



KRETUS®

Safety Data Sheet

SECTION 1: IDENTIFICATION

Product Name: KRETUS® Top Shelf® Epoxy (TSE) Part B (AP, EZ, FAST, MVR-EZ, MVR-FC, and TH), Top Shelf® Epoxy Patch Part B (EZ or FC), and Top Shelf® Epoxy Accelerant

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 CFR1910.1200, 91/155/EEC.

SECTION 2: HAZARD IDENTIFICATION

Skin Corrosion: Category 1C

Skin Sensitization: Category 1

Serious Eye Damage: Category 1

Germ Cell Mutagenicity: Category 2

Reproductive Toxicity: Category 1B

Specific Target Organ Toxicity (single exposure): Category 1

Specific Target Organ Toxicity: Category 1

Acute Aquatic Toxicity: Category 1

Chronic Aquatic Toxicity: Category 1

Danger

Harmful if swallowed or if inhaled. Causes damage to organs through prolonged or repeated exposure and severe skin burns and eye damage. May cause an allergic skin reaction. May damage fertility or the unborn child. Very toxic to aquatic life with long-lasting effects.



Prevention: Do not eat, drink, or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, and eye and face wear. Avoid release to the environment. Collect spillage.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: 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 in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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)	Comments
Alkylphenol	Trade secret	30-45	See above.
Aliphatic Amine	Trade secret	20-25	See above.
Isophorone Diamine	Trade secret	20-25	See above.
Alkyletheramine	Trade secret	10-15	See above.
Phenol, 4-Nonyl-, Branched	84852-15-2	6-10	See above.
Alkyl Amine	Trade secret	4-10	See above.
Benzyl Alcohol	Trade secret	5-15	See above.

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 or clothing 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: Rinse out mouth, spit out liquid. Do not induce vomiting and seek medical advice immediately. Never give anything by mouth to an unconscious person.

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: Water spray, alcohol-resistant foam, CO₂, dry powder.

Unsuitable Extinguishing Media: High volume water jet.

Unusual Fire and Explosion Hazards: Firefighters should wear NFPA approved self-contained breathing apparatus and full protective clothing. Avoid contact with product. Decontaminate equipment and protective clothing prior to re-use. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

Hazardous Decomposition Products: On combustion, toxic gases, including nitrogen oxides, carbon monoxide, carbon dioxide, tin/tin oxides.

Advice to 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. 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

Personal Precautions: No action shall be taken involving any personal risk or without suitable training.

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions: Water polluting material. May be harmful to the environment if released in large quantities. 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).

Methods for Cleaning up: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Contaminated absorbent material may pose the same hazard as the spilled product. Note: See Section 1 for emergency contact information and Section 13 for waste disposal.

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

Store between 4 to 26°C (40 to 80°F) in accordance with local regulations away from sources of heat, ignition, and direct sunlight. Store in original container. Keep in a dry, well-ventilated area, and away from incompatible materials (see section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled or unapproved containers. Use appropriate containment to avoid environmental contamination.

Incompatible Materials or Ignition Sources

Stable under recommended storage conditions. Do not store together with oxidizing and acidic materials. Do not store together with caustic solutions and alkalis. Store away from food. Avoid water, air humidity, oxidizing agents, cotton waste or other combustible materials. Keep away from sources of ignition - No smoking. Additional guidance on fire and explosion protection may be found in various consensus standards, including NFPA 30, 69 and 77 and API 2003 as well as OSHA regulation 29CFR1910.106.

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
Aliphatic Amine	STEL	No data available.
	TWA	0.100000 mg/m ³ (OSHA, ACGIH, NIOSH)
	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. A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product. 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 workplace.

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. Keep away from foodstuffs, beverages, and feed.

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.

Eye/Face: Use chemical-resistant goggles. Chemical safety goggles in combination with a full face shield (8-inch minimum) must be used if a splash hazard exists. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Contact lenses should not be worn.

Hands: Use permeation resistant gloves such as neoprene or nitrile. The glove must be impermeable and resistant to the product/the substance/the preparation. Selection of the glove material does not only depend on the material, but also on its quality and varies from manufacturer to manufacturer. The resistance of the glove material and manufacture must be determined in advance of the application/use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Skin/Body: Wear rubber or plastic apron and permeation-resistant clothing, chemical-resistant gloves, and long-sleeved shirts, and pants. Gloves must be inspected prior to use. Remove and wash contaminated clothing before reuse.

General 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	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 exposures
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid, amber
Odor	Characteristic amine
Melting/Freezing Point	N/A
Initial Boiling Point and Boiling Range	212°F
Evaporation Rate	N/A
Upper/Lower Flammability or Explosive Limits	not applicable
Auto-ignition Temperature	not applicable
Vapor Pressure (25°C)	< 5.00 mmHg at 70 °F (21 °C)
Vapor Density	N/A
Density (nominal)	68.047 lb/ft ³ (1.09 g/cm ³) at 70 °F (21 °C)
Solubility(ies) in water	Soluble >500g/L
VOC (Volatile Organic Compounds)	0 g/L
Odor Threshold	No data available
pH	No data available
Flash Point	201°F
Relative Density/Specific Gravity	No data available
Partition Coefficient: n-octanol/water	No data available
Decomposition Temperature	No data available
Viscosity	No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: May react with catalysts, oxidizing agents, peroxides, strong alkali and other radical forming substances.

Conditions to Avoid: Avoid oxidizing agents.

Incompatible Materials: Strong bases, strong oxidizing agents.

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

SECTION 11: TOXICOLOGICAL INFORMATION**ACUTE TOXICITY****For aliphatic amine:**

LD50 Oral Rat 1040 mg/kg (OCED Test Guideline 401)

LC50 Inhalation Rat 2.4 mg/l (4h)

For Alkyletheramine:

LD50 Oral Rat 1030 mg/kg (OCED Test Guideline 401)

For Isophorone Diamine:

LD50 Oral Rat 1,030 mg/kg

Other Information:

On the skin: Caustic effect on skin and mucous membranes.

On the eye: Strong caustic effect.

Sensitization:

Sensitization possible through skin contact.

Sensitizing effect through inhalation is possible by prolonged and repeated exposure.

CARCINOGENICITY

This product does not contain a component that is classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification: IARC, NTP, and OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.

REPRODUCTIVE TOXICITY: Presumed human reproductive toxicant.

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE: No data available.

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE: No data available.

ASPIRATION HAZARD: No data available.

ADDITIONAL INFORMATION: RTECS: WH7000000.

TO THE BEST OF OUR KNOWLEDGE THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES OF THIS PRODUCT HAVE NOT BEEN THOROUGHLY INVESTIGATED.

Toxicity Studies: Bisphenol A-(epichlorhydrin), Bisphenol A epoxy resin

Acute Oral Toxicity – Low toxicity, LD50 >2000 mg/kg.

Acute Dermal Toxicity – Low toxicity, LD50 >2000 mg/kg.

Medical Conditions Aggravated by Overexposure: Pre-existing skin disorders may be aggravated by over-exposure to this product.

SECTION 12: ECOLOGICAL INFORMATION**Toxicity**

This product is harmful to the environment. Very toxic to fish and other aquatic life with long-lasting effects.

Persistence and degradability: According to the results of tests of biodegradability, this product is partly biodegradable

Bioaccumulative potential: Although the product is partly biodegradable, significant residuals remain

Other adverse effects: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with federal, state, and local 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Refer to 40 CFR § 261.7 (residues of hazardous waste in empty containers).

Empty Container Precautions: Dispose of as unused product. 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.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

SECTION 14: TRANSPORT INFORMATION**DANGER**

	UN Number	UN Proper Shipping Name	Transport Hazard Class(es)	Packing Group	Environmental Hazards
DOT	UN2735	Polyamines, liquid, corrosive, n.o.s. (Isophorone Diamine)	8	III	Marine Pollutant
IMO/IMDG	UN2735	Polyamines, liquid, corrosive, n.o.s. (Isophorone Diamine)	8	III	Marine Pollutant
IATA/CAO	UN2735	Polyamines, liquid, corrosive, n.o.s. (Isophorone Diamine)	8	III	Marine Pollutant

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

SECTION 15: REGULATORY INFORMATION														
Country	Regulatory List	Notification												
USA	TSCA	listed/registered												
EU	EINECS	listed/registered												
Canada	DSL	listed/registered												
China	SEPA	listed/registered												
Japan	ENCS	listed/registered												
<p>US Federal Regulations U.S. – CERCLA/SARA – Hazardous Substances and their Reportable Quantities: None U.S. – SARA – Section 311/312 Hazard Categories: None 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.</p> <p>U.S. State Regulations California Safe Drinking Water & Toxic Enforcement Act (Proposition 65) - This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm.</p> Based on information provided by Kretus 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).														
SECTION 16: OTHER INFORMATION														
<p>Hazardous Material Information System (HMIS):</p> <p>Scale 0-4 4 – Severe Hazard 3 – Serious Hazard 2 – Moderate Hazard 1 – Slight Hazard 0 – Minimal Hazard</p>														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 25%;">NPFA</th> <th style="width: 25%;">HMIS</th> </tr> </thead> <tbody> <tr> <td>Health</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Flammability</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>		NPFA	HMIS	Health	3	3	Flammability	1	1	Reactivity	0	0	
	NPFA	HMIS												
Health	3	3												
Flammability	1	1												
Reactivity	0	0												

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

Prepared by Kretus, Inc.

Revision Date 1/17/23

Revision Note Reformatting

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.