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SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Trade Name: Machinable Repair

Product No.: ML400 – Part A & Part B


Uses: **Part A** – Repairing and rebuilding parts and surfaces
Part B – (catalyst) of a two pack, epoxy repair paste; to be used only with the corresponding Part A (resin) component


Supplier’s Name: Metalink Polymer and Adhesives

Emergency Phone: 1-800-721-2448

Address: P.O. Box 209, Buna, TX 77612

SECTION 2 – HAZARD IDENTIFICATION

RESIN – PART A	
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	Skin corrosion/irritation – Category 2 Serious eye damage/eye irritation - Cat. 2B Skin sensitization – Category 1 Carcinogenicity – Category 1A
GHS LABEL ELEMENTS	
Hazard pictograms	
Signal word	Danger
Hazard statements	Causes skin and eye irritation. May cause an allergic skin reaction. May cause cancer.
PRECAUTIONARY STATEMENTS	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	If exposed or concerned: Get medical attention. If on skin: wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before re-use. If skin irritation or rash occurs: get medical attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists. Get medical attention.
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.

HARDENER – PART B	
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	Skin sensitization – Category 1 Carcinogenicity – Category 1A
GHS LABEL ELEMENTS	
Hazard pictograms	
Signal word	Danger
Hazard statements	May cause an allergic skin reaction. May cause cancer.
PRECAUTIONARY STATEMENTS	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace.
Response	If exposed or concerned: Get medical attention. If on skin: wash with plenty of soap and water. Wash contaminated clothing before re-use. If skin irritation or rash occurs: get medical attention.
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

RESIN – PART A		
Ingredient Name	CAS No.	% by Weight
Crystalline silica non-respirable	14808-60-7	10 - 30
Reaction product: Bisphenol-A-(epichlorhydrin); epoxy resin	25068-38-6	10 - 30

HARDENER – PART B		
Ingredient Name	CAS No.	% by Weight
Crystalline silica non-respirable	14808-60-7	10 - 30
4-tert-butylphenol	98-54-4	1 – 5
2,2'-iminodiethylamine	111-40-0	1 - 5

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4 – FIRST AID MEASURES

RESIN – PART A	
<i>Description of necessary first aid measures:</i>	
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing, 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 the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. 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.
Skin contact	Wash with plenty of soap and 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	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. Get medical attention.

HARDENER – PART B	
<i>Description of necessary first aid measures:</i>	
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing, 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 the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. 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.
Skin contact	Wash with plenty of soap and 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	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. Get medical attention.

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Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. 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.
Most important symptoms/effects, acute and delayed	
Potential acute health effects:	
Inhalation	No known significant effects or critical hazards.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Irritating to mouth, throat and stomach.
Over-exposure signs/symptoms	
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation and redness.
Eye contact	Adverse symptoms may include the following: pain or irritation, watering and redness.
Ingestion	No specific data.
Indication of immediate medical attention and special treatment needed, if necessary:	
Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.

See toxicological information (Section 11).

Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. 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.
Most important symptoms/effects, acute and delayed	
Potential acute health effects:	
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	May cause an allergic skin reaction.
Eye contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation and redness.
Eye contact	No specific data.
Ingestion	No specific data.
Indication of immediate medical attention and special treatment needed, if necessary:	
Notes to physician	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.
Specific treatments	No specific treatment.

SECTION 5 – FIRE FIGHTING MEASURES

RESIN – PART A and HARDENER – PART B	
Extinguishing Media:	
Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	No specific fire or explosion hazard.
<i>National Fire Protection Association (U.S.A.)</i>	
(Blue) Health	 Flammability (Red) Instability/Reactivity (Yellow) Special (White)

RESIN – PART A	
Hazardous thermal decomposition products	Decomposition products may include the following materials: Carbon dioxide, carbon monoxide, sulfur oxides, halogenated compounds and metal oxide/oxides.
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

HARDENER – PART B	
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides and metal oxide/oxides.
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

RESIN – PART A	
For non-emergency personnel	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. Provide adequate ventilation. Personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel” in this section.
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).

HARDENER – PART B	
For non-emergency personnel	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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 or suitable and unsuitable materials. See also the information in “For non-emergency personnel” in this section.
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).

Methods and materials for containment and cleaning up

RESIN – PART A	
Small spill	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

HARDENER – PART B	
Small spill	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: See Section 1 for emergency contact information and Section 13 for waste disposal.
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Large spill	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: See Section 1 for emergency contact information and Section 13 for waste disposal.
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SECTION 7 – HANDLING AND STORAGE

RESIN – PART A	
Conditions for safe storage, including any incompatibilities	Do not store above the following temperature: 35°C (95°F). 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 (see Section 10) and food and drink. Store locked up. 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.
<i>Precautions for safe handling:</i>	
Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure – obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

HARDENER – PART B	
Conditions for safe storage, including any incompatibilities	Do not store above the following temperature: 35°C (95°F). 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 (see Section 10) and food and drink. Store locked up. 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.
<i>Precautions for safe handling:</i>	
Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure – obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

RESIN – PART A		
Ingredient Name	CAS #	Exposure Limits
Crystalline silica non-respirable	14808-60-7	OSHA PEL Z3 (United States, 9/2005). Notes 250 (% SiO₂+5) TWA: 250 MPPCF / (% SiO ₂ +5) 8 hours. Form: Respirable OSHA PEL Z3 (United States, 9/2005). Notes 10 (% SiO₂+2) TWA: 10 MG/M ³ / (% SiO ₂ +2) 8 hours. Form: Respirable ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 1/2013). TWA: 0.05 mg/m ³ 10 hours. Form: Respirable dust. OSHA PEL Z3 (United States, 9/2005). Notes: 30/(SiO₂+2) TWA: 30 MG/M ³ / %SiO ₂ +2) 8 hours. Form: Total dust.

Appropriate engineering controls:

If user operation generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls:

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.

Individual protection measures**Hygiene measures:**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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.

Respiratory protection:

Use a properly fitted, particulate filter 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.

**Skin protection/
hand protection:**

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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.

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

HARDENER – PART B		
Ingredient Name	CAS #	Exposure Limits
Crystalline silica non-respirable	14808-60-7	OSHA PEL Z3 (United States, 9/2005). Notes 250 (% SiO₂+5) TWA: 250 MPPCF / (% SiO ₂ +5) 8 hours. Form: Respirable OSHA PEL Z3 (United States, 9/2005). Notes 10 (% SiO₂+2) TWA: 10 MG/M ³ / (% SiO ₂ +2) 8 hours. Form: Respirable ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 1/2013). TWA: 0.05 mg/m ³ 10 hours. Form: Respirable dust. OSHA PEL Z3 (United States, 9/2005). Notes: 30/(SiO₂+2) TWA: 30 MG/M ³ / %SiO ₂ +2) 8 hours. Form: Total dust.
2,2'-iminodiethylamine	111-40-0	ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 1 ppm 8 hours. TWA: 4.2 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1 ppm 8 hours. TWA: 4 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 1 ppm 10 hours. TWA: 4 mg/m ³ 10 hours.

Appropriate engineering controls:

If user operations general dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls:

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.

Individual protection measures

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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.

Respiratory protection:

Use a properly fitted, particulate filter 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.

Skin protection/hand protection:

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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.

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

RESIN – PART A		HARDENER – PART B	
Physical state	Solid [Viscous mass.]	Physical state	Solid [Viscous mass.]
Color	Metallic. Gray.	Color	Black.
Odor	Ethereal.	Odor	Amine-like.
Odor threshold	Not available.	Odor threshold	Not available.
pH	Not applicable.	pH	Not applicable.
Melting point	Not available.	Melting point	Not available.
Boiling point	Not available.	Boiling point	Not available.
Flash point	Closed cup: not applicable. [Product does not sustain combustion.]	Flash point	Closed cup: not applicable. [Product does not sustain combustion.]
Evaporation rate	Not applicable.	Evaporation rate	Not applicable.
Flammability (solid, gas)	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.	Flammability (solid, gas)	Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
Lower and upper explosive (flammable) limits	Not available.	Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.	Vapor pressure	Not available.
Vapor density	Not available.	Vapor density	Not available.
Relative density	2.52	Relative density	2.46
Solubility	Insoluble in the following materials: cold water and hot water.	Solubility	Insoluble in the following materials: cold water and hot water.
Solubility in water	Not available.	Solubility in water	Not available.
Auto-ignition temperature	Not available.	Auto-ignition temperature	Not available.
Decomposition temperature	> 200°C (>392°F)	Decomposition temperature	> 200°C (>392°F)
Viscosity	Not available.	Viscosity	Not available.

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SECTION 10 – STABILITY AND REACTIVITY

RESIN – PART A	
Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, Hazardous decomposition products should not be produced.

HARDENER – PART B	
Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, Hazardous decomposition products should not be produced.

SECTION 11 – TOXICOLOGICAL INFORMATION

RESIN – PART A

Information on toxicological effects

Acute toxicity: No specific data.

Irritation/Corrosion

Product/Ingredient Name	Result	Species	Score	Exposure	Observation
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Eyes – Mild irritant	Rabbit	---	100 milligrams	---
	Skin – Moderate irritant	Rabbit	---	24 hours 500 microliters	---
	Skin – Severe irritant	Rabbit	---	24 hours 2 milligrams	---

Sensitization:

No specific data.

Mutagenicity:

No specific data.

Carcinogenicity:

No specific data.

Conclusion/Summary:

IARC classified TiO₂ as a 2B carcinogen based in large part on several studies of the effects of the inhalation of TiO₂ on animals in which the TiO₂ particles were of various sizes. Particles defined as “ultrafine” have been shown to cause cancer in animals exposed to very high concentrations. A number of authorities have reviewed those studies and others involving exposure to ultrafine particles and have concluded that the effects result from overloading the respiratory system of the animals. The effects observed, according to the scientists, are not due to TiO₂ but are general responses to high levels of dust in the lungs. In addition, a carcinogenic effect of TiO₂ dust in the workers was not observed in several epidemiology studies on more than 20,000 TiO₂ industry workers in Europe and the USA, nor were other chronic diseases, including other respiratory diseases, associated with exposure to TiO₂ dust. Accordingly, we have concluded that our products should not be classified on the basis of the presence of TiO₂ in the products.

Classification

Product/Ingredient Name	OSHA	IARC	NTP
Crystalline silica non-respirable	---	1	Known to be a human carcinogen.

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Reproductive toxicity:

No specific data.

Teratogenicity:

No specific data.

Specific target organ toxicity (single exposure)

No specific data.

Specific target organ toxicity (repeated exposure)

No specific data.

Aspiration hazard

No specific data.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact: Causes serious eye irritation.
Inhalation: No known significant effects or critical hazards.
Skin contact: Causes skin irritation. May cause an allergic skin reaction.
Ingestion: Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following: pain or irritation, watering and redness.
Inhalation: No specific data.
Skin contact: Adverse symptoms may include the following: irritation and redness.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects:

General: No specific data.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates: No specific data.

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HARDENER – PART B

Information on toxicological effects

Acute Toxicity

Product/Ingredient Name	Result	Species	Dose	Exposure
2,2'-iminodiethylamine	LD50 Dermal	Rabbit	1090 mg/kg	---
	LD50 Oral	Rat	1080 mg/kg	---

Irritation/Corrosion

Product/Ingredient Name	Result	Species	Score	Exposure	Observation
4-tert-butylphenol	Eyes – Severe irritant	Rabbit	---	24 hours 5 micrograms	---
	Eyes – Severe irritant	Rabbit	---	10 milligrams	---
	Skin – Mild irritant	Rabbit	---	24 hours 500 milligrams	---
	Skin – Mild irritant	Rabbit	---	4 hours 500 milligrams	---
2,2',iminodiethylamine	Skin - Moderate irritant	Rabbit	---	500 milligrams	---

Sensitization

No specific data.

Conclusion/Summary

Skin: May cause skin sensitization.

Mutagenicity:

No specific data.

Carcinogenicity:

No specific data.

Classification

Product/Ingredient Name	OSHA	IARC	NTP
Crystalline silica non-respirable	---	1	Known to be a human carcinogen.

Reproductive toxicity:

No specific data.

Teratogenicity:

No specific data.

Specific target organ toxicity (single exposure)

No specific data.

Specific target organ toxicity (repeated exposure)

No specific data.

Aspiration hazard

No specific data.

Information on the likely routes of exposure

Not available.

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Potential acute health effects

Eye contact: No known significant effects or critical hazards.
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: May cause an allergic skin reaction.
Ingestion: No known significant effects or critical hazards

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: Adverse symptoms may include the following: irritation and redness.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects:

General: No specific data.
 Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE Value
Oral	3167.3 mg/kg
Dermal	3196.7 mg/kg

SECTION 12 – ECOLOGICAL INFORMATION

RESIN – PART A

Toxicity

No specific data.

Persistence and degradability

No specific data.

Bio-accumulative potential

Product/Ingredient Name	Log Pow	BCF	Potential
Reaction product bisphenol-A-(epichlorhydrin); epoxy resin	2.64 to 3.78	31	low

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Mobility in soil

Soil/water partition Coefficient (Koc): Not available.

Other adverse effects: No known significant effects or critical hazardous.

HARDENER – PART B

Toxicity

Product/Ingredient Name	Result	Species	Exposure
4-tert-butylphenol	Acute EC50 3900 µg/l Fresh Water	Daphnia – Daphnia magna	48 hours
	Acute LC50 5140 µg/l Fresh Water	Fish – Pimephales promelas	96 days
	Chronic NOEC 2.3 mg/l Fresh Water	Fish – Cyprinus carpio – Adult	28 days
2,2'-iminodiethylamine	Acute EC50 345600 µg/l Fresh Water	Algae – Pseudokirchneriella subcapitata	96 hours
	Acute LC50 53500 µg/l Fresh Water	Daphnia – Daphnia magna	48 hours
	Acute LC50 1014000 µg/l Fresh Water	Fish – Poecilia reticulata	96 hours

Persistence and degradability

No specific data.

Bio-accumulative potential

Product/Ingredient Name	Log Pow	BCF	Potential
4-tert butylphenol	3	44 to 48	low
2,2'-iminodiethylamine	-1.3	4.47	low

Mobility in soil

Soil/water partition Coefficient (Koc) Not available

Other adverse effects: No known significant effects or critical hazards.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification:

Not applicable

SECTION 14 – TRANSPORTATION INFORMATION

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN Number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN Proper Shipping Name	---	---	---	---	---
Transport Hazard Class(es)	---	---	---	---	---
Packing Group	---	---	---	---	---
Environmental Hazards	No	No	No	No	No
Additional Information	---	---	---	---	---

Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15 – REGULATORY INFORMATION**RESIN – PART A****U.S. Federal Regulations**

TSCA 8(a) PAIR: Siloxanes and Silicones, di-Me, reaction products with silica.

TSCA 8(a) CDR Exempt/Partial exemption: Not determined.

United States Inventory (TSCA 8b): All components are listed or exempted.

**Clean Air Act, Section 112(b)
Hazardous Air Pollutants (HAPs)**

Not listed.

**Clean Air Act Section 602
Class I Substances**

Not listed.

**Clean Air Act Section 602
Class II Substances**

Not listed.

SARA 302/304**Composition/information on ingredients:**

No products were found.

SARA 304 RQ:

Not applicable

SARA 311/312**Classification:**

Immediate (acute) health hazard.

Delayed (chronic health hazard).

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Composition/information on ingredients

Name	%	Fire Hazard	Sudden Release of Pressure	Reactive	Immediate (Acute) Health Hazard	Delayed (Chronic) Health Hazard
Crystalline silica non-respirable	10 – 30	No	No	No	No	No
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	10 – 30	No	No	No	Yes	No

State Regulations

Massachusetts: The following components are listed: Titanium dioxide; barium sulfate; silica; crystalline; and quartz.
New York: None of the components are listed.
New Jersey: The following components are listed: Ferrosilicon; ferrocerium, titanium dioxide; titanium oxide (TiO₂); barium sulfate; sulfuric acid; barium salt (1:1); silica; quartz; and quartz (SiO₂).
Pennsylvania: The following components are listed: Titanium oxide (TiO₂); barium sulfate; and quartz (SiO₂).
Minnesota Hazardous Substances: None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer:

Ingredient Name	Cancer	Reproductive	No Significant Risk Level	Maximum Acceptable Dosage Level
Crystalline silica non-respirable	Yes	No	No	No
Titanium dioxide	Yes	No	No	No

Canada Inventory: All components are listed or exempted.

International Regulations (International lists):

Australia Inventory (AICS): All components are listed or exempted.
China Inventory (IECSC): Not determined.
Japan Inventory: All components are listed or exempted.
Korea Inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
Philippines Inventory (PICCS): All components are listed or exempted.
Taiwan Inventory (CSNN): Not determined.

Substances of very high concern

None of the components are listed.

HARDENER – PART B

U.S. Federal Regulations

TSCA 8(a) PAIR: 4-tert-butylphenol; siloxanes and silicones, di-Me, reaction products with silica.
TSCA 8(a) CDR Exempt/Partial exemption: Not determined.
United States Inventory (TSCA 8b): All components are listed or exempted.

**Clean Air Act, Section 112(b)
Hazardous Air Pollutants (HAPs)**

Not listed.

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MATERIAL SAFETY DATA SHEET

Clean Air Act Section 602
Class I Substances

Not listed.

Clean Air Act Section 602
Class II Substances

Not listed.

SARA 302/304

Composition/information on ingredients:

No products were found.

SARA 304 RQ:

Not applicable

SARA 311/312

Classification:

Immediate (acute) health hazard.

Delayed (chronic health hazard).

Composition/information on ingredients

Name	%	Fire Hazard	Sudden Release of Pressure	Reactive	Immediate (Acute) Health Hazard	Delayed (Chronic) Health Hazard
Crystalline silica non-respirable	10 – 30	No	No	No	No	Yes
4-tert-butylphenol	1 – 5	No	No	No	Yes	No
2,2'-iminodiethylamine	1 – 5	No	No	No	Yes	No

State Regulations

Massachusetts:

The following components are listed: Diethylene triamine; silica, crystalline, quartz; and barium sulfate.

New York:

None of the components are listed.

New Jersey:

The following components are listed: Diethylene triamine; 1,2-ethanediamine, N-(2-aminoethyl)-; silica, quartz; quartz (SiO₂); barium sulfate; sulfuric acid, barium salt 1:1; ferrosilicon; and ferrocerium.

Pennsylvania:

The following components are listed: 1,2-ethanediamine, n-(2-aminoethyl)-; quartz (SiO₂); and barium sulfate.

Minnesota Hazardous Substances:

None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer:

Ingredient Name	Cancer	Reproductive	No Significant Risk Level	Maximum Acceptable Dosage Level
Crystalline silica non-respirable	Yes	No	No	No

Canada Inventory:

All components are listed or exempted.

International Regulations (International lists):

Australia Inventory (AICS):

All components are listed or exempted.

China Inventory (IECSC):

Not determined.

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MATERIAL SAFETY DATA SHEET

Japan Inventory:	Not determined.
Korea Inventory:	All components are listed or exempted.
Malaysia Inventory (EHS Register):	Not determined.
New Zealand Inventory of Chemicals (NZIoC):	Not determined.
Philippines Inventory (PICCS):	Not determined..
Taiwan Inventory (CSNN):	Not determined.

Substances of very high concern

None of the components are listed.

SECTION 16 – OTHER INFORMATION

Abbreviations:	ATE	Acute Toxicity Estimate
	BCF	Bio-concentration Factor
	GHS	Globally Harmonized System of Classification and Labelling of Chemicals
	IATA	International Air Transport Association
	IBC	Intermediate Bulk Container
	IMDG	International Maritime Dangerous Goods
	Log Pow	logarithm of the octanol/water partition coefficient
	MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978. (“Marpol” – marine pollution)
	UN	United Nations

The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the user. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.