



THOUGHTFULLY DESIGNED COATINGS

Safety Data Sheet

SECTION 1: IDENTIFICATION

Product Name: KRETUS® Polyaspartic 80 (PA80), Part B

Recommended Use: For professional use only.

Manufacturer: KRETUS, 1055 W. Struck Ave., Orange, CA 92867

Telephone: (714) 694-2061

24 Hour Emergency Telephone Number: (800) 255-3924 (CHEMTEL)

Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

Comments: To the best of our knowledge, this Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200, 91/155/EEC.

SECTION 2: HAZARD IDENTIFICATION

Emergency Overview: May cause sensitization by skin contact (H317). May cause allergy or asthma symptoms or breathing difficulties if inhaled (H334). Harmful to aquatic life with long-lasting effects. May cause skin, eye, and respiratory tract irritation (H315, H319, H335). Harmful by inhalation and if swallowed (H302, H332).

GHS Classification of the Substance or Mixture (29 CFR 1910.1200):

Specific Organ Toxicity (single exposure): Category 3

Inhalation—Acute Toxicity: Category 4

Oral—Acute Toxicity: Category 4

Respiratory Sensitization: Category 1

Skin Sensitization: Category 1

Chronic Aquatic Toxicity: Category 3

Signal word: DANGER



Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face

protection. Use personal protective equipment as required.

Response: In case of fire, use water spray, carbon dioxide, dry chemical or foam for extinction.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Keep container tightly closed and locked in a cool, well-ventilated place.

Disposal: Dispose of contents/container to an approved waste disposal plant following applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None known.

Other Information: Not known.

General Information: This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Read the entire SDS for a more thorough evaluation of the hazards.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Name	CAS No.	Concentration (% by Weight)
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	>99.6
Parachlorobenzotrifluoride	98-56-6	~30%
Hexamethylene-1,6- Diisocyanate	822-06-0	<0.3ca

See Section 11 for Toxicological Information.

SECTION 4: FIRST-AID MEASURES

General Advice: Seek medical advice or medical attention if condition persists.

Eye contact: Rinse immediately with plenty of water for 15 minutes and seek advice of an eye specialist/physician. Continue rinsing eyes during transport to hospital. Do not remove contact lens if worn.

Skin contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Take victim immediately to hospital to obtain medical attention. Destroy or thoroughly clean contaminated shoes before reuse.

Inhalation: Move victims into fresh air. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Consult a doctor immediately.

Ingestion: If ingested, do not induce vomiting. Do not give fluids. If spontaneous vomiting is inevitable, prevent aspiration by keeping the victim's head below the knees. Get medical attention.

Notes to Physician: No specific treatment. Treat symptomatically. Call the poison control center immediately if large quantities have been ingested.

SECTION 5: FIRE-FIGHTING MEASURES

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

Unsuitable Extinguishing Media: High volume water jet.

Unusual Fire and Explosion Hazards: Toxic and irritating gases/fumes, including heated diisocyanate that is considered extremely dangerous, may be given off during burning or thermal decomposition.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, hydrogen cyanide, isocyanate, and isocyanic acid. dense black smoke, and other unidentified compounds.

Advice for Fire Fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire, 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. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. 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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate personal protective equipment. Evacuate surrounding areas and isolate the area. Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Implement site emergency response plan.

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. Make certain the absorbent material soaks up all liquids.

Collect and place spilled material in container (e.g., 55-gal salvage drum) for proper disposal according to appropriate local, state and federal regulations. Repeat application of absorbent material until all liquid has been removed from the surface. Do not fill the salvage container more than two-thirds full to allow for any expansion, and do not tighten the lid on the container. Store salvage container (make certain lid is loose to allow release of carbon dioxide) in a well-ventilated, isolated, and cool area for at least 72 hours. Properly dispose of the waste material and any contaminated equipment in accordance with existing federal, state and local regulations.

Decontaminate the spill surface area with a neutralization solution. A neutralization solution can be prepared with a combination of two solutions mixed 1:1 by volume: (Solution 1): Mineral Spirits (80%), VVM&P Naptha (15%) and Household Detergent (5%); (Solution 2): Monoethanolamine (50%) and water (50%). Other neutralization solutions include: ZEP® Commercial Heavy-Duty Floor Stripper, EASY OFF® Grill and Oven Cleaner, a solution of Simple Green® Pro HD Heavy-Duty Cleaner (50%) and Household Ammonia (50%), and a solution of Fantastic® Heavy Duty All Purpose Cleaner (90%) and Household Ammonia (10%). Check for residual contamination using Swype® test kits from Colorimetric Laboratories, Inc. (Telephone 847-803-3737) and follow directions provided by the test kits. Repeat decontamination as necessary.

Do not allow spilled material or wash water to enter sewers, surface waters or groundwater systems.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe-Handling: Put on appropriate personal protective equipment, PPE (see Section 8). Eating and drinking should be prohibited in areas where this material is handled, stored and processed. Remove contaminated PPE or clothing, wash hands and face before eating and drinking. Persons with a history of skin sensitization

problems should not be employed in any process in which this product is used. Use only in area provided with appropriate exhaust ventilation. Empty containers retain product residue and can be hazardous. Do not get in eyes, skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment.

Conditions for Safe Storage: Storage period is 6 months after delivery. Maximum storage temperature is 26°C (80°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: Avoid oxidizing agents. Avoid heat, flames and sparks.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Special Note for Exposure Control: Consult local authorities for further acceptable exposure limits.

Exposure Limits/ Guidelines

Chemical Name	Result	ACGIH/OSHA
Hexamethylene-1,6- Diisocyanate (CAS 822-06-0)	STEL	0.0111 pm
	TLV	0.005 ppm
	PEL	No data available.

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.

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. Environmental Exposure Controls: Avoid release to the environment. Construct a dike to prevent spreading of spills. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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 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.

A respirator that is recommended or approved for use in isocyanate-containing environments, including air-purifying or fresh air-supplied, may be necessary for spray applications or other situations such as high temperature use that may produce unacceptable 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 provided herein. Observe OSHA regulations for respirator use (29

CFR 1910.134).

When coatings containing isocyanate are spray applied, good industrial safety practice requires the use of some form of respiratory protection. During spray application of coatings containing this product, the use of a supplied-air (either positive pressure or continuous flow-type) respiratory is mandatory when one or more of the following conditions exist:

1. The airborne isocyanate concentrations are not known;
2. The airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours. This is 10 times the 8- hour TWA or the 15 minute STEL exposure limits.
3. The airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes. This is 10 times the 8 hour TWA or the 15 minute STE'L exposure limits.
4. 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:

1. The airborne isocyanate monomer concentrations are not known;
2. The airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours. This is 10 times the 8- hour TWA or the 15 minute STEL exposure limits.
3. The airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes. This is 10 times the 8 hour TWA or the 15 minute STE'L exposure limits.
4. 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, pre-filters should be changed whenever breathing resistance increases due to particulate buildup.

During non-spray operations such as mixing, batch-making, brush, or roller application, etc., at elevated temperatures (such as in the case where material is heated or material is applied to a hot substrate), exposure to airborne isocyanate vapors is possible. In this case, when the coatings system is applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respiratory is mandatory when one or more of the following conditions exists:

1. The airborne isocyanate concentrations are not known;
2. The airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8-hour TWA exposure limit);
3. 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);
4. 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, pre-filters should be changed whenever breathing resistance increases due to particulate buildup.

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 reuse.

Special Requirements: 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 work areas. 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 should be permitted.

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. Follow all label instructions.

Key to Abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

MSHA = Mine Safety and Health Administration

NIOSH = National Institute of Occupational Safety and Health exposures

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day 40hr/week

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid; clear colorless to pale yellow.
Odor	Naphthalenic-like.
Initial Boiling Point and Boiling Range	No data available
Flash Point	94°C (201°F), closed cup
Bulk Density	No data available.
Relative Density/Specific Gravity	1.12 ± 0.1
Water Solubility	Reacts.
UEL	10.5% (V) Solvent
LEL	0.9% (V) Solvent
NVW	100% ca
VOC	<50 g/L
Odor Threshold	No data available
pH	No data available
Melting/Freezing Point	No data available
Evaporation Rate	No data available
Flammability	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	No data available

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Stable

Possibility of Hazardous Reactions: Contact with moisture, other materials that react with isocyanates, or temperatures above 177°C (350°F) may cause polymerization.

Conditions to Avoid: Heat, flames and sparks.

Incompatible Materials: Water, amines, strong bases, alcohols, copper alloys.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, dense black smoke, hydrogen cyanide, isocyanate, isocyanic acid, and other compounds unidentified.

SECTION 11: TOXICOLOGICAL INFORMATION

Data on the product is not available. Data on a similar product is provided.

ACUTE TOXICITY

Hexamethylene-1,6-diisocyanate Homopolymer (CAS 28182-81-2)

LD50 Oral Rat, Female: $\geq 2,500$ mg/kg
 LD50 Inhalation Rat, Female: 0.390 – 0.543 mg/l 4h
 LD50 Dermal Rabbit: $> 2,000$ mg/kg
 LD50 Dermal Rat: $> 2,000$ mg/kg

Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

LD50 Oral Rat, Female: 746 mg/kg
 LD50 Inhalation Rat, Female: 0.124 mg/l 4h
 LD50 Dermal Rat: $> 7,000$ mg/kg

Parachlorobenzotrifluoride (CAS 98-56-6)

LD50 Oral Rat: 13000 mg/kg
 LC50 Inhalation Rat: 33mg/l 4h
 LD50 Dermal Rabbit: $> 2,000$ mg/kg

IMMEDIATE (ACUTE) EFFECTS**Hexamethylene-1,6-diisocyanate Homopolymer (CAS 28182-81-2)**

Skin Corrosion/Irritation (Rabbit, 4h): Slight skin irritation. Skin sensitizer.
 Eye Irritation (Rabbit): Slight irritant.
 Inhalation (Mouse): Respiratory sensitizer.
 STDT (One-time exposure): May cause respiratory irritation.
 Carcinogenicity: No data available.

Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

Skin Irritation (Rabbit): Corrosive.
 Eye Irritation (Rabbit): Corrosive.
 Dermal (Human): Sensitizer.
 Respiratory (Guinea Pig): Sensitizer.

Parachlorobenzotrifluoride (CAS 98-56-6)

Causes skin irritation and serious eye irritation.
 May have narcotic effects on the Central Nervous System (drowsiness, dizziness). Carcinogenicity: **IARC** (International Agency for Research on Cancer) **Group 2B (Suspected Human Carcinogen)**. Listed by **California Proposition 65 for cancer**. Not listed for carcinogenicity by ACGIH or NTP (National Toxicology Program).

SECTION 12: ECOLOGICAL INFORMATION**Toxicity****Hexamethylene-1,6-diisocyanate Homopolymer (CAS 28182-81-2)**

Acute and Prolonged Toxicity to Fish: LC50 100 mg/l (Zebra Fish, 96h), Acute Toxicity to Aquatic Invertebrates: EC50 100 mg/l (water flea, 48 h).

Parachlorotribenzofluoride (CAS 98-56-6)

LC50; Species: Lepomis macrochirus (Bluegill sunfish); Conditions: static; Concentration: 5.6 mg/L for 96 hr

Persistence and Degradability: Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

Not readily degradable.

Parachlorotribenzofluoride (CAS 98-56-6)

Persistence is unlikely.

Bioaccumulative Potential: Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

Accumulation is not expected.

Parachlorotribenzofluoride (CAS 98-56-6)

Not likely to bioaccumulate.

Other Adverse Effects: Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

An accumulation in aquatic organisms is not expected.

Other Information: Hexamethylene-1,6-diisocyanate (CAS 822-06-0)

LC0: ≥ 82.8 mg/l (Zebra Fish, 48 h)

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose in accordance with Federal, State, and Local laws and regulations. The generation of waste should be avoided or minimized wherever possible. Empty containers should be taken to an approved waste handling site for recycling or disposal. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty Container Precautions: Do not heat or cut container with electric or gas torch. Recondition or dispose of empty container in accordance with governmental laws and regulations. Do not reuse empty container without proper cleaning. Label precautions also apply to this container when empty.

SECTION 14: TRANSPORT INFORMATION

	UN Number	UN Proper Shipping Name	Transport Hazard Class(es)	Packing Group	Environmental Hazards
DOT	Not regulated	-	-	-	-
IMO/IMDG	UN3082	Environmentally hazardous substance, liquid, n.o.s. (Contains parachlorotribenzofluoride)	9	III	Marine pollutant
IATA/CAO	UN3082	Environmentally hazardous substance, liquid, n.o.s. (Contains parachlorotribenzofluoride)	9	III	Environmentally hazardous

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION**Safety and Environmental Regulations/ Legislation Specific for the Substance or Mixture SARA Hazard Classifications****States Right-to-Know List**

Component	CAS	MA	NJ	PA
Hexamethylene-1,6-diisocyanate	822-06-0	-	822-06-0	-
Parachlorobenzotrifluoride	98-56-6	-	98-56-6	-

Inventory

Component	CAS	Canada DSL	Canada NDSL	TSCA
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Hexamethylene-1,6-diisocyanate Homopolymer	28182-81-2	Listed	-	Listed
Hexamethylene-1,6-diisocyanate	822-06-0	Listed	-	Listed
Parachlorobenzotrifluoride	98-56-6	Listed	-	Listed

United States

Environment

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 Environment**California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)**

 **WARNING:** This product can expose you to parachlorobenzotrifluoride (PCBTF), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: OTHER INFORMATION**Hazardous Material Information System (HMIS)**

Scale 0-4		NFPA	HMIS
4 – Severe Hazard	Health	2	2
3 – Serious Hazard	Flammability	0	0
2 – Moderate Hazard	Reactivity	0	0
1 – Slight Hazard			
0 – Minimal Hazard			

Personal Protection: Safety goggles, neoprene rubber gloves, vapor respirator

Prepared by Kretus, Inc.

Revision Date 05/18/26

Disclaimer

The information and recommendations presented herein are accurate to the best of our knowledge. User must conduct their own tests to determine the suitability of these products for their particular purposes and usage. Because of numerous factors affecting results, KRETUS® and its affiliation makes no warranty of any kind, express or implied, including those of merchantability and fitness for purpose, other than material conforms to our applicable

current specifications. KRETUS[®] assumes no legal responsibility for use or reliance on the information contained in this safety data sheet.