KRETUS GROUP®

Safety Data Sheet

Section 1: Identification

Product Name: **KRETUS® Polyaspartic, Part A (72 EZ, 72 Fast, 85 EZ, 85 Fast)**
Recommended Use: For residential and industrial use
Manufacturer: Kretus Group® 1426 W Collins Ave, Orange, CA 92867
Telephone: (714) 681-2286
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 and Canadian Hazardous Product Act.

Section 2: Hazard Identification

Emergency Overview: Combustible. May cause sensitization by skin contact (H317). Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment (H412). May cause skin, eye, and respiratory tract irritation. Harmful by inhalation and if swallowed. Vapors or mist may be a fire and explosion hazard when exposed to high temperatures or ignition.

Component Information/Information on Non-Hazardous Components: Contains Parachlorobenzotrifluoride (Benzene, 1-Chloro-4 (Trifluoromethyl))

GHS Classification:

Flammable Liquid	Category 3
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity	Category 2

GHS label elements: Hazard pictograms/symbols

GHS Signal Word: DANGER!

GHS Hazard Statements:

H317: May cause an allergic skin reaction.
H412: Harmful to aquatic life with long lasting effects.
Flammable liquid and vapor. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.

GHS Precautionary Statements:

P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P321: Specific treatment (see warning on this label).
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P363: Wash contaminated clothing before reuse.
P305+P351+P338: 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:
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P235: Keep Cool
Disposal:
P501: Dispose of contents/container to an approved waste disposal plant in accordance with 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

Substances

Chemical Name	CAS NUMBERS	% (by weight)	Comments
Aspartic Acid, N, N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-,1,1'4,4"-tetraethyl ester	136210-32-7	Trade Secret	
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester	136210-30-5	Trade Secret	
Benzene, 1-Chloro-4(Trifluoromethyl)	98-56-6	15%	

See Section 11 for Toxicological Information.

Section 4: First-Aid Measures

General Advice: Seek medical advice or medical attention if condition persists.
Inhalation: Move victims into fresh air. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Consult a doctor immediately.
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.
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.
Ingestion: If ingested, do not induce vomiting. Parachlorobenzotrifluoride is not soluble. 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: All extinguishing media are suitable. Use water with caution. Material will float and may ignite on surface of water. Use water spray to keep fire-exposed containers cool.
Unsuitable Extinguishing Media: None known.
Unusual Fire and Explosion Hazards: Flammable liquid. Does not sustain combustion but will burn under fire conditions. Over-heated drums may rupture. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Vapors may spread long distances and ignite. Vapors or fumes may form explosive mixture with air. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.
Hazardous Combustion Products: carbon dioxide, carbon monoxide, oxides of nitrogen, dense black smoke and other undetermined compounds.
Advice for Fire Fighters: NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing must be worn in case of fire. 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. 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. Contain spill or release with a dike to prevent flow into sewers or streams. Pump into container for disposal or reclamation. Soak up small spills with absorbent material.

Section 6: Accidental Release Measures

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

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.

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: Hazardous polymerization does not occur. Avoid oxidizing agents. Avoid heat, flames and sparks. Hazardous decomposition products include chlorine and fluorine containing gases, carbon dioxide, carbon monoxide and other undetermined compounds.

Section 8: Exposure Controls/ Personal Protection

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

Exposure Limits/ Guidelines		
Chemical Name	**Result**	**ACGIH/OSHA**
Benzene, 1-Chloro-4(Trifluoromethyl) (CAS 98-56-6)	STELs	None established
	TWAs	20 ppm (8 h)
	PEL	None established
Aspartic Acid, N, N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-,1,1'4,4"-tetraethyl ester (CAS 136210-32-7)	STELs	None established
	TWAs	None established
	PEL	None established
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester	PEL	None established
	STELs	None established
	PEL	None established

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 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 or safety glasses with side shields Chemical safety goggles in combination with a full face shield must be used if a splash hazard exists (ANSI Z8.1).

Hands: Use permeation resistant gloves such as PVC or nitrile rubber for limited use. Wear chemical resistant gloves such as North Silver Shield (Siebe North, Inc.) or Viton (The Chemours Company).

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.

Key to Abbreviations
ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
MSHA = Mine Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day 40hr/week exposures
STEL = Short Term Exposure Limits are based on 15 minute exposures

Section 9: Physical and Chemical Properties

Form	Liquid
Odor	Naphthalenic-like.
Color	Clear
Boiling Point	Not established
Specific Gravity	1.07 +/- 0.1
Bulk Density	1073.645 kg/m3 Approx
Flash Point	43°C (109°F)
Solubility in water	Insoluble
UEL	10.5% (V) Solvent
LEL	0.9% (V) Solvent
NVW	84% ca
Volatile Organic Compounds	<50g/L

Section 10: Stability and Reactivity

Chemical Stability: Stable
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Heat, flames and sparks.
Incompatible Materials: Oxidizing agent.
Hazardous Decomposition Products: Fluorine and chlorine containing gases, carbon dioxide, carbon monoxide, other undetermined compounds.

Section 11: Toxicological Information

ACUTE TOXICITY
Benzene, 1-Chloro-4(Trifluoromethyl) (CAS 98-56-6):

LD50:	Oral Rat >6.8 g/kg
LC50:	Inhalation Rat >4479 ppm/4h
LD50:	Dermal Rabbit >2.7 g/kg
Primary Skin Irritation:	Non-irritating (rabbit)
Primary Eye Irritation:	Non-irritating (rabbit)

Aspartic Acid, N, N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-,1,1'4,4"-tetraethyl ester (CAS 136210-32-7)
LD50: Oral Rat >2,000 mg/kg LC50 Inhalation Rat >4,224 mg/l, 4h
LD50: Dermal Rat >2,000 mg/kg

Skin Corrosion/Irritation:	(Rabbit, 24h): None
Skin Sensitization (Guinea Pig):	Positive
Carcinogenicity:	OSHA Not Listed. IARC Not Listed. NTP Not Listed.

OTHER INFORMATION RELATING TO Parachlorobenzotrifluoride (PCBTF):
A 28-day range-finding inhalation study was conducted in male and female Sprague-Dawley rates exposed to 0, 100, 250, 500, or 1000 ppm for 6 hour/day, 5 days/week. Clinical signs included increased activity at 250 ppm and above. Liver and kidney weights were increased. Microscopic change in male kidneys stained positive for alpha-2-U globulin and the effects were considered not relevant to humans. Liver cell hypertrophy was seen at all exposure in males. Liver changes were consistent with clinical chemistry and PCBTF-blood level analysis and are believed to be an adaptive response, due to increased liver metabolism.
Gavage studies in laboratory rodents for treatment periods of 14, 28, and 90 days have demonstrated significant liver and kidney toxicity at dose levels of 400-1000 mg/kg/day. Evidence of target organ toxicity included significant increases in relative liver and kidney weights, clinical chemistry values and histopathological findings. Renal toxicity, which occurred only in male rats, was apparently due to "hyaline droplet" nephropathy and is, therefore, highly unlikely to develop in man. The NOAEL's for all these studies range from 10 to 100 mg/kg/day.
CNS effects were observed in rats exposed to PCBTF at or above 2822 ppm for 4 hours.

A 90-day (13 weeks) rat inhalation toxicity and neurobehavioral study was conducted using exposures of 6 hours/day, 5 days/week, at concentrations of 0, 10, 50, and 250 ppm. There were no PCBTF-related macroscopic observations. Microscopically, PCBTF-related centrilobular hypertrophy was present only in the livers of males and females at the high dose (250 ppm) after 13 weeks of exposure. No centrilobular hypertrophy was observed at any level among recovery animals. There were no PCBTF-related effects on the nervous system as measured by a functional observation battery, muscular activity measurements and neuropathology. A NOEL of 50 ppm was established in this study for liver hepatocyte hypertrophy in male and female rats. If the hepatocyte hypertrophy observed is considered to be an adaptive response to PCBTF, the NOAEL for this study is 250 ppm.

Section 12: Ecological Information

For Parachlorobenzotrifluoride:

Acute and Prolonged Toxicity to Fish:	Rainbow Trout, 96h	LC50 13.5 mg/L
	Bluegill Sunfish 96h	LC50 12.0 mg/L
Acute Toxicity to Aquatic Invertebrates:	Flathead Minnow, 31 days	MATC >0.54 mg/L
Invertebrates:	Water Flea, 48 h	LC50 12.4 mg/L
	Water Flea, 21 days	MATC > 0.03<0.05 mg/L (acetone used as solvent carrier)

Persistence and Degradability: No data available.
Bioaccumulative Potential: Inconclusive due to volatility.
Other Adverse Effects: Toxicity to Aquatic Plants: IC50 500 mg/l End Point --Growth (Green and blue-green algae, 72 h).
Other Information: None.

For Aspartic Acid, N, N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-,1,1'4,4"-tetraethyl ester (CAS 136210-32-7) and Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester:

Acute Toxicity to Fish:	Zebra Fish, 96h	LC50 66 mg/L
	Water Flea, 96h	LC50 88.6 mg/L
Acute Toxicity to algae:		ErC50 113 mg/L

Persistence and Degradability: Not readily degradable.
Bio accumulative Potential: Bioaccumulation ca. 8,228 BCF.
Other Adverse Effects: Toxicity to terrestrial Plants: EC50 ≥100 mg/kg, 14d)
Other Information: Toxicity to Microorganisms: EC 50: 3,110 mg/l (bacteria, 3 h).

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).

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

Section 14: Transport Information

Signal Word: DANGER!

	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	1866	Resin Solution, Flammable (Contains PCBTF)	3	III	Toxic to aquatic life with long-lasting effects.
IMO/IMDG	1866	Resin Solution, Flammable (Contains PCBTF)	3	III	Toxic to aquatic life with long-lasting effects.
IATA/ICAO	1866	Resin Solution, Flammable (Contains PCBTF)	3	III	Toxic to aquatic life with long-lasting effects.

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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

State Right to Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl) bis-, 1,1',4,4'-tetraethyl ester	CAS 136210-32-7	CAS 136210-32-7	CAS 136210-32-7	CAS 136210-32-7
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester	CAS 136210-30-5	CAS 136210-30-5	CAS 136210-30-5	
Parachlorobenzotrifluoride	98-56-6	CAS 98-56-6	CAS 98-56-6	CAS 98-56-6
Inventory				
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**TSCA**
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl) bis-, 1,1',4,4'-tetraethyl ester	136210-32-7	136210-32-7	-	136210-32-7
Aspartic Acid, N, N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester	136210-30-5	136210-30-5	-	
Parachlorobenzotrifluoride	98-56-6	98-56-6	-	98-56-6

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, Fire 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

United States – California
Environment
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

Section 16: Other Information

Hazardous Material Information System (HMIS):

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

Personal Protection safety goggles, neoprene rubber gloves, vapor respirator.

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 GROUP® 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 GROUP® assumes no legal responsibility for use or reliance on the information contained in this safety data sheet.
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Revision Note No information available