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HJ3 Tack Coat Epoxy (TC-300)

Resin (TC-300A), Hardener (TC-300B)

Description

HJ3 TC-300 is a thickened epoxy used to install HJ3's carbon and glass reinforcing fabrics and laminates on vertical and over-head installations.

Suggested Uses

- Concrete, Steel, Masonry, and Wood substrates
- To assist installation of carbon and glass reinforcing fabrics and laminates on vertical and horizontal installations
- Can also be used to bond steel plates to concrete and steel substrates.
- To be installed on substrates primed with HJ3 PC-200 Series Primers

Advantages

- Low odor and low toxicity assures ease of application
- Easy 1:1 volumetric mixing ratio
- Bonds with an immediate high tack consistency
- Long pot life and quick cure time
- Solvent free and DOT non-regulated
- Trowels easily in vertical and overhead applications
- 100% solids by volume

Packaging & Shipping

HJ3 Tack Coat Resin TC-300A with TC-300B hardener is available in 1, and 5-gallon pails and 55-gallon open head drums.

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive the HJ3 Composite Reinforcing System must be given careful attention, as **the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation.** Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 3-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned and abraded to the equivalent of 60-80 mesh sandpaper. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-100 Series).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

TYPICAL DATA FOR HJ3 TC-300	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Black, White (mixes Gray)
MIXING RATIO BY VOLUME	1:1
MIXING RATIO BY WEIGHT	100:92
VISCOSITY	Thixotropic
POT LIFE	30 min @ 77° F
APPLICATION TEMPERATURE	45° F minimum, 100° F max
SOLIDS BY VOLUME	100%
"GREEN" STRENGTH DEVELOPMENT @ 77° F	2.5 hours
FULL CURE @ 77° F	24-48 hours
PHYSICAL DATA FOR HJ3 TC-300	
TENSILE LAP SHEAR	3,000 psi
PEEL STRENGTH	34-45 pli
ELONGATION @ BREAK %	15-20%
FLEXURAL MODULUS	510 Ksi

SHIPPING WEIGHTS FOR HJ3 TC-300			
HJ3 Material	1 Gallon Pail	5 Gallon Pail	55-Gallon Drum
TC-300A	9.8 lbs	50 lbs	540 lbs
TC-300B	8.5 lbs	43 lbs	468 lbs
Package Dimensions	Height: 10.5" Diameter: 8"	Height: 11" Diameter: 12"	Height: 37.5" Diameter: 23.5"

Proportion each component at their specified ratios and mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying

Apply mixed material by trowel, spatula, or putty knife to desired thickness.

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F
- Do not thin with solvent
- TC-300 does not bond well to some untreated plastics or to surfaces contaminated with petroleum products

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Tack Coat Resin (TC-300A)**

REV DATE: 10 JUN 2003
REVISION: 5

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Tack Coat Resin (TC-300A)**
CHEMICAL FAMILY: Epoxy Resin Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Products	60-100	25085-99-8	N/E
Silicates	15-25	112945-52-5	N/E
Glycidyl Ether	3-7	2461-15-6	NE
Epichlorohydrin	<1ppm	106-89-8	5ppm skin OSHA PEL
Lamp Black	1-5	1333-86-4	N/E
Petroleum Distillates	0.2-1.5	64742-47-8	N/E *

(* 300ppm – supplier recommended TWA)

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Large quantities may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical assistance.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 177°C, 350°F UEL: N/A LEL: N/A VAPOR DENSITY: N/A
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: N/A
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂, dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewers and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residue with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (50°-90°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: black paste

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: slightly sweet

SPECIFIC GRAVITY: 1.2

MELT PT: N/A

PHYSICAL STATE: liquid

pH: N.D.A.

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None $\geq 0.1\%$.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA: Not Regulated.

IMO: Not Regulated.

Section 15: U.S. REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients CAS 2461-15-6.

CERCLA: Not Listed.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 None.

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CA PROP. 65 NOTICE: WARNING: This product contains a material known to the State of California to cause cancer.
(Epichlorohydrin <1ppm)
NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Tack Coat Hardener (TC-300B)**

REV DATE: 10 JUN 2003
REVISION: 5

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Tack Coat Hardener (TC-300B)**
CHEMICAL FAMILY: Polyethylenepolyamine Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Polyethylenepolyamine mixture	25-35	029320-38-5	N/E
Tetraethylenepentamine	5-10	112-57-2	N/E
TETA / TOFA reaction products	25-35	68082-29-1	N/E
Rubber Polymer	5-10	68683-29-4	N/E
Silicon Dioxide	1-5	112945-52-5	N/E
Benzyl Alcohol	5-10	100-51-6	N/E
TIO2	0-3	13463-67-7	N/E
Petroleum Distillates	.1-1.5	64742-47-8	N/E *

(* 300 ppm supplier recommended)

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy hardener solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine handling procedures and remedy existing and potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆ USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS ◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: >138°C >280°F
NFPA FLAMMABILITY RATING: 1

UEL: N.D.A.% LEL: N.D.A.
AUTOIGNITION: N.D.A.

VAPOR DENSITY: N.D.A.

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COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons
SPECIAL HAZARDS: Firefighters should wear butyl rubber boots, gloves, and body suit with SCBA. May generate toxic and irritating combustion products. Use DOT Response Guide #153.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Stop the leak and contain the spill. Vacuum, scoop, or absorb spilled product with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (50°-90°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: amber or pigmented paste

pH: alkaline VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: faint amine odor

VAPOR DENSITY: N.D.A.

MELT PT: N/A

PHYSICAL STATE: liquid

SPECIFIC GRAVITY: 1.02

SOLUBILITY IN H₂O: slight

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None ≥0.1%

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA:

IMO:

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Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: Not Listed

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.

NFPA: HEALTH 2 FIRE 1 REACTIVITY 0 OTHER N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D Division 2B, Class D Division 2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.



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HJ3 Tack Coat Epoxy (TC-310) Resin (TC-310A), Hardener (TC-310B)

Description

HJ3 TC-310 is a thickened epoxy with a higher viscosity than HJ3's TC-300 Tack Coat. This epoxy is used to install HJ3's carbon and glass reinforcing fabrics and laminates on vertical and over-head installations.

Suggested Uses

- Concrete, Steel, Masonry, and Wood substrates
- To assist installation of carbon and glass reinforcing fabrics and laminates on vertical and horizontal installations
- Can also be used to bond steel plates to concrete and steel substrates.
- To be installed on substrates primed with HJ3 PC-200 Series Primers

Advantages

- Low odor and low toxicity assures ease of application
- 2:1 volumetric mixing ratio
- Bonds with an immediate high tack consistency to hold pre-cure plates and fabrics on vertical and over-head applications
- Long pot life and quick cure time
- Solvent free and DOT non-regulated
- Trowels easily in vertical and overhead applications
- 100% solids by volume

Packaging & Shipping

HJ3 Tack Coat Resin TC-310A with TC-310B hardener is available in 1, and 5-gallon pails and 55-gallon open head drums.

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive the HJ3 Composite Reinforcing System must be given careful attention, as **the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation**. Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 3-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned and abraded to the equivalent of 60-80 mesh sandpaper. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-100 Series).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

TYPICAL DATA FOR HJ3 TC-310	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Black, White (mixes Gray)
MIXING RATIO BY VOLUME	2:1
MIXING RATIO BY WEIGHT	100:49
VISCOSITY	Thixotropic
POT LIFE	35 min @ 77° F
GEL TIME	40 min @ 77° F
INITIAL CURE @ 77° F	3-4 hours
APPLICATION TEMPERATURE	45° F minimum, 100° F max
SOLIDS BY VOLUME	100%

SHIPPING WEIGHTS FOR HJ3 TC-310			
HJ3 Material	1 Gallon Pail	5 Gallon Pail	55-Gallon Drum
TC-310A	7.75 lbs	38.75 lbs	427 lbs
TC-310B	7.51 lbs	37.55 lbs	413 lbs
Package Dimensions	Height: 10.5" Diameter: 8"	Height: 18" Diameter: 12"	Height: 37.5" Diameter: 23.5"

Proportion each component at their specified ratios and mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying

Apply mixed material by trowel, spatula, or putty knife to desired thickness.

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F
- Do not thin with solvent
- TC-310 does not bond well to some untreated plastics or to surfaces contaminated with petroleum products

REV DATE: 1 Jan 2008
REVISION: 0

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Tack Coat Resin (TC-310A)**

Chemical Family: Epoxy Resin Mixture

MFR'S NAME: HJ3 Composite Technologies LLC, 4100 South Fremont Ave., Tucson, AZ 85714

EMERGENCY PHONE: 800/535-5053(Infotrac) GENERAL INFORMATION: 520/322-0010

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Product	>60	25085-99-8	N/E
Proprietary Ingredients	<40	Trade Secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆ USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS ◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 177°C 350°F UEL: N/A LEL: N/A VAPOR DENSITY: N/A
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: 300°C 570°F
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons.
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors or mists by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly after handling or exposure to this product.

Store in original sealed container at ambient temperatures (55°-95° F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: Provide adequate ventilation in work area. Use NIOSH respirator (organic vapor cartridges) where local ventilation is inadequate. Provide laminar flow ventilation where possible.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: pigmented paste

ODOR: slightly sweet

PHYSICAL STATE: paste

VAPOR PRESS: N.D.A.

SPECIFIC GRAVITY: .93

pH: N.D.A.

BOILING PT: >300°F

MELT PT: N/A

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA: Not Regulated

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Ingredients listed.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Not listed.

CA PROP. 65 NOTICE: None.

NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

REV DATE: 1 Jan 2008
REVISION: 0

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HJ3 Tack Coat Hardener (TC-310B)

CHEMICAL FAMILY: Polyoxypropyleneamine

MFR'S NAME: HJ3 Composite Technologies LLC, 4100 South Fremont Ave., Tucson, AZ 85714

EMERGENCY PHONE: 800/535-5053(Infotrac) GENERAL INFORMATION: 520/322-0010

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Polyoxypropylenetriamine	>55	39423-51-3	N/E
Teta, reaction products with phenol/ formaldehyde	<15	32610-77-8	N/E
Rubber Polymer	<10	68683-29-4	N/E
Proprietary Amine Blend	>15	N/A	N/E
Petroleum Distillates	<5	64742-47-8	N/E * (* 300 ppm supplier recommended)

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive epoxy hardener. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- Can cause irritation. Significant, prolonged, or repeated contact can damage the cornea.

SKIN:

- Can cause irritation. Significant, prolonged, or repeated exposure can cause severe irritation.

INGESTION:

- Can inflame or damage the G.I. tract. Ingestion can be harmful.

INHALATION:

- Can cause irritation. Significant, prolonged, or repeated exposure to mist or vapor can damage the respiratory system.

CHRONIC EFFECTS:

- Repeated exposure can cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty. Sensitization.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: >138°C >280°F UEL: N.D.A.% LEL: N.D.A. VAPOR DENSITY: N.D.A.

NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: N.D.A.

COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons

SPECIAL HAZARDS: Firefighters should wear butyl rubber boots, gloves, and body suit with SCBA. May generate toxic and irritating combustion products. Use DOT Response Guide #153.

EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.

FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: white paste

ODOR: Ammonia-like odor

PHYSICAL STATE: paste

pH: alkaline VAPOR PRESS: N.D.A.

VAPOR DENSITY: N.D.A.

SPECIFIC GRAVITY: .90

BOILING PT: N.D.A.

MELT PT: N/A

SOLUBILITY IN H₂O: moderate

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogen under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Corrosive solid, toxic, n.o.s. (Polyoxypropylenetriamine), 8 (6.1), UN 2923, PGIII.

IATA: Regulated.

IMO: Regulated.

Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: None Listed.

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.

NFPA: HEALTH 3 FIRE 1 REACTIVITY 0 OTHER N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D Division 2A, Class D Division 2B, Class E Corrosive.

WHMIS Symbols: Stylized T.

Trade Secrets: N/A.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.



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 Tucson, AZ 85714
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HJ3 Primer Coat (PC-200) Resin (PC-200A), Hardener (PC-200B)

Description

HJ3 Primer Coat is used to penetrate concrete and steel substrates to promote higher bond strength for HJ3 Composite Systems.

Suggested Uses

- Primer used to bond HJ3 reinforcing systems to concrete, masonry, steel, and wood substrates
- Aggregate filled binder
- Crack repairs

Advantages

- Resin is highly resistant to crystallization in cold temperatures
- Contains no solvents
- 0% VOC (volatile organic compounds)
- 100% solids by volume
- Minimal odor to assure low toxicity and ease of application
- Excellent wetting ability
- Provides exceptional bond to concrete surfaces
- As an aggregate filled binder, HJ3 Primer Coat PC-200 develops high compressive and flexural strength
- Complies with ACI Standard 503.1-4 and ASTM C-881-90 Type I, II, IV, V, VI and VII

Packaging & Shipping

HJ3 Primer Coat PC-200A with PC-200B and hardener is available in 1 and 5- gallon pails. HJ3 Primer Coat is also available in kits.

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive epoxy compounds must be given careful attention, as **the bonding capability of epoxy for a given application is primarily dependent on proper surface preparation.** Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Freestanding water must be removed. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 5-mil profile. Coated surfaces must be mechanically cleaned and abraded with 60-80 mesh sandpaper and approved by the manufacturer before applying the primer. A calcium chloride test is recommended on the surface to receive HJ3 wrap(s). Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap.

TYPICAL DATA FOR HJ3 PC-200	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Amber, Clear (mixes light amber)
MIXING RATIO BY VOLUME	2:1
SOLIDS CONTENT	100% by volume
VISCOSITY	Low
POT LIFE	25-30 min @ 77° F
APPLICATION TEMPERATURES	45°F minimum, 100° F max
MINIMUM RE-COAT TIME @ 77° F	3 hours
MAXIMUM RE-COAT TIME @ 77° F	24 hours
DRY TO TOUCH (TACK FREE) @ 77°F	6-8 hours
LIGHT TRAFFIC @ 77°F	14-16 hours
FULL CURE @ 77°F	7 days

PHYSICAL PROPERTIES OF CURED HJ3 PC-200 SYSTEM (Cured 7 days @ 77° F)	
COMPRESSIVE STRENGTH (ASTM D695)	10,000 - 11,000 psi
FLEXURAL STRENGTH (ASTM D790)	13,000 – 13,800 psi
TENSILE STRENGTH (ASTM D638)	7,000 – 8,000 psi
ELONGATION @ BREAK %	5.0
TENSILE MODULUS	340 Ksi
HDT (F) (ASTM D648-264)	122
BOND STRENGTH TO CONCRETE	400 psi, with 100% concrete failure
FLEXURAL MODULUS	419 Ksi
WATER ABSORPTION (% gain) 24 HRS	< 1
SHORE D HARDNESS	82

Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-200).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

SHIPPING WEIGHTS FOR HJ3 PC-200		
HJ3 Material	1 Gallon Pail	5 Gallon Pail
PC-200A	9.3 lbs	47 lbs
PC-200B	8.7 lbs	45 lbs
Package Dimensions	Height: 10.5" Diameter: 8"	Height: 11" Diameter: 12"

Proportion each component at their specified ratios and mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying Primer

Prime the surfaces with PC-200 using a roller, brush or squeegee. Sufficient quantities of primer should be applied to fully penetrate the concrete or masonry surface. Normally applied at a rate of 175-200 sq ft per gallon. Application of other HJ3 epoxy systems can proceed while primer is still wet. Allow primer to become tacky before applying other HJ3 epoxies.

Mortars and Grouts

Mix PC-200 parts "A" and "B" thoroughly first, then add 3-7 parts suitable aggregate (such as B-23 washed river rock and kiln dried Monterey sand) and mix until the aggregate is completely wetted and uniform. Apply by trowel to desired thickness. Chemical resistance and appearance is enhanced, by applying a final coat of PC-200 over the cured mortar, prior to top application. Note that product working life is extended when mixed with aggregate, dependent on batch size and temperature.

Slurries

Mix PC-200 parts "A" and "B" thoroughly first, then add 1 part by volume suitable slurry filler (such as "marble-white") and mix until uniform. Apply the slurry by squeegee.

Crack Repairs

HJ3 PC-200 is suitable for repairing of cracks in concrete slabs. It may be poured or injected.

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F

COVERAGE FOR HJ3 PC-200		
Item	Nominal Thickness	Average Coverage
Priming	8-9 mils	175-200 sq ft/gal
1:1 Slurry	32 mils	50 sq ft/gal
¼" thick sand aggregate trowel	250 mils	6.4 sq ft/gal
½" thick sand aggregate trowel	500 mils	3.2 sq ft/gal

CHEMICAL RESISTANCE GUIDE FOR HJ3 PC-200 (Splash and spillage)		
REAGENT	RATING/COMMENT	LEGEND
Xylene	E	E=Excellent
Toluene	E	G=Good
1,1,1 Trichloroethane	E	F=Fair
MEK	G	
EB (Ethylene Glycol Monobutyl Ether)	F	
Ethyl Alcohol	F	
Methyl Alcohol	G	
Water (de-ionized)	E	
5% Detergent Solution	E	
10% Sodium Hydroxide	E	
50% Sodium Hydroxide	E	
10% Sulfuric Acid	E	
70% Sulfuric Acid	G	
10% Hydrochloric Acid	E	
5% Acetic Acid	G	
10% Acetic Acid	F	
Skydrol	F	
Synthetic Gasohol	E	

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Primer Coat Resin (PC-200A)**

REV DATE: 1 JAN 2002
REVISION: 4

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Primer Coat Resin (PC-200A)**
CHEMICAL FAMILY: Epoxy Resin Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Product	>80	25085-99-8	N/E
Glycidyl Ether	>10	68609-97-2	N/E
Proprietary ingredients	<10	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Large quantities may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 100°C 212°F UEL: NDA LEL: NDA VAPOR DENSITY: NDA
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: 300°C 570°F
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons.
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors or mists by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: straw yellow

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: slightly sweet

SPECIFIC GRAVITY: 1.11

MELT PT: N/A

PHYSICAL STATE: liquid

pH: N.D.A.

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA:

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Ingredients listed.

SARA III: Sec 311 & 312 Immediate Health Hazard; Sec 313 None.

CA PROP. 65 NOTICE: Not listed.

NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

Section 16: CANADIAN REGULATORY INFORMATION

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

REV DATE: 1 JAN 2002
REVISION: 4

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Primer Coat Hardener (PC-200B)**
CHEMICAL FAMILY: Polyetherdiamines
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Nonylphenol	<45	84852153	N/E
Polyoxypropylenediamine	<45	9046-10-0	N/E
Proprietary ingredients	>10	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive epoxy hardener. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- Can cause irritation. Significant, prolonged, or repeated contact can damage the cornea.

SKIN:

- Can cause irritation. Significant, prolonged, or repeated exposure can cause severe irritation.

INGESTION:

- Can inflame or damage the G.I. tract. Ingestion can be harmful.

INHALATION:

- Can cause irritation. Significant, prolonged, or repeated exposure to mist or vapor can damage the respiratory system.

CHRONIC EFFECTS:

- Repeated exposure can cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 205°C 400°F UEL: N.D.A.% LEL: N.D.A. VAPOR DENSITY: N.D.A.
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: N.D.A.
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons
SPECIAL HAZARDS: Pre-sensitization to epoxy anaphylactic reaction. Toxic and irritating combustion products. Use DOT Response Guide #153.
EXTINGUISHING MEDIA: Use foam, CO₂, dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA. DOT RGN 153.

Section 6: ACCIDENTAL RELEASE MEASURES

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: clear liquid

pH: alkaline VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: faint amine odor

VAPOR DENSITY: N.D.A.

MELT PT: N/A

PHYSICAL STATE: liquid

SPECIFIC GRAVITY: 1.01

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Amines, Liquid, Corrosive n.o.s. (Nonylphenol), 8, UN 2735, PGIII.

IATA: Regulated.

IMO: Regulated.

Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Corrosive", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: Not listed.

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.

NFPA: HEALTH 3 FIRE 1 REACTIVITY 0 OTHER N/A

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Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D Division 2A, Class D Division 2B, Class E Corrosive.

WHMIS Symbols: Stylized T.

Trade Secrets: N/A.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.



HJ3 Composite Technologies, LLC
 4100 S. Fremont Ave.
 Tucson, AZ 85714
 Phone: (520) 322-0010
 (877) 303-0HJ3
 Fax: (520) 322-0453
 Web: www.HJ3.com
 E-mail: info@HJ3.com

HJ3 Putty Mix (PM-100) Resin (PM-100A), Hardener (PM-100B)

Description

HJ3 Putty Mix is a 100% solids two-part epoxy system for filling voids, dimples, cracks, and bug-holes in concrete, masonry, and steel substrates

Suggested Uses

- Filling large cracks and displacements
- Filling voids and dimples on pipe
- Resurfacing concrete, masonry, and steel substrates

Advantages

- Good adhesion and quick curing
- 100% solids by volume
- 0% VOC (volatile organic compounds)
- Good chemical resistance
- Minimal odor to assure ease of application
- Trowels easily on vertical and overhead surfaces
- Easy to use 2:1 volumetric ratio

Packaging

HJ3 Putty Mix PM-100A and PM-100B are available in 1 and 5- gallon pails

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive the HJ3 Composite Reinforcing System must be given careful attention, as **the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation.** Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 3-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned and abraded to the equivalent of 60-80 mesh sandpaper. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-100 Series).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

Proportion each component at their specified ratios and mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying

Apply mixed material by trowel, spatula, or putty knife to desired thickness.

TYPICAL DATA FOR HJ3 PM-100	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Black, White (mixes gray)
MIXING RATIO BY VOLUME	2:1
MIXING RATIO BY WEIGHT	100:42
VISCOSITY	Thixotropic
POT LIFE	25-30 min @ 77° F
APPLICATION TEMPERATURE	55° F minimum, 100° F max
SOLIDS BY VOLUME	100%
FULL CURE @ 77°F	7 days

SHIPPING WEIGHTS FOR HJ3 PM-100		
HJ3 Material	1 Gallon Pail	5 Gallon Pail
PM-100A	9.3 lbs	47 lbs
PM-100B	8.7 lbs	45 lbs
Package Dimensions	Height: 10.5" Diameter: 8"	Height: 11" Diameter: 12"

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F
- Do not thin with solvent

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Putty Mix Resin (PM-100A)**

REV DATE: 1 JAN 2002
REVISION: 1

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Putty Mix Resin (PM-100A)**
CHEMICAL FAMILY: Epoxy Resin Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Product	<60	25085-99-8	N/E
Glycidyl Ether	<20	2210-79-9	N/E
Proprietary ingredients	>20	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Large quantities may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 177°C 350°F UEL: N/A LEL: N/A VAPOR DENSITY: N/A
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: 300°C 570°F
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons.
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors or mists by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Wear chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: black paste

ODOR: slightly sweet

PHYSICAL STATE: liquid

VAPOR PRESS: N.D.A.

SPECIFIC GRAVITY: 1.1-1.32

pH: N.D.A.

BOILING PT: N.D.A.

MELT PT: N/A

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA:

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Ingredients listed.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 None.

CA PROP. 65 NOTICE: Not listed.

NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

Section 16: CANADIAN REGULATORY INFORMATION

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Putty Mix Hardener (PM-100B)**

REV DATE: 1 JAN 2002
REVISION: 1

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Putty Mix Hardener (PM-100B)**
CHEMICAL FAMILY: Polyamines
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Tetraethylenepentamine reaction products	<50	32610-77-8	N/E
Benzyl alcohol	<20	100-51-6	N/E
Proprietary ingredients	>30	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy hardener solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine handling procedures and remedy existing and potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause severe irritation.

SKIN:

- May cause irritation.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 205°C 400°F UEL: N.D.A. LEL: N.D.A. VAPOR DENSITY: N.D.A.
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: N.D.A.
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons
SPECIAL HAZARDS: Firefighters should wear butyl rubber boots, gloves, and body suit with SCBA. May generate toxic and irritating combustion products. Use DOT Response Guide #153.
EXTINGUISHING MEDIA: Use foam, CO₂, dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

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Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65° – 80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Wear chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: pigmented syrup
pH: alkaline VAPOR PRESS: N.D.A.
BOILING PT: N.D.A.

ODOR: faint amine odor
VAPOR DENSITY: N.D.A.
MELT PT: N/A

PHYSICAL STATE: liquid
SPECIFIC GRAVITY: 1.15
SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated

IATA:

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: Not listed.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.
NFPA: HEALTH 2 FIRE 1 REACTIVITY 0 OTHER N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

Trade Secrets: N/A.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.



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 E-mail: info@HJ3.com

HJ3 Saturating Epoxy Summer (SRS-400)

Resin (SRS-400A), Hardener (SRS-400B)

Description

Two-part, 100% solids, rigid epoxy resin used to saturate and bond HJ3 Carbon and Glass Fabrics

Suggested Uses

- For use as an impregnating resin with HJ3 Carbon and Glass Reinforcing Fabrics
- Summer Version of SR-400 Saturating Resins

Advantages

- 100% solids
- Highly resistant to crystallization in cold environments
- DOT non-regulated
- 0% VOC (volatile organic compounds)
- Fast wetting of reinforcement materials

Packaging & Shipping

HJ3 Saturating epoxy resin SRS-400A with SRS-400B hardener is available in 1, and 5-gallon pails and 55-gallon open head drums.

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive the HJ3 Composite Reinforcing System must be given careful attention, as **the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation.** Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 3-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned and abraded to the equivalent of 60-80 mesh sandpaper. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-100 Series).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

Proportion each component at their specified ratios and

TYPICAL DATA FOR HJ3 SRS-400	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Clear, Amber (mixes light amber)
MIXING RATIO BY VOLUME	2:1
MIXING RATIO BY WEIGHT	100:43
VISCOSITY	Medium, Thixotropic
POT LIFE	90 minutes @ 77°F
APPLICATION TEMPERATURE	75° F minimum, 120° F max
SOLIDS BY VOLUME	100%
Tg	195°F
EEW	190-196
HDT	175°F
“GREEN” STRENGTH DEVELOPMENT @ 77°F	8 hours
FULL CURE @ 77°F	7 days
PHYSICAL PROPERTIES OF HJ3 SRS-400	
TENSILE STRENGTH	9-10 Ksi
TENSILE MODULUS	451.7 Ksi
ELONGATION @ BREAK %	4.52 %
FLEXURAL STRENGTH	17.12 Ksi
FLEXURAL MODULUS	419.1 Ksi

SHIPPING WEIGHTS FOR HJ3 SRW-400			
HJ3 Material	1 Gallon Pail	5 Gallon Pail	55-Gallon Drum
SRW-400A	9.4 lbs	47 lbs	517 lbs
SRW-400B	8.3 lbs	42 lbs	457 lbs
Package Dimensions	Height: 10.5” Diameter: 8”	Height: 11” Diameter: 12”	Height: 37.5” Diameter: 23.5”

mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying

Apply mixed material by roller or brush to specified thickness.

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F
- Do not thin with solvent
- SRW-400 does not bond well to some untreated plastics or to surfaces contaminated with petroleum products

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Saturating Resin (SRS-400A)**

REV DATE: 1 JAN 2002
REVISION: 4

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Saturating Resin (SRS-400A)**
Chemical Family: Epoxy Resin Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Product	<85	25085-99-8	N/E
2-Ethyl Hexyl Glycidyl Ether	>10	2461-15-6	N/E
Proprietary ingredients	>10	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 177°C 350°F UEL: N/A LEL: N/A VAPOR DENSITY: N/A
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: 300°C 570°F
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons.
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors or mists by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Wear chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: milky white

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: slightly sweet

SPECIFIC GRAVITY: 1.13

MELT PT: N/A

PHYSICAL STATE: liquid

pH: N.D.A.

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA: Not Regulated.

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Ingredients listed.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Not listed.

CA PROP. 65 NOTICE: Not listed.

NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Saturating Hardener (SRS-400B)**

REV DATE: 1 JAN 2002
REVISION: 2

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HJ3 Saturating Hardener (SRS-400B)**
CHEMICAL FAMILY: Polyamide
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Polyamides	>75	Mixture	N/E
Benzyl Alcohol	<15	100-51-6	N/E
Proprietary ingredients	>10	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy hardener mixture. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine handling procedures and remedy existing and potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 205°C 400°F UEL: N.D.A. LEL: N.D.A. VAPOR DENSITY: N.D.A.
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: N.D.A.
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons
SPECIAL HAZARDS: Firefighters should wear butyl rubber boots, gloves, and body suit with SCBA. May generate toxic and irritating combustion products. Use DOT Response Guide #153.
EXTINGUISHING MEDIA: Use foam, CO₂, dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: amber

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: faint amine

SPECIFIC GRAVITY: 1.03

MELT PT: N/A

PHYSICAL STATE: liquid

pH: alkaline

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated

IATA: Not Regulated.

IMO: Not Regulated.

Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: Not listed.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.
NFPA: HEALTH 2 FIRE 1 REACTIVITY 0 OTHER N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

Trade Secrets: N/A.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.



HJ3 Composite Technologies, LLC
 4100 S. Fremont Ave.
 Tucson, AZ 85714
 Phone: (520) 322-0010
 (877) 303-0HJ3
 Fax: (520) 322-0453
 Web: www.HJ3.com
 E-mail: info@HJ3.com

HJ3 Saturating Epoxy Winter (SRW-400)

Resin (SRW-400A), Hardener (SRW-400B)

Description

Two-part, 100% solids, rigid epoxy resin used to saturate and bond HJ3 Carbon and Glass Fabrics.

Suggested Uses

- For use as an impregnating resin with HJ3 Carbon and Glass Reinforcing Fabrics
- Winter Version of SR-400 Saturating Resins

Advantages

- 100% solids
- Highly resistant to crystallization in cold environments
- DOT non-regulated
- 0% VOC (volatile organic compounds)
- Fast wetting of reinforcement materials

Packaging & Shipping

HJ3 Saturating epoxy resin SRW-400A with SRW-400B hardener is available in 1, and 5-gallon pails and 55-gallon open head drums.

*Shipped FOB Tucson, AZ or through authorized distributors.

Surface Preparation

The preparation of surfaces to receive the HJ3 Composite Reinforcing System must be given careful attention, as **the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation.** Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 3-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned and abraded to the equivalent of 60-80 mesh sandpaper. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with HJ3 putty mix (PM-100 Series).

Mixing Epoxy

Thorough and complete mixing is critical. **WARNING: Epoxies develop heat during mixing and curing.** To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less.

Proportion each component at their specified ratios and

TYPICAL DATA FOR HJ3 SRW-400	
SHELF LIFE	2 years in original unopened container
STORAGE CONDITIONS	50° F minimum, 100° F max
COLOR	Clear, Amber (mixes light amber)
MIXING RATIO BY VOLUME	2:1
MIXING RATIO BY WEIGHT	100:43
VISCOSITY	Medium
POT LIFE	30 minutes @ 77 °F
APPLICATION TEMPERATURE	40° F minimum, 85° F max
SOLIDS BY VOLUME	100%
Tg	185°F
EEW	190-196
HDT	175°F
“GREEN” STRENGTH DEVELOPMENT @ 77 °F	8 hours
FULL CURE @ 77 °F	7 days
PHYSICAL PROPERTIES OF HJ3 SRW-400	
TENSILE STRENGTH	9-10 Ksi
TENSILE MODULUS	451.7 Ksi
ELONGATION @ BREAK %	4.52 %
FLEXURAL STRENGTH	17.12 Ksi
FLEXURAL MODULUS	419.1 Ksi

SHIPPING WEIGHTS FOR HJ3 SRW-400			
HJ3 Material	1 Gallon Pail	5 Gallon Pail	55-Gallon Drum
SRW-400A	9.4 lbs	47 lbs	517 lbs
SRW-400B	8.3 lbs	42 lbs	457 lbs
Package Dimensions	Height: 10.5” Diameter: 8”	Height: 11” Diameter: 12”	Height: 37.5” Diameter: 23.5”

mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. **Mix no more material than may be applied within the specified pot life of the epoxy (Please reference the technical data sheet for the specific HJ3 resin).**

Applying

Apply mixed material by roller or brush to specified thickness.

Conditions to Avoid

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F
- Do not thin with solvent
- SRW-400 does not bond well to some untreated plastics or to surfaces contaminated with petroleum products

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Saturating Resin (SRW-400A)**

REV DATE: 1 JAN 2008
REVISION: 5

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HJ3 Saturating Resin (SRW-400A)
Chemical Family: Epoxy Resin Mixture
MFR'S NAME: HJ3 Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714
EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ3)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Bisphenol A Reaction Product	<85	25085-99-8	N/E
2-Ethyl Hexyl Glycidyl Ether	>10	2461-15-6	N/E
Proprietary ingredients	>10	Trade secret	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy resin solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine the handling procedures and remedy any existing or potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause irritation.

SKIN:

- May cause irritation. Low dermal absorption hazard.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 177°C 350°F UEL: N/A LEL: N/A VAPOR DENSITY: N/A
NFPA FLAMMABILITY RATING: 1 AUTOIGNITION: 300°C 570°F
COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons.
SPECIAL HAZARDS: Pre-sensitization to epoxy.
EXTINGUISHING MEDIA: Use foam, CO₂ dry chemical, water fog.
FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

Section 6: ACCIDENTAL RELEASE MEASURES

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors or mists by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65°-80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal Exposure Limits (PEL), Threshold Limit Values (TLV) or other exposure limits, see Sec. 2.

GENERAL: Provide ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Butyl or nitrile rubber chemical gloves. Wear chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: milky white

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: slightly sweet

SPECIFIC GRAVITY: 1.13

MELT PT: N/A

PHYSICAL STATE: liquid

pH: N.D.A.

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong acids, caustics, oxidizers, and epoxy hardeners in an uncontrolled condition.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated.

IATA: Not Regulated.

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 29 CFR 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Ingredients listed.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Not listed.

CA PROP. 65 NOTICE: Not listed.

NFPA: Health 1 Fire 1 Reactivity 0 Other N/A

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

WHMIS Trade Secret Registry Numbers: None.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

**MATERIAL DATA SAFETY SHEET (MSDS)
for HJ3 Saturating Hardener (SRW-400B)**

REV DATE: 1 JAN 2008

REVISION: 5

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HJ₃ Saturating Hardener (SRW-400B)

CHEMICAL FAMILY: Polyamines

MFR'S NAME: HJ₃ Composite Technologies, LLC, 4100 S. Fremont Ave., Tucson, AZ 85714

EMERGENCY PHONE: 800/535-5053 (Infotrac) GENERAL INFORMATION: 877/303-0453 (HJ₃)

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	%	CAS #	EXPOSURE LIMITS
Tetraethylenepentamine reaction products	<60	32610-77-8	N/E
Benzyl alcohol	<10	100-51-6	N/E
Polyamide unsaturated fatty acid dimers	>30	68082-29-1	N/E

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Epoxy hardener solution. Certain individuals may have pre-existing skin or respiratory conditions causing a sensitivity or allergy which manifests as various reactions. Heating or spraying this product or the mixed parts increases potential health hazards. Health and Safety personnel should examine handling procedures and remedy existing and potential health and safety hazards.

POTENTIAL HEALTH EFFECTS:

EYE:

- May cause severe irritation.

SKIN:

- May cause irritation.

INGESTION:

- May inflame or damage the G.I. tract. Ingestion may be harmful.

INHALATION:

- May cause irritation.

CHRONIC EFFECTS:

- Repeated exposure may cause irritation and sensitization.

SIGNS & SYMPTOMS:

- Skin rash, irritation, reddening, or eczema; Breathing irritation or difficulty.

Section 4: FIRST AID MEASURES

◆USE APPROPRIATE BLOOD-BORNE PATHOGENS PROTECTIONS◆

EYE:

- Hold eyelids apart and flood with copious amounts of water. Seek medical attention.

SKIN:

- Remove excess product. Wash thoroughly with soap and water. If irritation persists, seek medical attention.

INGESTION:

- Do not induce vomiting unless directed by medical personnel. Seek medical attention.

INHALATION:

- Remove to fresh air. Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: 205°C 400°F

UEL: N.D.A.

LEL: N.D.A.

VAPOR DENSITY: N.D.A.

NFPA FLAMMABILITY RATING: 1

AUTOIGNITION: N.D.A.

COMBUSTION PRODUCTS: CO, CO₂, NO_x, & misc. hydrocarbons

SPECIAL HAZARDS: Firefighters should wear butyl rubber boots, gloves, and body suit with SCBA. May generate toxic and irritating combustion products. Use DOT Response Guide #153.

EXTINGUISHING MEDIA: Use foam, CO₂, dry chemical, water fog.

FIRE FIGHTER INSTRUCTIONS: Stay upwind. Wear at least full bunker gear and SCBA.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

Section 6: ACCIDENTAL RELEASE MEASURES

Isolate spill area. Keep out of sewer and storm drains. Stop the leak and contain the spill. Vacuum, scoop, or absorb spill with non-combustible materials. Clean up spill residues with soap and water.

Section 7: HANDLING AND STORAGE

Avoid skin and eye contact and breathing vapors by appropriate measures. Do not eat or smoke while handling this product. Wash thoroughly with soap and water after handling or exposure to this product.

Store in original sealed container at ambient temperatures (65° – 80°F) in dry, well-ventilated areas.

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

For Personal exposure Limits (PEL), Threshold Limit Values (TLV), or other exposure limits, see Sec.2.

GENERAL: Provide adequate ventilation that will keep airborne concentration at a minimum.

EYE/FACE: Safety glasses or splash goggles with face shield.

SKIN: Chemical resistant gloves. Don chemical resistant clothing where exposure may occur.

RESPIRATORY: NIOSH approved respirator with organic vapor/HEPA filter cartridges.

OTHER: Decontaminate or discard clothing and materials that have come in contact with this product.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: amber

VAPOR PRESS: N.D.A.

BOILING PT: N.D.A.

ODOR: faint amine odor

SPECIFIC GRAVITY: 1.0

MELT PT: N/A

PHYSICAL STATE: liquid

pH: alkaline

SOLUBILITY IN H₂O: slightly

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY: Strong oxidizers, acids, epoxy resins in uncontrolled conditions; contact with other unpolymerized monomers or polymers.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known, other than Sec. 5's Combustion Products.

Section 11: TOXICOLOGICAL INFORMATION

Oral: N.D.A.

Dermal: N.D.A.

Inhalation: N.D.A.

Carcinogens under OSHA, ACGIH, NTP, IARC, or Other: None \geq 0.1%.

Section 12: ECOLOGICAL INFORMATION

N.D.A.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable federal, state, and local laws and regulations.

Section 14: TRANSPORT INFORMATION

DOT: Not Regulated

IATA:

IMO:

Section 15: REGULATORY INFORMATION

OSHA: 1910.1200 Hazardous Chemical "Irritant", "Sensitizer".

TSCA: Contains listed ingredients.

SARA III: Sec311 & 312 Immediate Health Hazard; Sec313 Chemicals above de minimus level: None.

CA PROP. 65 NOTICE: Not listed.

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.

VOLATILE ORGANIC COMPOUND (VOC) %: Zero.
NFPA: HEALTH 2 FIRE 1 REACTIVITY 0 OTHER N/A

Section 16: CANADIAN REGULATORY INFORMATION

WHMIS: Hazard Classification: Class D2B Skin Sensitizer. Refer to MSDS for specific warnings.

WHMIS Symbols: Stylized T.

Trade Secrets: N/A.

Hazardous Products Act Information: This product MSDS contains ingredients which are Controlled and/or on the Ingredient Disclosure List (HPA sections 13 and 14).

ABBREVIATIONS: N/A = not applicable; N.D.A. = no data available; NE = not established

END OF MSDS

ATTENTION: No representation is made as to the accuracy or correctness of the information contained herein, other than to state that it is presented by this organization in good faith and we believe it to be correct and accurate per the limits of our understanding and training as of the date of first publication. The user or handler of this product is warned to take the most conservative and safest interpretation possible of all information contained herein and to use the most extreme personal protection measures and exposure limitations prudently dictated by the specific usage or handling situation, this MSDS information and good industrial safety and hygiene practices.