop leak if without risk. Move containers from spill area. Dike or dam spilled material with non-combustible, absorbent material (e.g., sand, earth, vermiculite or diatomaceous earth) and control further spillage, where possible. Collect and place spilled material in container for proper disposal according to appropriate local, state and federal regulations. Do not allow spilled material or wash water to enter sewers, surface waters or groundwater systems. Use grounded or non-sparking tools and equipment. Wash spill area with soap and water. Dispose any waste according to appropriate local, state, and federal regulations.

## 7. HANDLING AND STORAGE

**Handling:** Do not breathe vapors or spray mist. Avoid contact with eyes or skin. Avoid contact with clothing. Use only with adequate ventilation and personal protection. Remove contaminated personal protective equipment (PPE), then wash hands and face thoroughly after handling and before eating and drinking. Keep container closed when not in use. Empty containers retain product residue and can be hazardous. Do not get in eyes, on skin or on clothing. Do not ingest. Avoid release to the environment.

**Storage:** Storage period is 6 months after delivery. Maximum storage temperature is 30°C (86°F). Keep away from food products during use and storage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled, unapproved or reactive containers. Use appropriate containment to avoid environmental contamination. Personnel education and training in the safe use and handling of this product are required under OSHA Hazard Communication Standard 29 CFR 1910.1200.

**Incompatible Materials or Ignition Sources:** Hazardous polymerization does not occur. Avoid strong oxidizing agents, acids, isocyanates.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures/Controls:** General dilution and local exhaust as necessary to control airborne vapors, mists, dusts, and thermal decomposition products below appropriate airborne concentration standards and guidelines.

**Environmental Exposure Controls:** Avoid release to the environment. Construct a dike to prevent spreading of spills.

**Hygiene Measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating and drinking, smoking or using the lavatory and at the end of the working period. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

## Personal Protective Equipment

**Respiratory:** In case of inadequate ventilation, wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use positive pressure supplied air respirator when airborne concentrations are not known, when airborne solvent levels are 10 times the appropriate TLV, and when spraying is performed or product is applied by aerosol in a confined space or area with limited ventilation. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Contact health and safety professional or manufacturer for specific information.

**Eye/Face:** Use chemical resistant goggles. Chemical safety goggles in combination with a full face shield must be used if a splash hazard exists.

**Hands:** Use permeation resistant gloves such as butyl rubber, nitrile rubber, or neoprene.

**Skin/Body:** Wear rubber or plastic apron and permeation resistant clothing, chemical-resistant gloves, and long-sleeved shirts, and pants. Remove and wash contaminated clothing before re-use.

**General Industrial Hygiene Considerations:** Keep away from food and drink. Wash hands and face after use. Educate and train workers in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Liquid

**COLOR:** Clear, Light yellow

**ODOR:** Slight inherent odor

**pH:** Not established

**BOILING POINT:** Approximately 200 °C

**FLASH POINT:** 74 °C, Closed Cup

**VAPOR PRESSURE:** 1.01 kPa @ 77 °F / 25 °C

**SOLUBILITY IN WATER:** Negligible

**AUTO-IGNITION TEMPERATURE:** No data

## 10. STABILITY AND REACTIVITY

**STABILITY:** Stable

**MATERIALS TO AVOID:** Oxidizing agents, reducing agents, Acids, Bases

**CONDITIONS TO AVOID:** Avoid heat, open flame, and prolonged storage at elevated temperatures, Protect from freezing

**BY FIRE AND THERMAL DECOMPOSITION:** Carbon dioxide, carbon monoxide, oxides of nitrogen, other undetermined compounds.

**HAZARDOUS REACTIONS:** Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	<i>Amine –OH Polyol Ester</i>	LD50: > 2,000 mg/kg (Rat)
Acute Inhalation Toxicity	<i>Amine –OH Polyol Ester</i>	LC 50 Rat: > 4.2 g/l, 4 hr
Acute Dermal Toxicity	<i>Amine –OH Polyol Ester</i>	Rat > 2000 mg/kg

**Amine –OH Polyol Ester**, Eye Irritation rabbit, Draize, Exposure Time: 24 hrs, Slightly irritating

### MUTAGENICITY:

**Ames:** Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic Activation; with/without)

## 12. ECOLOGICAL INFORMATION

### Amine –OH Polyol Ester

**Degradation:** 13 %, Exposure time:28 d, Not readily biodegradable

**ACUTE AND PROLONG EXPOSURE TO FISH:** LC50: 66 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)  
**TOXICITY TO MICROORGANISM:** EC10: 3,110 mg/l, (Activated sludge microorganisms, 24 h)

### 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**EMPTY CONTAINER PRECAUTION:** Recondition or dispose of empty container in accordance with governmental regulations. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

### 14. TRANSPORT INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
DOT	Not regulated	Not regulated	Not regulated	Not regulated	H412 Harmful to aquatic life with long-lasting effects.
IMO/IMDG	Not regulated	Not regulated	Not regulated	Not regulated	H412 Harmful to aquatic life with long-lasting effects.
IATA/ICAO	Not regulated	Not regulated	Not regulated	Not regulated	H412 Harmful to aquatic life with long-lasting effects.

### 15. REGULATORY INFORMATION

#### U.S. FEDERAL REGULATIONS

**OSHA HAZCOM STANDARD RATING:** None

**U.S. TOXIC SUBSTANCE CONTROL ACT:** Listed on the TSCA Inventory.

**U.S. EPA CERCLA HAZARDOUS SUBSTANCES (40 CELT 302) SARA SECTION 3111312 HAZARD CATEGORIES:** Fire Hazard, Acute Health Hazard,

**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):**  
None

**U.S. 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

**U.S. EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPOSITE LIST OF HAZARDOUS WASTES AND APPENDIX VIII HAZARDOUS CONSTITUENTS (40 CFR 2610:** 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 on your regulatory requirements you should contact the appropriate agency in your state.

**MASSACHUSETT, NEW JERSEY, AND PENNSYLVANIA RIGHT TO KNOW ACT:**

Weight %	Components	CAS-No.
>80 %	Amine –Polyol ester	TS

**NEW JERSEY ENVIROMENTAL HAZARDOUS SUBSTANCES LIST AND/OR NEW JERSEY RTK SPECIAL HAZARDOUS SUBSTANCE LISTS:**

Chemical Name	CAS Number	% By Weight
<b>NONE</b>		

**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.

**16. OTHER INFORMATION**

**Date Revised: 05/06/2019**

The information herein is given in good faith, but no warranty expressed or implied is made. Onyx Concrete Coatings urges users of this product to evaluate its suitability and compliance with local regulations as Onyx Concrete Coatings cannot foresee the nature of the final application or final location of usage.

# Safety Data Sheet



## **BULLDOG EPOXY**

### **Polyaspartic 88 – PART B**

#### 1. IDENTIFICATION

24 HOUR EMERGENCY ASSISTANCE	MANUFACTURER/GENERAL MSDS ASSISTANCE
CHEM-TEL 1-800-255-3924	<b>ONYX CONCRETE COATINGS</b> Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870

**PRODUCT IDENTIFIER/NAME:** Polyaspartic 88 – PART B

**RECOMMENDED USE:** Chemical intermediate for polyurethane

#### 2. HAZARD(S) IDENTIFICATION

##### HAZARD CLASSIFICATION:

Acute Oral Toxicity Category 4  
Acute Dermal Toxicity Category 4  
Acute Vapors Toxicity Category 5  
Skin Irritation Category 3  
Skin Sensitizer Category 1  
Respiratory Sensitizer Category 1  
TOST: Single Exposure Category 2  
TOST: Repeated Exposure Category 2  
Aspiration Toxicity Category 2

##### NFPA ratings (scale 0 – 4):

<b>HEALTH</b>	<b>2</b>
<b>FIRE</b>	<b>2</b>
<b>REACTIVITY</b>	<b>1</b>
<b>SPECIAL</b>	<b>-</b>

##### NFPA HAZARD RATING:

4= EXTREME    2= MODERATE    0= INSIGNIFICANT  
3= HIGH        1= SLIGHT

##### HAZARD PICTOGRAMS:



**SIGNAL WORD:** Warning

**PHYSICAL APPEARANCE: Milky clear or colored liquid with aromatic odor**

**HAZARD STATEMENTS:**

**WARNING!**

Combustible liquid and vapor. May affect the central nervous system causing dizziness, headache or nausea. May be harmful if inhaled. Harmful if swallowed. May cause eye, skin, and respiratory tract irritation. Closed container *may* forcibly rupture under extreme heat. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling solvents may be harmful or fatal. May cause kidney damage. May cause liver damage. May cause blood disorder.

**POTENTIAL HEALTH EFFECTS**

**PRIMARY ROUTES OF ENTRY:** Skin Contact, Eye Contact, Ingestion, Inhalation

**MEDICAL CONDITIONS AGGRAVATED BY:** Skin disorders, Respiratory disorders, Eye disorders, Allergies

**HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE**

**INHALATION:** Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

**ACUTE INHALATION:**

**Aliphatic Polyisocyanate:** Diisocyanate or polyisocyanate 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.

**CHRONIC INHALATION:**

**Aliphatic Polyisocyanate:** As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates 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 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 diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

**ACUTE SKIN:**

**Aliphatic Polyisocyanate:** 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:**

**Aliphatic Polyisocyanate:** Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests 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:**

**Aliphatic Polyisocyanate:** 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:**

**Aliphatic Polyisocyanate:** Prolonged vapor contact may cause conjunctivitis.

**INGESTION:**

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

**Carcinogenicity:** No Carcinogenic substances as defined by IARC, NTP and/or OSHA

**SYMPTOMS:** Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness)

**TARGET ORGANS:** Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals, kidney damage, liver damage..

**PRECAUTIONARY STATEMENTS:** Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. Keep away from open flames and hot surfaces. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. IF SWALLOWED: Get immediate medical advice/attention. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<i>Homopolymer of Hexamethylene Diisocyanate</i>	(CAS 28182-81-2)	<90 %
Dipropylene glycol methyl ether acetate	(CAS 88917-22-0)	< 10%
<i>Hexamethylene-1,6-Diisocyanate</i>	(CAS 822-06-0)	< 0.2%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed. Where proprietary Ingredient shows, the identity may be made available as provided in this standard.

### 4. FIRST AID MEASURES

**EYE:** If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

**SKIN:** In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops.

**INHALATION:** If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

**INGESTION:** Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

**NOTES TO PHYSICIAN:**

**HAZARDS:** This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting.

**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.

## 5. FIRE-FIGHTING MEASURES

**SUITABLE EXTINGUISHING MEDIA:** All extinguishing media are suitable; water spray for large fires, regular foam (such as AFFF), Water spray, Carbon dioxide (CO<sub>2</sub>), Dry chemical

**HAZARDOUS COMBUSTION PRODUCTS:** May form: carbon dioxide and carbon monoxide, chlorine compounds, fluoride compounds, various hydrocarbons

**PRECAUTIONS FOR FIRE FIGHTING:** Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

**UNUSUAL FIRE AND EXPLOSIONS:** 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.

**FLAMMABLE CLASS FOR FLAMMABLE LIQUIDS:** Combustible Liquid Class II

## 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** For personal protection see section 8. Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks.

**ENVIRONMENTAL PRECAUTIONS:** Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

**METHODS FOR CLEANING UP:** Absorb liquid on vermiculite, floor absorbent or other absorbent material.

## 7. HANDLING AND STORAGE

**HANDLING:** Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

**STORAGE:** Do not store near extreme heat, open flame, or sources of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits

Homopolymer of Hexamethylene Diisocyanate	Time Weighted Average (TWA)	0.5 mg/m <sup>3</sup>
	Short Term Exposure Limit (STEL)	1.0 mg/m <sup>3</sup> (15-min)
Hexamethylene-1,6-Diisocyanate	Time Weighted Average (TWA)	0.005 ppm
	Ceiling Limit Value	0.02 ppm

**GENERAL ADVICE:** These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

**EXPOSURE CONTROLS:** Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

**EYE PROTECTION:** Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

**SKIN AND BODY PROTECTION:** Wear resistant gloves (consult your safety equipment supplier).

**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:** 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 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/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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Liquid

**COLOR:** Clear, colorless to light yellow

**ODOR:** Slight aromatic odor

**pH:** Not established

**BOILING POINT:** Approximately 139.30 °C / 282.7 °F

**FLASH POINT:** 190 °F / 87.5 °C, Closed Cup

**VAPOR PRESSURE:** 0.0836 mmHg @ 68 °F

**SOLUBILITY IN WATER:** Insoluble – Reacts slowly with water to liberate CO<sub>2</sub> gas

**AUTO-IGNITION TEMPERATURE:** No data

## 10. STABILITY AND REACTIVITY

**STABILITY:** Stable under normal conditions of use and storage.

**MATERIALS TO AVOID:** Water, Amines, Strong bases, Alcohols, copper alloys

**CONDITIONS TO AVOID:** Avoid heat, open flame, and prolonged storage at elevated temperatures, Protect from freezing

**HAZARDOUS DECOMPOSITION PRODUCTS:** By Fire and Thermal Decomposition: carbon dioxide and carbon monoxide, chlorine compounds, fluoride compounds, various hydrocarbons, nitrogen oxides (NOx), other aliphatic fragments which have not been determined.

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

## 11. TOXICOLOGICAL INFORMATION

### Toxicity Levels

Acute Oral Toxicity	Aliphatic Polyisocyanate	LD50: > 5,000 mg/kg (Rat)
Acute Inhalation Toxicity	Aliphatic Polyisocyanate	LC 50 Rat: 390-453 mg/kg, 4 hr
Acute Dermal Toxicity	Aliphatic Polyisocyanate	LD50: > 5,000 mg/kg (rabbit)

### SKIN AND EYES:

**Amine –OH Polyol Ester:** Rabbit, Draize, Slightly irritating

### SENSIZATION

**Dermal:** sensitizer (guinea pig, Maximisation Test (GPMT))

**Dermal:** non-sensitizer (Guinea pig, Buehler)

**Inhalation:** non-sensitizer (guinea pig)

### REPEATED DOSE TOXICITY:

3 wks, inhalation: NOAEL: 3.7 - 4.3 mg/m<sup>3</sup>, (Rat)

90 ds, inhalation: NOAEL: 3:3 3.4 mg/m<sup>3</sup>, (Rat)

Irritation to lungs and nasal cavity.

### MUTAGENICITY:

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

## 12. ECOLOGICAL INFORMATION

### ECOLOGICAL DATA FOR HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE

**BIODEGRATION:** 0 %, Exposure time: 28 Days, Not readily biodegradable.

**ACUTE AND PROLONG TOXICITY TO FISH:** LCD: > 100 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)

**ACUTE AND PROLONG TOXICITY TO INVERTEBRATES:** EC0: > 100 mg/l (Water flea (Daphnia magna), 48 hrs)

**TOXICITY TO PLANTS:** EC50: > 1,000 mg/l, (Green algae (Scenedesmus subspicatus), 72 hrs)

**TOXICITY TO MICROORGANISMS:** EC50: > 1,000 mg/l, (Activated sludge microorganisms, 3 hrs)

## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**EMPTY CONTAINER PROCEDURE:** Recondition or dispose of empty container in accordance with governmental regulations. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or

## 14. TRANSPORT INFORMATION

**Transportation Emergency Number: 1-800-255-3924 CHEM-TEL.**

**IMDG:** UN2234, Chlorobenzotrifluorides 3, III

**IATA\_P:** UN2234, Chlorobenzotrifluorides 3, III

**IATA\_C:** UN2234, Chlorobenzotrifluorides 3, III

**CFR\_ROAD:** UN2234, Chlorobenzotrifluorides (p-CHLOROENZOTRIFLUORIDE) 3, III

**CFR\_RAIL:** UN2234, Chlorobenzotrifluorides (p-CHLOROENZOTRIFLUORIDE) 3, III

**CFR\_INWTR:** UN2234, Chlorobenzotrifluorides (p-CHLOROENZOTRIFLUORIDE) 3, III

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

## 15. REGULATORY INFORMATION

### U.S FEDERAL REGULATIONS

**OSHA HAZCOM STANDARD RATING:** None

**US TOXIC SUBSTANCE CONTROL ACT:** Listed on the TSCA Inventory.

**SARA SECTION 3111312 HAZARD CATEGORIES:** Fire Hazard, Acute Health Hazard,

**SUPERFUND AMENDMENTS and REAUTHORIZATION ACT of 1986 (SARA) TITLE III Section 302:** Extremely Hazardous Substance (40 CFR 355,)

**U.S. EPA EMERGENCY PLANNING AND COMMUNITY ACT (EPCRA) SARA TITLE III Section 313** Toxic Chemicals (40 CFR 372.65) - Supplier Notification

**U.S. EPA RESOURCE AND CONSERVATION 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 on your regulatory requirements you should contact the appropriate agency in your state.

### MASSACHUSETT, NEW JERSEY, AND PENNSYLVANIA RIGHT TO KNOW ACT:

Weight %	Components	CAS-No.
75%	Homopolymer of Hexamethylene Diisocyanate	TS28182-81-2

### NEW JERSEY ENVIROMENTAL HAZARDOUS SUBSTANCES LIST AND/OR NEW JERSEY RTK SPECIAL HAZARDOUS SUBSTANCE LISTS:

Weight %	Components	CAS-No.
<0.3%	Hexamethylene-1,6-Diisocyanate	822-06-0

**CALIFORNIA PROP 65:** To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

## 16. OTHER INFORMATION

**Date Revised: 05/06/2019**

The information herein is given in good faith, but no warranty expressed or implied is made. Onyx Concrete Coatings urges users of this product to evaluate its suitability and compliance with local regulations as Onyx cannot foresee the nature of the final application nor final location of usage.