Safety Data Sheet

Polyaspartic 87 – PART A

1. IDENTIFICATION

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

PRODUCT IDENTIFIER/NAME: **Polyaspartic 87 – PART A**
RECOMMENDED USE: Chemical intermediate for polyurethane

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

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

NFPA ratings (scale 0 – 4):

HEALTH	**2**
FIRE	**1**
REACTIVITY	**0**
SPECIAL	**-**

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!
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

ACUTE INHALATION:
Amine –OH Polyol Ester: Inhalation is unlikely due to low vapor pressure. At elevated temperatures, may cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

ACUTE SKIN:
Amine –OH Polyol Ester: May cause slight irritation.

ACUTE EYE:
Amine –OH Polyol Ester: Not expected to be irritating.
ACUTE INGESTION
Amine –OH Polyol Ester: Ingestion is not a typical route of industrial exposure. Not expected to be harmful if swallowed.

Aliphatic Carboxylic Ester: May be harmful if swallowed.

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

PRECAUTIONARY STATEMETNS: 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. 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

Amine –Polyol Ester Blend	(CAS TS)	> 80%
Isophorondiamine-isobutyraldimine	(CAS TS)	1-5%

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

EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Call a physician immediately.
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 inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
INGESTION: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention. Do not give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: All extinguishing media are suitable; water spray for large fires.
SPECIAL FIRE FIGHTING PRECAUTIONS: 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 risk of rupture.
UNUSUAL FIRES PRECAUTIONS: Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Vapors or fumes may form explosive mixture with air. Dry residue will support combustion.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES: Cleanup personnel must use appropriate personal protective equipment. Evacuate and keep unnecessary people out of spill area. Ventilate area to remove vapors or dust. Dike or dam spilled material and control further spillage, if possible. Do not allow spilled material or wash water to enter sewers, surface waters, or groundwater systems. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Wash spill area with water.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE:
Minimum: 0ºC (32ºF)
Maximum: 40ºC(104ºF)

STORAGE PERIOD: 6 months

HANDLING AND STORAGE PROCEDURE: Use only with adequate ventilation/personal protection- Wash thoroughly after handling. Keep container closed when not in use. Do not get in eyes. Do not get on skin or clothing_ Avoid breathing dust, vapor, or mist. Protect from freezing. Store in original or similar containers. Protect from light. May form explosive peroxides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

INDUSTRIAL HYGIENE/VENTILATION MEASURES: General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place.

RESPIRATORY PROTECTION: In case of insufficient ventilation wear suitable respiratory equipment., The following respirator is recommended if airborne concentrations exceed the appropriate standard/guideline., NIOSH approved, air purifying organic vapor respirator.

HAND PROTECTION: Permeation resistant gloves.

EYE PROTECTION: Chemical resistant goggles must be worn, Chemical safety goggles in combination with a full-face shield if a splash hazard exists.

SKIN AND BODY PROTECTION: Wear cloth work clothing including long pants and long-sleeved shirts.

ADDITIONAL PROTECTIVE MEASURES: Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees 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
APPEARANCE: Thixotropic
COLOR: Clear light yellow or Pigmented
ODOR: Slight
pH: Not established
BOILING POINT: Approximately 185 °C (365 °F)
FLASH POINT: > 145 °C (> 293 °F)

VAPOR PRESSURE: Approximately 20 mbar @ 55 °C (131 °F)
Approximately 17 mbar @ 50 °C (122°F)
DENSITY: Approximately 8 mbar @ 20 °C (68 ˚F)
SOLUBLE IN WATER: Insoluble
AUTO-IGNITION TEMPERATURE: Approximately 365 °C (707 °F)
VISCOSITY: Approximately 1,450mPa.s @ 25 °C (77 °F)

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
HAZARDOUS DECOMPOSITION PRODUCT: 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 REACTIONS: Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

		Toxicity Level
Acute Oral Toxicity	Amine –OH Polyol Ester	LD50: > 2,000 mg/kg (Rat)

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
BIODEGRATION: 13 %, Exposure time:28 d, not readily biodegradable
ACUTE AND PROLONG TOXICITY TO FISH: LC50: 66 mg/l (Zebra fish (Brachydanio rerio))
TOXICITY TO MICROORGANISMS: ECI0: 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.

14. TRANSPORT INFORMATION

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

Land transport: (DOT) NOT REGULATED

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: 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 Required

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.

MASSSACHUSETT, NEW JERSEY, AND PENNSYLVANIA RIGHT TO KNOW ACT:

Weight %	Components	**CAS-No.**
>60 %	Amine –Polyol ester	TS136210-32-7 / 136210-30-5

Chemical Name	CAS Number	% By Weight	RQ
NONE			

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: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:
ONYX CONCRETE COATINGS
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 888-497-3872

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 or final location of usage.

Safety Data Sheet

Polyaspartic 87 – PART B

1. IDENTIFICATION

24 HOUR EMERGENCY ASSISTANCE	MANUFACTURER/GENERAL MSDS ASSISTANCE
CHEM-TEL 1-800-255-3924	**ONYX Concrete Coatings** **Tel.:** (714)-572-6723 **1610 E. Miraloma Ave.** **Placentia, CA 92870**

PRODUCT IDENTIFIER/NAME: **Polyaspartic 87 – 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):

HEALTH	**2**
FIRE	**2**
REACTIVITY	**0**
SPECIAL	**-**

NFPA HAZARD RATING:
4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT

HAZARD PICTOGRAMS:

SIGNAL WORD: Warning

PHYSICAL APPEARANCE: Clear or light amber 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 iterate (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.

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

Homopolymer of Hexamethylene Diisocyanate	(CAS 28182-81-2)	>60 %
Parachlorobenzotrifluoride	(CAS 98-56-6)	10-15%
Hexamethylene-1,6-Diisocyanate	(CAS 822-06-0)	< 0.3%

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 **i**n 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 (CO2), 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 (C02 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

Eye Protection
Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield.
Skin Protection
Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g., frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over- boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.
Respiratory Protection
If engineering controls do not maintain airborne concentrations to a level which is adequate to

protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed. Check with respiratory protective equipment suppliers.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH T (ppm)
BENZENE-1-CHLORO-4 (TRIFLUOROM ETHYL)-		2.5			1			

Chemical Name	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
BENZENE-1-CHLORO-4 (TRIFLUOROM ETHYL)-						2.5		

Chemical Name	ACGIH Carcinogen	ACGIH Notations	ACGIH TLV Basis
BENZENE-1-CHLORO-4 (TRIFLUOROM ETHYL)-	A4	A4; BEI	Bone dam; fluorosis

A4 - Not Classifiable as a Human Carcinogen, BEI - Substances for which there is a Biological Exposure Index or Indices, dam - Damage

Exposure Limits

Homopolymer of Hexamethylene Diisocyanate	Time Weighted Average (TWA)	0.02 mg/m3
	Short Term Exposure Limit (STEL)	0.07 mg/m3 (15-min)
Hexamethylene-1,6-Diisocyanate	Time Weighted Average (TWA)	0.02 mg/m3
	Short Term Exposure Limit (STEL)	0.07 mg/m3 (15-min)

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

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid
COLOR: Clear, colorless to light yellow
ODOR: Aromatic odor
pH: Not established
BOILING POINT: Approximately 139 °C / 282 °F
FLASH POINT: 115.99 °F / 46.66 °C, Closed Cup
VAPOR PRESSURE: 1.01 kPa @ 77 °F / 25 °C
SOLUBILITY IN WATER: Insoluble – Reacts slowly with water to liberate CO2 gas
AUTO-IGNITION TEMPERATURE: **<** 500 °C / 932 °F

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

Aliphatic Polyisocyanate

Toxicity Levels

Acute Oral Toxicity	Aliphatic Polyisocyanate	LD50: > 5,000 mg/kg (Rat)

Acute Oral Toxicity	PARACHLOROBENZOTRIFLUORIDE	LD 50 Rat: > 13 g/kg

Acute Inhalation Toxicity	Aliphatic Polyisocyanate	LC 50 Rat: 390-453 mg/kg, 4 hr
Acute Inhalation Toxicity	PARACHLOROBENZOTRIFLUORIDE	LC 50 Rat: 33 mg/l, 4 h

Acute Dermal Toxicity	Aliphatic Polyisocyanate	LD50: > 5,000 mg/kg (rabbit)
Acute Dermal Toxicity	PARACHLOROBENZOTRIFLUORIDE	LD 50 Rabbit: > 2.7 g/kg

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/m3, (Rat)
90 ds, inhalation: NOAEL: 3:3 3.4 mg/m3, (Rat)
Irritation to lungs and nasal cavity.

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

12. ECOLOGICAL INFORMATION

BENZENE-1-CHLORO-4(TRIFLUOROMETHYL)-
Toxicity
Toxic to aquatic life
Toxic to aquatic life with long lasting effects
Mobility in Soil
No data available.
Bio-accumulative Potential
No data available.
Persistence and Degradability
No data available.
Other adverse effects
No data available.

ECOLOGICAL DATA FOR HOMOPOLYMER OF HEXAMETHLENE 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 Regional Office of the EPA.

14. TRANSPORT INFORMATION

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

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class	14.4 Packing Group	14.5 Environmental Hazards
DOT	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**
IMO/IMDG	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**
IATA/ICAO	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**	**Not Regulated**

IMDG: UN2234, *Chlorobenzotrifluorides* 3, III
IATA_P: UN2234, *Chlorobenzotrifluorides* 3, III
IATA_C: UN2234, *Chlorobenzotrifluorides* 3, III
CFR_ROAD: UN2234, *Chlorobenzotrifluorides (p-CHLOROBENZOTRIFLUORIDE)* 3, III
CFR_RAIL: UN2234, *Chlorobenzotrifluorides (p-CHLOROBENZOTRIFLUORIDE) 3, III*
CFR_INWTR: UN2234, *Chlorobenzotrifluorides (p-CHLOROBENZOTRIFLUORIDE)* 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

State Right to Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Hexamethylene-1,6-diisocyanate Homopolymer	28182-81-2	CAS 28182-81-2	CAS 28182-81-2	CAS 28182-81-2
Hexamethylene-1,6-diisocyante	822-06-0	-	822-06-0	-

Inventory				
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**TSCA**
Hexamethylene-1,6-diisocyanate Homopolymer	28182-81-2	Listed	-	Listed
Hexamethylene-1,6-diisocyante	822-06-0	Listed	-	Listed

United States
U.S. – CERCLA/SARA – Hazardous Substances and their Reportable Quantities: None
U.S. – SARA – Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard
U.S. – CERCLA/SARA – Section 302 Extremely Hazardous Substances TPQs: None
U.S. – CERCLA/SARA – Section 313 – Emissions Reporting: None
U.S. – CERCLA/SARA – Section 313 – PBT Chemical Listing: None
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
U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 372.65) Supplier Notification Required Components: None
U.S. Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): Under RCRA it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

United States – California
U.S. – California – Proposition 65 – Carcinogens List: None
U.S. – California – Proposition 65 – Developmental Toxicity: None
U.S. – California – Proposition 65 – Maximum Allowable Dose Levels (MADL): None
U.S. – California – Proposition 65 – No Significant Risk Levels (NSRL): None
U.S. – California – Proposition 65 – Reproductive Toxicity – Female: None
U.S. – California – Proposition 65 – Reproductive Toxicity – Male: None

Based on information provided by suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716, File No. S7-40-10, Date 08-22-212).

CAS	Chemical Name	% By Weight	Regulation List
0000098-56-6	BENZENE-1-CHLORO-4 (TRIFLUOROMETHYL)-	100.000%	SARA312,VOC_exempt,TSCA,CA_Prop65 - California Proposition 65,CA_Prop65_Type_Toxicity_Cancer - CA_Proposition65_Type_Toxicity_Ca ncer,OSHA

WARNING: This product can expose you to chemicals including BENZENE-1-CHLORO-4(TRIFLUOROMETHYL)- which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

16. OTHER INFORMATION

Date Revised: 06/20/2023

MANUFACTURER'S NAME AND ADDRESS:
ONYX Concrete Coatings
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 714-572-6723

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 nor final location of usage