

CARBONBOND CARBON FIBER CRACK REPAIR KIT SAFETY INFORMATION

COMPANY IDENTIFICATION

Intech Anchoring Systems
8250 Bunkum Rd, Caseyville, IL 62232
800-223-7015

Emergency Telephone INFOTRAC: 800-535-5053

CARBON FIBER

HAZARDS IDENTIFICATION

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This SDS contains valuable information critical to the safe handling and proper use of the product.

Primary Route of Exposure:

Skin Contact:

Fiber dust may cause irritation, itchiness or sometimes allergic dermatitis.

Eye Contact:

Fiber or Fiber Dust may cause irritation or injury from scratching.

Inhalation:

Dust may cause irritation.

Ingestion:

Unknown.

Chronic Toxicity/Carcinogenicity:

Not Listed.

Medical Conditions Aggravated by Exposure:

Not Applicable.

Signal word:

No signal word.

Precautionary Statement:

Possible irritant to the skin, eyes, and respiratory tract when processed due to nuisance dust generation. Fiber is electrically conductive.

See Physical Hazards Section for additional information. In the supplied form the product is not explosive however, the processing and buildup of fine dust can lead to a risk of dust explosion. Warning: processing may create combustible dust concentrations in the air. No specific hazards known.

COMPOSITION/ INFORMATION ON INGREDIENTS

Component Concentration CAS Number:

Carbon Fiber (Polyacrylonitrile based): 95 ~ 100% 7440-44-0

Epoxy (Sizing agent): 0.5 ~ 2.0 % Trade Secret.

FIRST AID MEASURES

Skin:

Wash with water and if irritation persists or allergic reaction occurs, consult a medical physician.

Eye:

Wash with plenty of clean water and, if irritation persists, consult a medical physician.



CARBONBOND[®]
STRUCTURAL SYSTEMS

Inhalation: Evacuate from the dusty contaminated area and walk outside to get fresh air.
Ingestion: Consult a medical physician.
Notes to Physician: Fiber is inert, but it is so sharp and strong that it may cause physical injury.

FIRE-FIGHTING MEASURES

Flammable Properties:
Flash Point: Not Applicable.
Flammable Limits:
LFL (Lower Flash Limit): Not Applicable.
UFL (Upper Flash Limit): Not Applicable.
Firefighting Instruction: Not Applicable.

ACCIDENTAL RELEASE MEASURES

Aquatic Toxicity: Unknown.
Steps to be taken if material is released/spilled: Vacuum up and place in a waste disposal container to an approved landfill.
Neutralizing Chemicals: Not Applicable.

EXPOSURE CONTROL/ PERSONAL PROTECTION

Precautions to be taken in Handling & Storing: Airborne fiber dust and broken filaments should be controlled as to minimize (1) Skin irritation, (2) Electrical malfunction to machinery, electronics, etc. due to fiber electrical conductivity. Maintain good housekeeping to control dust accumulations.
Other Precautions: Isolate all electrical equipment in surrounding areas where fiber is handled or used. Any contact between airborne particles and filaments may cause electrical shorts on any electrical equipment.

FIRE-FIGHTING MEASURES

Ventilation Requirements: Local exhaust for fiber dust only.
Personal Protective Equipment:
Eye/Face Protection: Safety goggles and dust mask.
Skin Protection: Protective clothing (rubber gloves) which can cover full body.
Respiratory Protection: Dust masks.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Filament.
Odor: Odorless.
Density (g/cm³): 1.8.
Color: Black.
Boiling Point: N/A.
Vapor Pressure: N/A.
Melting Point: N/A.
Solubility (%):
Vapor Density: N/A in water Insoluble.
Volatility: N/A in others N/A.



CARBONBOND[®]
STRUCTURAL SYSTEMS

PHYSICAL HAZARDS (STABILITY & REACTIVITY)

Chemical Stability:	Stable.
Conditions to Avoid:	Strong oxidizing agents. Accumulation of fine dust may entail the risk of a dust explosion in the presence of air. The fine dust from a carbon fiber compound or composite that is cut or formed can create additional dust explosion risk depending on the resin or compounding agent. A process hazard analysis is recommended to determine what, if any, risks are present.
Incompatibilities:	None.
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition Product:	None.

TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	Not determined.
Acute Dermal Toxicity:	Irritant.
Acute Inhalation Toxicity:	Irritant.
Irritation/Corrosion:	
Skin:	
Mechanical:	Skin irritation.
Eyes:	Not determined.
Sensitization:	Not determined.
Sub-acute Toxicity:	Not determined.
Chronic Toxicity:	Not determined.
Mutagenicity:	Not determined.
Carcinogenicity:	Not determined.
Reproductive Toxicity:	Not determined.
Experiences Made in Practice:	Fiber abrasion can cause mechanical skin irritation.

ECOLOGICAL INFORMATION

Biodegradability:	Not biodegradable.
Bioaccumulation:	Unknown.
Aqua Toxicity:	Unknown.

DISPOSAL CONSIDERATION

Waste Disposal Method Dispose fiber in accordance with applicable governmental non-hazardous solid waste regulations.

TRANSPORT INFORMATION

Classification according to DOT:	Non Hazardous.
Classification according to DOT:	Not classified as "Dangerous Goods".
Classification according to DOT:	Not classified as "Dangerous Goods".

REGULATORY INFORMATION

This product is not classified as a toxic chemical or hazardous material. No special warning label is required.

TSCA (US) NO:	CARBON FIBER 7440-44-0.
EINECS NO:	N/A.
WHMIS (Canada):	N/A.



CAS:	7440-44-0.
OSHA:	N/A.
SARA TITLE III Sec.313 Toxic Chemicals:	None.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, or provincial, and local laws.



777 RESIN SAFETY INFORMATION

IDENTIFICATION

Product Identifier:	
Product Name:	777 Resin.
Other Means of Identification:	
Product Code:	777 Part A.
Synonyms:	None.
Recommended Use of the Chemical and Restrictions on Use:	
Recommended Use:	Industrial coatings.
Uses Advised Against:	No information available.

HAZARDS IDENTIFICATION

Classification:	
OSHA Regulatory Status:	This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Skin Corrosion/Irritation:	Category 2.
Serious Eye Damage/Eye Irritation:	Category 2A.
Skin Sensitization:	Category 1.
Label Elements:	Emergency Overview. Warning. Hazard statements. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.



PHYSICAL PROPERTIES

Appearance:	Viscous paste.
Physical State:	Solid.
Odor:	Slight sweet.

PRECAUTIONARY STATEMENTS

Prevention:	Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.
Response:	
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.
If on Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs, get medical advice/attention.



Disposal: Dispose of contents/container to an approved waste disposal plant.
Hazards Not Otherwise Classified (HNOC): Not applicable.

OTHER INFORMATION

May be harmful if swallowed. Harmful to aquatic life with long lasting effects.
Unknown Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

COMPOSITION/INFORMATION ON INGREDIENTS

Substance: Not applicable.
Mixture:

Chemical Name:	CAS No:	Weight (%):
Quartz*	14808-60-7	30-60
Bisphenol A-epichlorohydrin polymer*	25068-38-6	30-60
Phenol, polymer with formaldehyde, glycidyl ether*	28064-14-4	3-7
Silica, amorphous, precipitated and gel*	112926-00-8	1-5
Titanium dioxide*	13463-67-7	1-5

*The exact percentage (concentration) of composition has been withheld as a trade secret.

FIRST AID MEASURES

General Advice: If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
Eye Contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.
Inhalation: Remove to fresh air. If symptoms persist, call a physician.
Ingestion: Rinse mouth. Drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-Protection of the First Aider: Use personal protective equipment as required.

Most Important Symptoms and Effects, Both Acute and Delayed:
Symptoms: May cause redness and tearing of the eyes. May cause skin irritation. Redness.
Indication of any immediate medical attention and special treatment needed:
Note to Physicians: May cause sensitization in susceptible persons. Treat symptomatically.

FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry



Unsuitable Extinguishing Media: chemical, CO₂, sand, earth, water spray or regular foam. Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical: In the event of fire and/or explosion do not breathe fumes. May cause sensitization in susceptible persons. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion Data:

Sensitivity to Mechanical Impact:	None.
Sensitivity to Static Discharge:	None.

Protective Equipment and Precautions for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment as required. Avoid contact with eyes and skin. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment: Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up: Use personal protective equipment as required. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

HANDLING AND STORAGE

Precautions for Safe Handling: Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Use with local exhaust ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

Storage Conditions: Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Incompatible Materials: Strong oxidizing agents. Strong acids. Strong bases.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:
Exposure Guidelines:



Chemical Name:	ACGIH TLV:	OSHA PEL:	NOISH IDLH:
Quartz 14808-60-7	TWA: 0.025 mg/ m ³ respirable particulate matter	TWA: 50 Qg/m ³ TWA: 50 Qg/m ³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays: (250)/ (%SiO ₂ + 5) mppcf TWA respirable fraction: (10)/ (%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust
Silica, amorphous, precipitated and gel 112926-00-8	-	TWA: 20 mppcf : (80)/(% SiO ₂) mg/m ³ TWA	-
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust	IDLH: 5000 mg/m ³ TWA: 2.4 mg/m ³ CIB 63 fine TWA: 0.3 mg/m ³ CIB 63 ultrafine, including engineered nanoscale

NIOSH IDLH:

Appropriate Engineering Control:
Engineering Controls:

Immediately Dangerous to Life or Health.

Showers.
Eyewash stations.
Ventilation systems.

Personal Protective Equipment:

Eye/Face Protection:
Skin and Body Protection:
Respiratory Protection:

Wear safety glasses with side shields (or goggles).
Wear protective gloves and protective clothing.
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.

General Hygiene Considerations:

PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Appearance:

Odor:

Odor Threshold:

Color:

Solid.

Viscous paste.

Slight sweet.

No Information available.

White pigmented.



Property:	Values:	Remarks/Methods:
pH:	No informaton available.	
Melting Point/Freezing Point:	No informaton available.	
Boiling Point/Boiling Range:	> 200°C / > 292°F.	
Flash Point:	150°C / > 302°F.	Pensky-Martens Closed Cup (PMCC).
Evaporation Rate:	No information available.	
Flammability (solid, gas):	No information available.	
Flammability Limit in Air:		
Upper Flammability Limit:	No information available.	
Lower Flammability Limit:	No information available.	
Vapor Pressure:	No information available.	
Vapor Density:	No information available.	
Relative Density:	1.53 g/cm ³ .	
Water Solubility:	Partially soluble.	
Solubility in Other Solvents:	No information available.	
Partition Coefficient:	No information available.	
Autoignition Temperature:	No information available.	
Decomposition Temperature:	No information available.	
Kinematic Viscosity:	No information available.	
Dynamic Viscosity:	No information available.	
Explosive Properties:	Not an explosive.	
Oxidizing Properties:	Not applicable.	
Other Information:		
Softening Point:	No information available.	
Molecular Weight:	No information available.	
VOC Content (%):	0 g/L.	
Density:	No information available.	
Bulk Density:	No information available.	

STABILITY AND REACTIVITY

Reactivity:	No data available.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	None under normal processing.
Conditions to Avoid:	Elevated Temperature. Incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Strong acids. Strong bases.
Hazardous Decomposition Products:	Thermal decomposition can lead to release of irritating and toxic gases and vapors.

TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:	
Inhalation:	Based on available data, the classification criteria are not met.
Eye Contact:	Irritating to eyes.
Skin Contact:	Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Ingestion:	Based on available data, the classification criteria are not met.



Chemical Name:	Oral LD50:	Dermal LD50:	Inhalation LC50:
Bisphenol A-epichlorohydrin polymer 25068-38-6	= 11400 mg/kg (Rat)	-	-
Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)	-	-

Information on Toxicological Effects:

Symptoms:

May cause skin irritation. May cause an allergic skin reaction. May cause redness and tearing of the eyes. Delayed and immediate effects as well as chronic effects from short and long-term exposure.

Sensitization:

May cause sensitization by skin contact.

Germ Cell Mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

This product contains titanium dioxide which is classified as a possible carcinogen when present as respirable dust. This is not relevant for this product since it is a liquid. This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product.

Chemical Name:	ACGIH:	IARC:	NTP:	OSHA:
Quartz 14808-60-7	A2	Group 1	Known	X
Silica, amorphous, precipitated and gel 112926-00-8	-	Group 2	-	-
Titanium dioxide 13463-67-7	-	Group 2B	-	X

ACGIH (American Conference of Governmental Industrial Hygienists):

A2:

Suspected Human Carcinogen.

IARC (International Agency for Research on Cancer):

Group 1:

Carcinogenic to Humans.

Group 2B:

Possibly Carcinogenic to Humans.

Group 3:

Not Classifiable as to Carcinogenicity in Humans.

NTP (National Toxicology Program):

Known:

Known Carcinogen.

OSHA (Occupational Safety and Health Administration of the US Department of Labor):

X:

Present.

Reproductive Toxicity:

Based on available data, the classification criteria are not met.

STOT:

Single Exposure:

Based on available data, the classification criteria are not met.

Repeated Exposure:

Based on available data, the classification criteria are not met.

Chronic Toxicity:

Avoid repeated exposure.

Target Organ Effects:

Eyes, Skin, Central nervous system, Respiratory system, lungs.

Aspiration Hazard:

Based on available data, the classification criteria are not met.

Numerical Measures of Toxicity:

Product information.



The following values are calculated based on chapter 3.1 of the GHS document:
ATEmix (oral) 4,000.00 mg/kg.

ECOLOGICAL INFORMATION

Ecotoxicity: Harmful to aquatic life with long lasting effects. 56 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical Name:	Algae/aquatic plants:	Fish:	Crustacea:
Phenol, polymer with formaldehyde, glycidyl ether 28064-14-4	-	1 - 10: 96 h mg/L LC50	1 - 10: 24 h Daphnia magna mg/L EC50

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

DISPOSAL CONSIDERATIONS

Waste Treatment Methods:
Disposal of Wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging: Do not reuse container.

TRANSPORT INFORMATION

DOT: Not regulated.
TDG: Not regulated.
IATA: Not regulated.
IMDG: Not regulated.

REGULATORY INFORMATION

TSCA: Complies.
DSL/NDSL: Complies.
EINECS/ELINCS: Complies.
IECSC: Complies.
KECL: Complies.
PICCS: Complies.
AICS: Complies.

Legend:
TSCA: United States Toxic Substances Control Act Section 8(b) Inventory.
DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List.
EINECS/ELINCS: European Inventory of Existing Chemical Substances/ European List of Notified Chemical Substances.
ENCS: Japan Existing and New Chemical Substances.
IECSC: China Inventory of Existing Chemical Substances.
KECL: Korean Existing and Evaluated Chemical Substances.
PICCS: Philippines Inventory of Chemicals and Chemical Substances.
AICS: Australian Inventory of Chemical Substances.



US Federal Regulations:

SARA 313:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories:

Acute Health Hazard: Yes.
Chronic Health Hazard: No.
Fire Hazard: No.
Sudden Release of Pressure Hazard: No.
Reactive Hazard: No.

CWA (Clean Water Act):

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA:

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations:

California Proposition 65:

This product contains the following Proposition 65 chemicals.

Chemical Name:	California Proposition 65:
Quartz - 14808-60-7	Carcinogen
Titanium dioxide - 13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations:

Chemical Name:	New Jersey:	Massachusetts:	Pennsylvania:
Quartz 14808-60-7	X	X	X
Silica, amorphous, precipitated and gel 112926-00-8	X	X	X
Titanium dioxide 13463-67-7	X	X	X

U.S. EPA Label Information:

EPA Pesticide Registration:

Number Not applicable.

OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA:

Health Hazards: 2
Flammability: 1
Instability: 0
Physical and Chemical Properties: -



HMIS:

Health Hazards:	2
Flammability:	1
Physical Hazards:	0
Personal Protection:	X

Issue Date:	15-Mar-2016.
Revision Date:	21 June-2024.
Revision Note:	No information available.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, or provincial, and local laws.



777 HARDENER SAFETY INFORMATION

IDENTIFICATION

Product Identifier:	
Product Name:	777 Resin.
Other Means of Identification:	
Product Code:	777 Part B.
Synonyms:	None.
Recommended Use of the Chemical and Restrictions on Use:	
Recommended Use:	Industrial coatings.
Uses Advised Against:	No information available.

HAZARDS IDENTIFICATION

Classification:	
OSHA Regulatory Status:	This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Acute Oral Toxicity:	Category 4.
Skin Corrosion/Irritation:	Category 2.
Serious Eye Damage/Eye Irritation:	Category 2.
Skin Sensitization:	Category 1.
Label Elements:	Emergency Overview. Warning. Hazard statements. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.



PHYSICAL PROPERTIES

Appearance:	Viscous paste.
Physical State:	Solid.
Odor:	Slight amine.

PRECAUTIONARY STATEMENTS

Prevention:	Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.
Response:	
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.



If on Skin: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs, get medical advice/attention.

If Swallowed: Call a Poison Center or doctor/physician if you feel unwell. Rinse mouth.

Disposal: Dispose of contents/container to an approved waste disposal plant.

Hazards Not Otherwise Classified (HNOC): Not applicable.

OTHER INFORMATION

May be harmful if swallowed. Harmful to aquatic life with long lasting effects.

Unknown Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

COMPOSITION/INFORMATION ON INGREDIENTS

Substance: Not applicable.
Mixture:

Chemical Name:	CAS No:	Weight (%):
Quartz*	14808-60-7	30-60
Amine blend*	Proprietary	10-30
Wollastonite (Ca(SiO3))*	13983-17-0	10-30
2,4,6-Tri(dimethylaminomethyl)phenol*	90-72-2	3-7
Diethylenetriamine*	111-40-0	1-5
1,5-Pentanediamine, 2-methyl-*	15520-10-2	1-5
Silica, amorphous, precipitated and gel*	112926-00-8	1-5

*The exact percentage (concentration) of composition has been withheld as a trade secret. If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

FIRST AID MEASURES

General Advice: In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Skin Contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation persists, call a physician.

Inhalation: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If symptoms persist, call a physician.

Ingestion: Call a physician or poison control center immediately. Rinse mouth. Drink plenty of water. Do not induce vomiting without medical advice.



Self: Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most Important Symptoms and Effects, Both Acute and Delayed Symptoms: May cause redness and tearing of the eyes. May cause skin irritation. May result in permanent damage including blindness. May cause allergic skin reaction. Coughing and/or wheezing.

Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

Note to Physicians:

FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, sand, earth, water spray or regular foam.

Unsuitable Extinguishing Media: Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical: In the event of fire and/or explosion do not breathe fumes. May cause sensitization in susceptible persons. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion Data:

Sensitivity to Mechanical Impact: None.

Sensitivity to Static Discharge: None.

Protective Equipment and Precautions for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

ACCIDENTAL RELEASE MEASURES

Personal Precautions: Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Methods for Cleaning Up: Cover liquid spill with sand, earth or other non-combustible absorbent material. Use personal protective equipment as required. Dam up. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/



mist/vapors/spray. Do not eat, drink or smoke when using this product.

Storage Conditions:

Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Incompatible Materials:

Strong oxidizing agents. Strong acids. Strong bases.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:

Exposure Guidelines:

Chemical Name:	ACGIH TLV:	OSHA PEL:	NOISH IDLH:
Quartz 14808-60-7	TWA: 0.025 mg/m ³ respirable particulate matter	TWA: 50 Qg/m ³ TWA: 50 Qg/m ³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays: (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction: (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust
Wollastonite (Ca(SiO ₃)) 13983-17-0	TWA: 1 mg/m ³ inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica	-	-
Diethylenetriamine 111-40-0	TWA: 1 ppm S*	-	TWA: 1 ppm TWA: 4 mg/m ³
Silica, amorphous, precipitated and gel 112926-00-8	-	TWA: 20 mppcf: (80)/(% SiO ₂) mg/m ³ TWA	

Legend; S*: Skin Absorber

NIOSH IDLH:

Immediately Dangerous to Life or Health.

Appropriate Engineering Control:

Engineering Controls:

Showers.

Eyewash stations.

Ventilation systems.

Personal Protective Equipment:

Eye/Face Protection:

Tight sealing safety goggles.

Skin and Body Protection:

Wear protective gloves and protective clothing.

Respiratory Protection:

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. Handle in accordance with good industrial hygiene and safety practice.

General Hygiene Considerations:



PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid.
Appearance:	Viscous paste.
Odor:	Amine.
Odor Threshold:	No Information available.
Color:	Tan.

Property:	Values:	Remarks/Methods:
pH:	No information available.	
Melting Point/Freezing Point:	No information available.	
Boiling Point/Boiling Range:	> 200°C / > 392°F.	
Flash Point:	100°C / > 212°F.	Pensky-Martens Closed Cup (PMCC).
Evaporation Rate:	No information available.	
Flammability (solid, gas):	No information available.	
Flammability Limit in Air:		
Upper Flammability Limit:	No information available.	
Lower Flammability Limit:	No information available.	
Vapor Pressure:	No information available.	
Vapor Density:	No information available.	
Relative Density:	1.62 g/cm ³ .	
Water Solubility:	Slightly soluble.	
Solubility in Other Solvents:	No information available.	
Partition Coefficient:	No information available.	
Autoignition Temperature:	No information available.	
Decomposition Temperature:	No information available.	
Kinematic Viscosity:	No information available.	
Dynamic Viscosity:	No information available.	
Explosive Properties:	Not an explosive.	
Oxidizing Properties:	Not applicable.	
Other Information:		
Softening Point:	No information available.	
Molecular Weight:	No information available.	
VOC Content (%):	0 g/L.	
Density:	No information available.	
Bulk Density:	No information available.	

STABILITY AND REACTIVITY

Reactivity:	No data available.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.
Conditions to Avoid:	Elevated Temperature. Incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Strong acids. Strong bases.
Hazardous Decomposition Products:	Thermal decomposition can lead to release of irritating and toxic gases and vapors.

TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:	
Inhalation:	May cause irritation.
Eye Contact:	Corrosive to the eyes and may cause severe damage including blindness.



Skin Contact:

Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion:

Can burn mouth, throat, and stomach.

Chemical Name:	Oral LD50:	Dermal LD50:	Inhalation LC50:
2,4,6-Tri(dimethylaminomethyl)phenol 90-72-2	= 1200 mg/kg (Rat)	= 1280 mg/kg (Rat)	-
Diethylenetriamine 111-40-0	= 1080 mg/kg (Rat)	= 672 mg/kg (Rabbit)	= 70 mg/L (Rat) 4 h
1,5-Pentanediamine, 2-methyl-15520-10-2	= 1690 mg/kg (Rat)		= 2.9 mg/L (Rat) 1 h = 4.1 mg/L (Rat) 1 h

Information on Toxicological Effects:

Symptoms:

May cause an allergic skin reaction. May cause skin irritation. May cause redness and tearing of the eyes. May result in permanent damage including blindness. Coughing and/or wheezing. Delayed and immediate effects as well as chronic effects from short and long-term exposure.

Sensitization:

May cause sensitization in susceptible persons.

Germ Cell Mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

This product contains titanium dioxide which is classified as a possible carcinogen when present as respirable dust. This is not relevant for this product since it is a liquid. This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product.

Chemical Name:	ACGIH:	IARC:	NTP:	OSHA:
Quartz 14808-60-7	A2	Group 1	Known	X
Silica, amorphous, precipitated and gel 112926-00-8	-	Group 3	-	-
Titanium dioxide 13463-67-7	-	Group 3	-	-

ACGIH (American Conference of Governmental Industrial Hygienists):

A2:

Suspected Human Carcinogen.

IARC (International Agency for Research on Cancer):

Group 1:

Carcinogenic to Humans.

Group 3:

Not Classifiable as to Carcinogenicity in Humans.

NTP (National Toxicology Program):

Known:

Known Carcinogen.

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X:

Present.

Reproductive Toxicity:

Based on available data, the classification criteria are not met.

STOT:

Single Exposure:

Target Organs. Respiratory system. Eyes. Skin.

Repeated Exposure:

Based on available data, the classification criteria are not



Chronic Toxicity: met.
 Target Organ Effects: May cause adverse liver effects.
 Eyes, Respiratory system, Skin, lungs, kidney, liver.
 Aspiration hazard: Based on available data, the classification criteria are not met.
 Numerical Measures of Toxicity: Product information.

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral): 1,876.00 mg/kg.
 ATEmix (dermal): 6,954.00 mg/kg.
 ATEmix (inhalation-dust/mist): 2,135.00 mg/l.

ECOLOGICAL INFORMATION

Ecotoxicity: Harmful to aquatic life with long lasting effects.

Chemical Name:	Algae/aquatic plants:	Fish:	Crustacea:
Diethylenetriamine 111-40-0	345.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 1164: 72 h Pseudokirchneriella subcapitata mg/L EC50 592: 96 h Desmodesmus subspicatus mg/L EC50	248: 96 h Poecilia reticulata mg/L LC50 static 430: 96 h Leuciscus idus mg/L LC50 semi-static 1014: 96 h Poecilia reticulata mg/L LC50 semi-static	16: 48 h Daphnia magna mg/L EC50 37: 24 h Daphnia magna mg/L EC50

Persistence and Degradability: No information available.

Bioaccumulation:

Chemical Name:	Partition Coefficient:
Diethylenetriamine 111-40-0	-1.3

Other Adverse Effects: No information available.

DISPOSAL CONSIDERATIONS

Waste Treatment Methods:
 Disposal of Wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations.
 Contaminated Packaging: Do not reuse container.

Chemical Name:	California Hazardous Waste Status:
Diethylenetriamine 111-40-0	Toxic

TRANSPORT INFORMATION

DOT: Not regulated.
 TDG: Not regulated.
 IATA: Not regulated.
 IMDG: Not regulated.



REGULATORY INFORMATION

TSCA:	Complies.
DSL/NDSL:	Complies.
EINECS/ELINCS:	Complies.
IECSC:	Complies.
KECL:	Complies.
PICCS:	Complies.
AICS:	Complies.

Legend:

TSCA:	United States Toxic Substances Control Act Section 8(b) Inventory.
DSL/NDSL:	Canadian Domestic Substances List/Non-Domestic Substances List.
EINECS/ELINCS:	European Inventory of Existing Chemical Substances/ European List of Notified Chemical Substances.
ENCS:	Japan Existing and New Chemical Substances.
IECSC:	China Inventory of Existing Chemical Substances.
KECL:	Korean Existing and Evaluated Chemical Substances.
PICCS:	Philippines Inventory of Chemicals and Chemical Substances.
AICS:	Australian Inventory of Chemical Substances.

US Federal Regulations:

SARA 313:	Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.
-----------	--

SARA 311/312 Hazard Categories:

Acute Health Hazard:	Yes.
Chronic Health Hazard:	No.
Fire Hazard:	No.
Sudden Release of Pressure Hazard:	No.
Reactive Hazard:	No.

CWA (Clean Water Act):

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA:

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations:

California Proposition 65:

This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product.



Chemical Name:	California Proposition 65:
Quartz - 14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations:

Chemical Name:	New Jersey:	Massachusetts:	Pennsylvania:
Quartz 14808-60-7	X	X	X
Silica, amorphous, precipitated and gel 112926-00-8	X	X	X
Diethylenetriamine111-40-0	X	X	X

U.S. EPA Label Information:

EPA Pesticide Registration

Number Not applicable.

OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA:

Health Hazards: 3
 Flammability: 1
 Instability: 0
 Physical and Chemical Properties: -

HMIS:

Health Hazards: 3
 Flammability: 1
 Physical Hazards: 0
 Personal Protection: X

Issue Date:

15-Mar-2016.

Revision Date:

21 June-2024.

Revision Note:

No information available.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, or provincial, and local laws.



747 RESIN SAFETY INFORMATION

IDENTIFICATION

Product Identifier:	
Product Name:	747 Resin.
Other Means of Identification:	
Product Code:	747 Part A.
Synonyms:	747 Epoxy Resin.
HMIS Ratings:	
Health:	2
Fire:	1
Reactivity:	0
CAS#:	025085-99-8
Recommended Use of the Chemical and Restrictions on Use:	
Recommended Use:	Epoxy resin system. Use per epoxy industry standards. Resin and Hardener create an adhesive used to join two or more objects together. Epoxy solution can be used as a sealant as well as adding structural integrity.

HAZARDS IDENTIFICATION

Hazard Pictograms:



GHS08
Health hazards



GHS09
Environmental

Signal Word:	Warning.
Hazard Statement(s):	
H302 + H332:	Harmful if swallowed or inhaled.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.
H317:	May cause an allergic skin reaction.
H335:	May cause respiratory irritation.
H411:	Toxic to aquatic life with long lasting effects.
Statement(s):	
P261:	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264:	Wash skin thoroughly after handling.
P270:	Do not eat, drink or smoke when using this product.
P301 + P312:	If swallowed: Call a Poison Center/doctor if you feel unwell.
P304 + P340 + P312:	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a Poison Center/doctor if you feel unwell.
P305 + P351 + P338:	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

PHYSICAL PROPERTIES

Appearance: Colorless to slight yellow.
Physical State: Liquid.
Odor: Epoxy odor.

PRECAUTIONARY STATEMENTS

Prevention: Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response:

If in Eyes: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.

If on Skin: Prolonged exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation. Has caused allergic skin reaction in humans. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

If Ingested: Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

If Inhaled: Vapors are unlikely due to physical properties.

Systemic (Other Target Organ) Effects: Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

Cancer Information: Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEbPA). Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEbPA is carcinogenic. Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEbPA is not classified as a carcinogen. DGEbPA did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

Teratology (Birth Defects): In animal studies, has been shown not to interfere with reproduction.

Reproductive Effects:

COMPOSITION/INFORMATION ON INGREDIENTS

Reaction Product of Epichlorohydrin & Bisphenol A
CAS#: 025085-99-8.
Weight(%): 70-94.
Trade secret
Weight (%): 6-30.



FIRST AID MEASURES

Eye Contact:
Skin Contact:
Inhalation:
Ingestion:

Flush eyes with plenty of water.
Wash off in flowing water or shower.
No adverse effects anticipated by this route of exposure.
No adverse effects anticipated by this route of exposure incidental to proper industrial handling.
No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

Note to Physicians:

FIRE-FIGHTING MEASURES

Flammable Properties:

Flash Point:

485°F/252°C.

Testing Method Used:

ASTM D93, PMCC.

Autoignition Temperature:

Not applicable.

Flammability Limits:

LFL:

Not applicable.

UFL:

Not applicable.

Hazardous Combustion Products:

Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to phenolics, carbon monoxide and carbon dioxide.

Other Flammability Information:

Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Suitable Extinguishing Media:

Water fog or fine spray, carbon dioxide, dry chemical, foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Water fog, applied gently maybe used as a blanket for fire extinguishment. Keep people away. Isolate fire area and deny unnecessary entry. Do not use direct water stream. May spread fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Move container from fire area if this is possible without hazard. Fight fire from protected location or safe distance. Consider use of unmanned hose holder or monitor nozzles. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological

Fire Fighting Instructions:



CARBONBOND[®]
STRUCTURAL SYSTEMS

PAGE 25 OF 36

747 RESIN SAFETY INFORMATION

Information” sections of this MSDS.

Protective Equipment and Precautions for Firefighters:

Wear positive pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, pants, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant clothing with SCBA. This will not provide sufficient fire protection. Consider fighting fire from a remote location. For protective equipment in post-fire or non-fire clean up situations, refer to the relevant sections.

ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Environmental Precautions:

Methods for Containment:

Isolate area. Clear non-emergency personnel from area. Keep out of irrigation ditches, sewers, and water supplies. Absorb with material such as sand, or polypropylene or polyethylene fiber products. Collect in suitable and properly labeled containers.

Methods for Cleaning Up:

Remove residual using hot soapy water. Residual can be removed with solvent. Solvents are not recommended for cleanup unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent MSDS for handling information.

HANDLING AND STORAGE

Precautions for Safe Handling:

Avoid use of unsupervised electric band heaters. Failures of electric band heaters have been reported to because drums of liquid epoxy resin to explode and catch fire. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire.

Storage Stability:

Storage duration: 12 Months From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

Storage Temperature:

Store at room temperature.

Handling Preparation:

Heat resin throughout to 80°F-100°F. Shake well to ensure CE and/or optical brightener is sufficiently mixed. Chemical may settle over time. Note: The warmer the resin, the lower the viscosity, the easier to work with, the faster the reaction with hardener.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Good general ventilation should be sufficient for most conditions.

Personal Protective Equipment:

Eye/Face Protection:

Use safety glasses.

Skin and Body Protection:

Use protective clothing impervious to this material. Selection of specific items such as face shield, glove, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, Wash skin with soap and water, and launder clothing before reuse. No respiratory protection should be needed.

Respiratory Protection:



CARBONBOND[®]
STRUCTURAL SYSTEMS

Exposure Guideline(s): None established.

PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid to semi-solid.
Appearance:	Colorless to slight yellow.
Odor:	Faint epoxy odor.
Vapor Pressure:	Not applicable.
Vapor Density:	Not applicable.
Boiling Point:	Not applicable.
Solubility in Water:	None.
Specific Gravity:	1.16.

STABILITY AND REACTIVITY

Chemical Stability:	Stable under recommended storage conditions.
Conditions to Avoid:	Potentially violent decomposition can occur above 350°C (662°F). Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.
Incompatible Materials:	Avoid contact with oxidizing materials, acids, and bases. Avoid unintended contact with amines.
Hazardous Decomposition Products:	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide and water.
Hazardous Polymerization:	Will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat buildup.

TOXICOLOGICAL INFORMATION

Skin Contact:	The LD50 for skin absorption in rabbits is 20,000 mg/kg.
Ingestion:	The oral LD50 for rats is >5000 mg/kg.
Mutagenicity (Effects on Genetic Material):	Animal mutagenicity studies were negative. In vitro mutagenicity studies were negative in some in some cases and positive in others.

ECOLOGICAL INFORMATION

Environmental Fate Movement & Partitioning:	Bioconcentration potential is moderate. (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is low (Koc between 500 and 2000). Measured log octanol/water partition coefficient (log Pow) is 3.7-3.9. Soil organic carbon/water partition coefficient (Koc) is estimated to be 1800-4400. Henry's Law Constant (H) is estimated to be <6.94E-09 atm-m ³ /mole. Log octanol/water partition coefficient (log Pow) is estimated, using a structural fragment method, to be 3.84.
Degradation & Persistence:	Theoretical oxygen demand (ThOD) is calculated to be 2.35 p/p. In the atmospheric environment, material is estimated to have a tropospheric half-life of 1.92 hr. Biodegradation reached in Modified Zahn-Wellens/EMPA Test (OECD Test No. 302B) after 28 days: 12%. 20-Day



Ecotoxicology:

biochemical oxygen demand (BOD20) is <2.5%. Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species). Acute LC50 for water flea *Daphnia magna* is 1.3 mg/L. Acute LC50 for fathead minnow (*Pimephales promelas*) is 3.1 mg/L. Toxicity to aquatic species occurs at concentrations greater than water solubility. Maximum acceptable toxicant concentration (MATC) in water flea *Daphnia magna* is 0.55 mg/L. Growth inhibition threshold in bacteria is > 42.6 mg C/L. Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is >100 mg/L.

DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes:

Incinerate in a licensed facility. Do not discharge substance/product into sewer system.

Container Disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste (if applicable) and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

TRANSPORT INFORMATION

Department of Transportation Classification:

Not Hazardous.

D.O.T. Proper Shipping Name:

Not Regulated.

Other Requirements:

This product contains no toxic chemicals subject to the report requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA) and of 40 CFR 372. Check with your local/federal logistic and shipping companies for proper classification of material.

REGULATORY INFORMATION

Safety, Health, and Environmental Regulations/Legislation Specific for the Substance or Mixture:

No further relevant information.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must



exercise their independent judgment in determining its appropriateness for a particular purpose. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, or provincial, and local laws.



747 HARDNER SAFETY INFORMATION

IDENTIFICATION

Product Identifier:

Product Name: 747 Hardener.

Other Means of Identification:

Product Code: 747 Part B.

Synonyms: 747 Epoxy Filler Compound Hardner.

HMIS Ratings:

Health: 3

Fire: 1

Reactivity: 0

CAS#: Trade Secret

Recommended Use of the Chemical and Restrictions on Use:

Recommended Use: Epoxy resin system. Use per epoxy industry standards. Resin and Hardener create an adhesive used to join two or more objects together. Epoxy solution can be used as a sealant as well as adding structural integrity.

HAZARDS IDENTIFICATION

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200 Classification of the Product:

Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	4 (dermal)	Acute toxicity
Skin Corr./Irrit.	1B	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Skin Sens.	1A	Skin sensitization
Aquatic Acute	3	Hazardous to the aquatic environment - acute
Aquatic Chronic	3	Hazardous to the aquatic environment - chronic

Hazard Pictograms:



GHS05
Corrosive



GHS08
Health hazards



GHS09
Environmental

Signal Word:

Danger.

Hazard Statement(s):

H302:

Harmful if swallowed.

H312:

Harmful in contact with skin.

H314:

Causes severe skin burns and eye damage.

H317:

May cause an allergic skin reaction.

H412:

Harmful to aquatic life with long lasting effects.



Precautionary Statements:

Prevention:

P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P260:	Do not breathe dust or mist.
P273:	Avoid release to the environment.
P272:	Contaminated work clothing should not be allowed out of the workplace.
P270:	Do not eat, drink, or smoke when using this product.
P264:	Wash with plenty of water and soap thoroughly after handling.

Response:

P310:	Immediately call a Poison Center or doctor/physician.
P305 + P351 + P338:	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P361 + P353:	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340:	If inhaled: Remove person to fresh air and keep comfortable for breathing.
P301 + P330 + P331:	If swallowed: Rinse mouth. Do not induce vomiting.
P361 + P364:	Take off immediately all contaminated clothing and wash it before reuse.

Storage:

P405:	Store locked up.
-------	------------------

OTHER INFORMATION

Ingredient:	WT. (%):	CAS#:
Aliphatic Amines	50-80	(Mixture is a trade secret)
Benzyl Alcohol	5-30	(Mixture is a trade secret)
Trade Secret	2-26	(Mixture is a trade secret)

FIRST AID MEASURES

Eye Contact:

Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Skin Contact:

Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation:

Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to



Ingestion: the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Notes to Physician(s): Get medical attention immediately. Wash out mouth with water. Move exposed person to fresh air. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, dry powder, foam, carbon dioxide.
Special hazards Arising from the Chemical: No hazards known.
Protective Equipment and Precautions for Firefighters: Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.
Further Information: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Exposure Controls/Personal Protection Section).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Methods for cleaning up. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.



Environmental Precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, ermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

Methods for Cleaning Up:

HANDLING AND STORAGE

Precautions for Safe Handling:

Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage Conditions:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, and food and drink. Separate from acids. 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 containers. Use appropriate containment to avoid environmental contamination.

Storage Duration:

12 months from the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

Storage Temperatures:

Store at room temperature.

Handling Preparation:

Do not heat prior to mixing with resins.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Preventive Measures:

Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls:

Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it.



For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.'

Individual protection measures, such as personal protective equipment:

Eye/Face Protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, or dusts.

Skin and Body Protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory Protection:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Clear liquid.

Odor:

Slight ammonia odor.

Odor Threshold:

N/A.

pH:

11.2.

Melting Point/Freezing Point:

N/A.

Boiling Range:

205°C.

Flash Point:

150°C.

Evaporation Rate:

1.8.

Flammability:

Product is combustible

Vapor Pressure:

.1 @25°C.

Vapor Density:

3.72.

Solubility:

1g/25ml water at 17°C.

Partition Coefficient:

N/A.

Auto-ignition Temperature:

N/A.

Decomposition Temperature:

<400°C.

Viscosity:

200cps.

STABILITY AND REACTIVITY

Reactivity:

None known, based on information available.

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

Incompatible products.

Incompatible Materials:

Acids, Strong oxidizing agents, Acid anhydrides, Acid chlorides.

Hazardous Decomposition Products:

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2).

Hazardous Polymerization:

Hazardous polymerization does not occur.

Hazardous Reactions:

None under normal processing.



TOXICOLOGICAL INFORMATION

Acute Toxicity:
Oral:

Type of value: LD50.

Species: rat.

Value: 1,030 mg/kg.

Inhalation:

No data available.

Dermal:

No data available. The European Union (EU) has classified this substance as 'harmful'.

Irritation/Corrosion:

Skin:

Species: rabbit.

Result: corrosive.

Eye:

Species: rabbit.

Result: Risk of serious damage to eyes.

Method: OECD Guideline 405.

Sensitization:

Guinea pig maximization test. No mutagenic effects reported.

Experimental/Calculated Data:

Micronucleus Assay:

No mutagenic effects reported.

Aspiration Hazard:

No aspiration hazard expected.

Species: guinea pig.

Result: sensitizing.

Method: OECD Guideline 406.

Genetic Toxicity:

Experimental/calculated data:

Ames-test.

ECOLOGICAL INFORMATION

Ecotoxicity:

Do not empty into drains.

Persistence and Degradability:

No information available.

Bioaccumulation/Accumulation:

No information available.

Mobility:

No information available.

DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes:

Incinerate in a licensed facility. Do not discharge substance/product into sewer system.

Container Disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste (if applicable) and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

TRANSPORT INFORMATION

DOT Proper Shipping Name:

Amine.

UN Number:

UN2735.

Class:

8, PKG III.



DOT Hazard Class:
SARA Title III:

Corrosive Liquid
This product contains no toxic chemicals subject to the report requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA) and of 40 CFR 372. Check with your local/federal logistic and shipping companies for proper classification of material.

REGULATORY INFORMATION

Federal Regulations:
Registration Status:
OSHA Hazard Category:

Chemical TSCA.
US released / listed.
Acute target organ effects reported; Corrosive to skin and/or eyes; Sensitizer.
Acute; Chronic.

EPCRA 311/312 (Hazard Categories):

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state, or provincial, and local laws.

