

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:..... WEST SYSTEM® 105 Epoxy Resin
APPLICABLE PRODUCT CODES: 105, 105-A, 105-B, 105-C, 105-E, C 105-A, C 105-B, C 105-C, C 105-E
CHEMICAL FAMILY:..... Epoxy resin mixture.
INTENDED PRODUCT USES:..... Resin for coatings or adhesives.
PRODUCT USE RESTRICTIONS: None identified.
SDS VERSION: 105-2022a

MANUFACTURER:
Gougeon Brothers, Inc.
100 Patterson Ave.
Bay City, MI 48706, U.S.A.
Phone: 866-937-8797 or 989-684-7286
www.westsystem.com

EMERGENCY TELEPHONE NUMBERS (24 HRS):
Transportation
CHEMTREC: 800-424-9300 (U.S.)
703-527-3887 (International)
Non-transportation
Poison Hotline: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification of Substance or Mixture

Skin corrosion/irritation, Category 2
Skin sensitizer, Category 1
Eye damage/irritation, Category 2A
Chronic aquatic toxicity, Category 2

Label Elements

Hazard Pictogram(s):



Signal Word

WARNING

Hazard Statements

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P 280 Wear protective gloves/protective clothing/eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical attention/advice.
P337 + P313 If eye irritation persists: Get medical attention/advice.
P362 + P364 Take off contaminated clothing and wash it before re-use.
P391 Collect spillage.

Disposal

P501 Dispose of contents/container in accordance with local, regional and international regulations.

Other Hazards Not Resulting In Classification

None known.

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	60-80
Benzyl alcohol	100-51-6	10-30

Phenol-formaldehyde polymer glycidyl ether	28064-14-4	5-10
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The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

4. FIRST AID MEASURES

FIRST AID FOR EYES:..... SYMPTOMS: Causes serious irritation and redness. RESPONSE: Flush immediately with water for at least 15 minutes. Remove contact lenses if present and easy to do. Consult a physician as precautionary measure.

FIRST AID FOR SKIN:..... SYMPTOMS: Causes skin irritation. May cause allergic skin reaction and sensitization. RESPONSE: Remove contaminated clothing. Wipe excess from skin. Apply waterless skin cleaner and then wash with soap and water. Consult a physician if effects occur.

FIRST AID FOR INHALATION:..... SYMPTOMS: Not a likely route of exposure under normal conditions of use. RESPONSE: Remove to fresh air if respiratory irritation occurs and keep comfortable for breathing.

FIRST AID FOR INGESTION:..... SYMPTOMS: No acute adverse health effects expected from amounts ingested under normal conditions of use. RESPONSE: Seek medical attention if a significant amount is ingested.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: SUITABLE: Foam, carbon dioxide (CO₂), dry chemical. NON-SUITABLE: Direct water stream.

FIRE AND EXPLOSION HAZARDS: During a fire, smoke may contain the original materials in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include, but are not limited to: phenolics, carbon monoxide, and carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: Wear a self-contained breathing apparatus and complete full-body personal protective equipment. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Keep unnecessary and unprotected personnel from entering area. Use appropriate safety and personal protective equipment as indicated in Section 8.

MITIGATION AND CLEAN UP PROCEDURES: Stop leak without additional risk. Isolate area. Dike and absorb with inert material (e.g., sand) and collect in a suitable, closed container. Warm, soapy water or non-flammable, safe solvent may be used to clean residual.

ENVIRONMENTAL PRECAUTIONS:..... Prevent from entering into soil, ditches, sewers, waterways and groundwater. See Section 12 for environmental impact information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (min./max.): 40°F (4°C) / 120°F (49°C)

STORAGE:..... Store in cool, dry place. Store in tightly sealed containers to prevent moisture absorption and loss of volatiles. Excessive heat over long periods of time will degrade the resin.

HANDLING PRECAUTIONS: Avoid all skin and eye contact. Wash thoroughly after handling. Launder contaminated clothing before reuse. Avoid inhalation of vapors from heated product. Precautionary steps should be taken when curing product in large quantities. When mixed with epoxy curing agents this product causes an exothermic, which in large masses, can produce enough heat to damage or ignite surrounding materials and emit fumes and vapors that vary widely in composition and toxicity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate general ventilation and/or local ventilation to keep exposures below established limits.

EYE PROTECTION GUIDELINES: Safety glasses with side shields or chemical splash goggles.

SKIN PROTECTION GUIDELINES:..... Wear liquid-proof, chemical resistant gloves (nitrile-butyl rubber, neoprene, butyl rubber or natural rubber) and full body-covering clothing.

RESPIRATORY PROTECTION GUIDELINES: When ventilation cannot be made adequate enough to keep exposures below established limits, use a NIOSH approved respirator with an organic vapor cartridge, or organic vapor cartridge + P100 particulate filter, depending on specific workplace conditions. Consult with your respirator and cartridge supplier to ensure proper selection of respirator and cartridge based on ingredients listed in Section 3 and specific workplace conditions. Use and select a respirator according to the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.

ADDITIONAL PROTECTIVE MEASURES:..... Practice good caution and personal cleanliness to avoid skin and eye contact. Avoid skin contact when removing gloves and other protective equipment. Wash thoroughly after handling. Generally speaking, working cleanly and following basic precautionary measures will greatly minimize the potential for harmful exposure to this product under normal use conditions.

OCCUPATIONAL EXPOSURE LIMITS: Exposure limits may not be established for this product as a whole. For established exposure limits of specific ingredients in this product, or other available exposure limit information, refer to the table below.

Ingredient Name	CAS#	Exposure Limit Information
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	No data available
Benzyl alcohol	100-51-6	10 ppm (AIHA-WEEL)
Phenol-formaldehyde polymer glycidyl ether	28064-14-4	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Viscous liquid.
COLOR: Colorless.
ODOR: Mild.
ODOR THRESHOLD: No data available
pH: No data available
MELTING POINT / FREEZING POINT No data available
BOILING POINT (760mm/Hg): > 400°F (204°C).
FLASH POINT: >200°F (93°C). Estimated based on ingredient data.
FLAMMABILITY (solids or gasses)..... No data available
AUTO IGNITION TEMPERATURE..... No data available
LOWER EXPLOSIVE LIMIT (LEL)..... No data available
UPPER EXPLOSIVE LIMIT (UEL) No data available
VAPOR PRESSURE..... No data available
SPECIFIC GRAVITY/DENSITY (water = 1)..... 1.15
BULK DENSITY..... 9.6 lb./gal. (1.15 kg/L)
VAPOR DENSITY (air = 1) Heavier than air. Estimated based on ingredient data.
EVAPORATION RATE (Butyl Acetate = 1)..... No data available
WATER SOLUBILITY (% BY WT.) No data available
PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow)..... No data available
KINEMATIC VISCOSITY: 869.5 mm²/s @ 20°C
DECOMPOSITION TEMPERATURE: No data available.
% VOLATILE BY WEIGHT: ASTM D 2369-07 was used to determine the Volatile Content of mixed epoxy resin and hardener. Refer to the hardener SDS for information about the total volatile content of the resin/hardener system.

10. STABILITY AND REACTIVITY

STABILITY: Product is stable at normal temperatures and pressures.
REACTIVITY/HAZARDOUS REACTIONS:..... Product will not react by itself. A mass of more than one pound of product mixed with an aliphatic amine will cause irreversible polymerization with significant heat buildup. Strong acids, bases, amines and mercaptans can cause polymerization.
INCOMPATIBILITIES: Strong acids, bases, amines and mercaptans can cause polymerization. External heating or self-heating could result in rapid temperature increase and pressure build up. If such a condition were to occur in a drum, the drum could expand and rupture violently.
CONDITIONS TO AVOID: Avoid excessive heat.
DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and phenolics may be produced during uncontrolled exothermic reactions or when otherwise heated to decomposition.

11. TOXICOLOGICAL AND HAZARD ENDPOINT INFORMATION

Component Name	CAS#	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	>15,000 mg/kg (rat)	>23,000 mg/kg (rabbit)	No data
Benzyl alcohol	100-51-6	1620 mg/kg	No data	>4.18 mg/l 4 h aerosol
Phenol-formaldehyde polymer glycidyl ether	28064-14-4	>2,000 mg/kg (rat)	2,000 mg/kg (rat)	No data

ACUTE TOXICITY: No specific toxicity data exists for this mixture. Classification is based on acute toxicity estimation methods using ingredient data.
 Oral: Not classified. Does not meet acute oral toxicity criteria.
 Dermal: Not classified. Does not meet acute dermal toxicity criteria.
 Inhalation:..... Not classified. Does not meet acute inhalation toxicity criteria. If product is heated, vapors generated can cause headache, nausea, dizziness and possible respiratory irritation if inhaled in high concentrations.

SKIN CORROSION / IRRITATION:..... Causes skin irritation – Category 2.

SERIOUS EYE DAMAGE / IRRITATION:..... Causes serious eye irritation. Category 2A.

RESPIRATORY SENSITIZATION:..... Not classified. Does not meet criteria for respiratory sensitizer. Repeated exposure to high vapor concentrations may cause irritation of pre-existing lung allergies and increase the chance of developing allergy symptoms to this product.

SKIN SENSITIZATION:..... May cause allergic skin reaction. Category 1.

REPRODUCTIVE TOXICITY:..... Not classified. Diglycidyl ether bisphenol-A, in animal studies, has been shown not to interfere with reproduction. Diglycidyl ether bisphenol-A did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

MUTAGENICITY:..... Not classified. Diglycidyl ether bisphenol-A in animal mutagenicity studies were negative. In vitro mutagenicity tests were negative in some cases and positive in others.

CARCINOGENICITY:..... Not classified. No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA, NTP or IARC.

Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol-A. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that Diglycidyl ether bisphenol-A is carcinogenic. Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that Diglycidyl ether bisphenol-A is not classified as a carcinogen.

Epichlorohydrin, an impurity in this product (<5 ppm) has been reported to produce cancer in laboratory animals and to produce mutagenic changes in bacteria and cultured human cells. It has been established by the International Agency for Research on Cancer (IARC) as a probable human carcinogen (Group 2A) based on the following conclusions: human evidence – inadequate; animal evidence – sufficient. It has been classified as an anticipated human carcinogen by the National Toxicology Program (NTP). Note: It is unlikely that normal use of this product would result in measurable exposure concentrations to this substance.

STOT (Single Exposure): Not classified. Does not meet STOT SE criteria.

STOT (Repeated Exposure): Not classified. Does not meet STOT RE criteria.

ASPIRATION HAZARD: Not classified. Does not meet aspiration toxicity criteria.

OTHER HEALTH HAZARD INFORMATION:..... None known.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY:..... No specific test data available for the mixture. Calculated Estimate: Not classified. Does not meet acute aquatic classification criteria.

CHRONIC AQUATIC TOXICITY: No specific test data available for the mixture. Calculated Estimate: Aquatic Chronic Category 2.

PERSISTANCE AND BIODEGRADABILITY: No specific test data available for the mixture.

MOBILITY IN SOIL: No specific test data available for the mixture.

ADDITIONAL ECOTOXICITY INFORMATION:..... In the liquid, uncured state, this product may be harmful to aquatic life long lasting effects. Prevent release to the environment, sewers and natural waters.

Ingredient	CAS#	Ecotoxicity Classification Information
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	Aquatic Chronic Cat. 2
Benzyl alcohol	100-51-6	Not Classified
Phenol-formaldehyde polymer glycidyl ether	28064-14-4	Aquatic Chronic Cat. 2

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:..... Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Incinerate, recycle (fuel blending) or reclaim may be preferred methods when conducted in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

US DOT
U.N./N.A. NUMBER:..... Not regulated.

SHIPPING NAME:..... Not applicable.
 TECHNICAL SHIPPING NAME:..... Not applicable.
 HAZARD CLASS:..... Not applicable.
 PACKING GROUP:..... Not applicable.

CANADA TDG

U.N./N.A. NUMBER:..... Not regulated.
 SHIPPING NAME:..... Not applicable.
 TECHNICAL SHIPPING NAME:..... Not applicable.
 HAZARD CLASS:..... Not applicable.
 PACKING GROUP:..... Not applicable.

IMDG

U.N. NUMBER: UN3082.
 SHIPPING NAME:..... Environmentally hazardous substance, liquid, n.o.s.
 TECHNICAL SHIPPING NAME:..... Epoxy Resin.
 HAZARD CLASS:..... Class 9.
 PACKING GROUP:..... PG III.
 EmS Number: F-A, S-F
 MARINE POLLUTANT Yes

ICAO/IATA

U.N. NUMBER: UN3082.
 SHIPPING NAME:..... Environmentally hazardous substance, liquid, n.o.s.
 TECHNICAL SHIPPING NAME:..... Epoxy Resin.
 HAZARD CLASS:..... Class 9.
 PACKING GROUP:..... PG III.
 MARINE POLLUTANT Yes

15. REGULATORY INFORMATION

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDSL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.
Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	All ingredients are listed or otherwise compliant.

US EPA TSCA Requirements:..... No data available.

Canada WHMIS Confidential Business Information (CBI):..... No data available.

US EPA SARA TITLE III Reporting and Notification Requirements:

Subject to Section 302 (TPQ) No data available.
 Subject to Section 304 (RQ)..... No data available.
 Subject to Section 311 or 312 Refer to the health and physical classifications in section 2.
 Subject to Section 313 No data available.

STATE REGULATORY INFORMATION:

Chemicals listed below may be specifically regulated by individual states. For details on state regulatory requirements you should contact the appropriate state agency.

**COMPONENT NAME
/CAS NUMBER**

Epichlorohydrin
106-89-8

< 5ppm

STATE CODE

¹CA

¹. These substances are known to the state of California to cause cancer or reproductive harm, or both.

16. OTHER INFORMATION

REASON FOR ISSUE:..... Approval date change.
 PREPARED BY:..... Gougeon Brothers, Inc.
 SDS CONTACT:..... safety@gougeon.com
 TITLE: Health, Safety & Environmental Manager
 APPROVAL DATE: January 03, 2022
 SUPERSEDES DATE:..... January 15, 2019

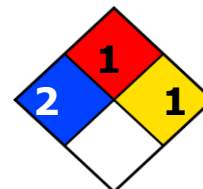
SDS VERSION: 105-2022a

OTHER HAZARD INFORMATION AND RATING SYSTEMS:

HMIS® RATING

HEALTH:	2
FLAMMABILITY:	1
PHYSICAL HAZARD:	1
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
0 = Low or None; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

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SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:..... WEST SYSTEM® 205 Fast Hardener
APPLICABLE PRODUCT CODES: 205, 205-A, 205-B, 205-C, 205-E, C 205-A, C 205-B, C 205-C, C 205-E
CHEMICAL FAMILY:..... Polyamine mixture
INTENDED PRODUCT USES:..... Curing agent for epoxy resin.
PRODUCT RESTRICTIONS: None identified.
SDS VERSION: 205-2022a

MANUFACTURER:
Gougeon Brothers, Inc.
100 Patterson Ave.
Bay City, MI 48706, U.S.A.
Phone: 866-937-8797 or 989-684-7286
www.westsystem.com

EMERGENCY TELEPHONE NUMBERS (24 HRS):
Transportation
CHEMTREC: 800-424-9300 (U.S.)
703-527-3887 (International)
Non-transportation
Poison Hotline: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification of Substance or Mixture

Acute toxicity, Oral, Category 4
Acute toxicity, Dermal, Category 4
Acute toxicity, Inhalation, Category 5
Skin corrosion/irritation, Category 1C
Skin sensitizer, Category 1
Germ cell mutagenicity, Category 2
Specific target organ toxicity (repeated exposure), Category 2
Acute aquatic toxicity, Category 2
Chronic aquatic toxicity, Category 2

Label Elements

Hazard Pictogram(s):



Signal Word:
DANGER

Hazard Statements:

H302 Harmful if swallowed
H312 Harmful in contact with skin
H333 May be harmful if inhaled
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H341 Suspected of causing genetic defects
H371 May cause damage to organs through prolonged or repeated exposure
H401 Toxic to aquatic life
H411 Toxic to aquatic life with long lasting effects

Precautionary Statements:

P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P260 Do not breathe dust/fume/mist/gas/vapors/spray
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P272 Contaminated work clothing should not be allowed out of the workplace
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P303 + P352 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse or wash skin with soap and water (or shower)
P313 + P333 If irritation or rash occurs: Get medical attention/advice
P363 Wash contaminated clothing before reuse
P304 + P340 IN INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

WEST SYSTEM® 205 Fast Hardener

P308 + P313 IF exposed or concerned: Get medical advice/attention
P310 Immediately call a POISON CENTER or doctor for advice
P391 Collect spillage
P405 Store locked up
P501 Dispose of contents and container according to local, state, national and International regulations

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Reaction products of triethylenetetramine with phenol and formaldehyde	32610-77-8	45-70
Polyethylenepolyamines	68131-73-7	10-30
Triethylenetetramine	112-24-3	5-13
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	5-10
Tetraethylenepentamine	112-57-2	3-10
Hydroxybenzene	108-95-2	1-7

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

4. FIRST AID MEASURES

FIRST AID FOR EYES:..... SYMPTOMS: Causes eye burns and eye damage. RESPONSE: Flush immediately with water for at least 15 minutes. Remove contact lenses if present and easy to do. Immediately call a POISON CONTROL CENTER or doctor.

FIRST AID FOR SKIN:..... SYMPTOMS: Causes skin burns, redness and irritation. May cause allergic skin reaction and sensitization. RESPONSE: Immediately wash skin with soap and water. Immediately call a POISON CONTROL CENTER or doctor.

FIRST AID FOR INHALATION:..... SYMPTOMS: Can cause respiratory irritation, shortness of breath or cough. RESPONSE: Remove to fresh air if effects occur and keep comfortable for breathing. Immediately consult with a physician if symptoms develop and persist.

FIRST AID FOR INGESTION:..... SYMPTOMS: May cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat. RESPONSE: Rinse mouth with water. DO NOT induce vomiting. If vomiting should occur, keep airway clear. Immediately call POISON CONTROL CENTER or doctor.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:..... SUITABLE: Foam, carbon dioxide (CO₂), dry chemical, sand, limestone powder. NON-SUITABLE: Direct water stream.

FIRE AND EXPLOSION HAZARDS:..... During a fire, smoke may contain the original materials in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include, but are not limited to: oxides of nitrogen, carbon monoxide, carbon dioxide, volatile amines, ammonia, nitric acid, aldehydes, nitrosamines. When mixed with sawdust, wood chips, or other cellulosic material, spontaneous combustion can occur under certain conditions. Heat is generated as the air oxidizes the amine. If the heat is not dissipated quickly enough, it can ignite the sawdust.

SPECIAL FIRE FIGHTING PROCEDURES:..... Use full-body protective gear and a self-contained breathing apparatus. Use of water may generate toxic aqueous solutions. Do not allow water run-off from fighting fire to enter drains or other water courses.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY MEASURES:..... Keep unnecessary and unprotected personnel from entering area. Use appropriate safety and personal protective equipment as indicated in Section 8.

MITIGATION AND CLEAN UP PROCEDURES:..... Stop leak without additional risk. Isolate area. Dike and absorb with inert material (e.g., sand) and collect in a suitable, closed container. Do not use sawdust, wood chips or other cellulosic materials to absorb the spill, as the possibility for spontaneous combustion exists. Warm, soapy water may be used to clean residual.

ENVIRONMENTAL PRECAUTIONS:..... Prevent from entering into soil, ditches, sewers, waterways and groundwater. See Section 12 for environmental impact information.

7. HANDLING AND STORAGE

WEST SYSTEM® 205 Fast Hardener

STORAGE TEMPERATURE (min./max.): 40°F (4°C) / 90°F (32°C).

STORAGE: Store in cool, dry place away from high temperatures and moisture. Keep container tightly closed. Store in a secure location with restricted access or store locked up. Store away from incompatible materials listed in Section 10.

HANDLING PRECAUTIONS: Use with adequate ventilation. Do not breathe vapors or mists from heated material. Do not breathe concentrated vapors. Avoid all skin and eye contact. Wash thoroughly after handling. When mixed with epoxy resin this product causes an exothermic reaction, which in large masses, can produce enough heat to damage or ignite surrounding materials and emit fumes and vapors that vary widely in composition and toxicity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate general ventilation and/or local ventilation to keep exposures below established limits.

EYE PROTECTION GUIDELINES: Chemical splash-proof goggles or face shield.

SKIN PROTECTION GUIDELINES: Wear liquid-proof, chemical resistant gloves (nitrile-butyl rubber, neoprene, butyl rubber or natural rubber) and full body-covering clothing.

RESPIRATORY PROTECTION GUIDELINES: When ventilation cannot be made adequate enough to keep exposures below established limits, use a NIOSH approved respirator with an organic vapor cartridge, organic vapor cartridge + P100, or a multi-contaminant cartridge, depending on specific workplace conditions. Consult with your respirator and cartridge supplier to ensure proper selection of respirator and cartridge based on ingredients listed in Section 3 and specific workplace conditions. Use and select a respirator according the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.

ADDITIONAL PROTECTIVE MEASURES: Use where there is immediate access to safety shower and emergency eye wash. Wash thoroughly after use. Contact lens should not be worn when working with this material. Generally speaking, working cleanly and following basic precautionary measures will greatly minimize the potential for harmful exposure to this product under normal use conditions.

OCCUPATIONAL EXPOSURE LIMITS: Exposure limits may not be established for this product as a whole. For established exposure limits of specific ingredients in this product, or other available exposure limit information, refer to the table below.

Ingredient Name	CAS#	Exposure Limit Information
Reaction products of triethylenetetramine with phenol and formaldehyde	32610-77-8	No data available
Polyethylenepolyamines	68131-73-7	AIHA WEEL: (refer to exposure limits for triethylenetetramine, tetraethylenepentamine)
Triethylenetetramine	112-24-3	AIHA WEEL: 1 ppm ; 6 mg/ m ³ ; Absorbed via skin
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	No data available
Tetraethylenepentamine	112-57-2	AIHA WEEL: 1 ppm; 5 mg/kg; SKIN, DSEN
Hydroxybenzene	108-95-2	ACGIH TWA: 5 ppm; 19 mg m ³ ; BEI® Index Substance NIOSH REL: 5 ppm; 19 mg/ m ³ OSHA PEL: 5 ppm; 19 mg m ³ ; Table Z-1 NIOSH CEILING: 15.6 ppm; 60 mg/m ³ ; Danger of cutaneous absorption

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Liquid.
COLOR: Amber
ODOR: Ammonia-like
ODOR THRESHOLD: No data available
pH: 10.3
MELTING POINT / FREEZING POINT No data.
BOILING POINT (760mm/Hg): > 400°F (204°C)
FLASH POINT: Estimated > 200°F (93°C) estimated based on ingredient data.
AUTO IGNITION TEMPERATURE No data.
LOWER EXPLOSIVE LIMIT (LEL) No data.
UPPER EXPLOSIVE LIMIT (UEL) No data.
VAPOR PRESSURE No data.
SPECIFIC GRAVITY/DENSITY (water = 1) 1.05
BULK DENSITY 8.85 lbs./gal. (1.06 kg/L)
VAPOR DENSITY (air = 1) No data.
EVAPORATION RATE (Butyl Acetate = 1) No data.
WATER SOLUBILITY (% BY WT.) No data.
PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow) No data.
KINEMATIC VISCOSITY: 952 mm²/s @ 40°C
DECOMPOSITION TEMPERATURE: No data available.
% VOLATILE BY WEIGHT: ASTM 2369-07 was used to determine the Volatile Matter Content of mixed epoxy resin and hardener. The combined VOC content for the resin and hardener system is listed below.

Resin/Hardener	VOC Content	
	(g/L)	(lb/gal)
105 / 205	7.91	0.07

10. STABILITY AND REACTIVITY

STABILITY: Product is stable at normal temperatures and pressures.

REACTIVITY/HAZARDOUS REACTIONS: Product will not react by itself. A mass of more than one pound of product plus an epoxy resin will cause irreversible polymerization with significant heat buildup and pressure.

INCOMPATIBILITIES: Avoid acids, oxidizing materials, halogenated organic compounds (e.g., methylene chloride). Avoid nitrous acid, nitrites and atmospheres with high nitrous oxide concentrations. Avoid sodium hypochlorite (bleach) and peroxides. External heating or self-heating could result in rapid temperature increase and pressure build up. If such a condition were to occur in a drum, the drum could expand and rupture violently.

CONDITIONS TO AVOID: Avoid excessive heat.

DECOMPOSITION PRODUCTS: Very toxic fumes and gases when burned or otherwise heated to decomposition. Decomposition products may include, but not limited to: oxides of nitrogen, volatile amines, ammonia, nitric acid, aldehydes, cyanides, nitrosamines.

11. TOXICOLOGICAL INFORMATION

Ingredient Name	CAS#	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Reaction products of triethylenetetramine with phenol and formaldehyde	32610-77-8	No data	No data	No data
Polyethylenepolyamines	68131-73-7	1716 mg/kg	> 2000 mg/kg	No data
Triethylenetetramine	112-24-3	1716 mg/kg	1465 mg/kg	No data
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	> 2000 mg/kg (ATE)	> 2000 mg/kg (ATE)	No data
Tetraethylenepentamine	112-57-2	2140 - 3990 mg/kg	660-1260 mg/kg	No data
Hydroxybenzene	108-95-2	317 mg/kg	630 mg/kg (solid)	0.9 mg/l; 8h

ACUTE TOXICITY: No specific toxicity data exists for this mixture. Classification is based on acute toxicity estimation methods using ingredient data.
 Oral: Category 4. Harmful if swallowed. May result in gastrointestinal tract irritation and pain.
 Dermal: Category 4. Harmful in contact with skin. Can be readily absorbed through the skin in harmful amounts.
 Inhalation:..... Category 5. May be harmful if inhaled .

SKIN CORROSION / IRRITATION:..... Category 1C. Causes severe skin burns.

SERIOUS EYE DAMAGE / IRRITATION:..... Category 1. Causes serious eye burns and damage. Vapors can be absorbed in eye tissue and cause damage.

RESPIRATORY SENSITIZATION:..... Not classified. Does not meet classification criteria.

SKIN SENSITIZATION:..... Category 1. May cause allergic skin reaction.

REPRODUCTIVE TOXICITY:..... Not classified. Does not meet classification criteria.

MUTAGENICITY:..... Category 2. A component in this product, hydroxybenzene, is suspected of causing genetic defects.

CARCINOGENICITY:..... Not classified. Does not meet classification criteria. Hydroxybenzene is classified by IARC as a Group 3 – Not classifiable as to its carcinogenicity to humans.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):..... Not classified. Does not meet classification criteria.

SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure): Category 2. Absorption of phenolic solutions through the skin may be very rapid and can cause damage to the liver, kidneys, pancreas, spleen, and edema of the lungs.

ASPIRATION HAZARD: Not classified. Does not meet classification criteria.

OTHER HEALTH HAZARD INFORMATION:..... Can cause stomach irregularities based on human evidence. This product is corrosive to skin and mucous membrane tissues and therefore vapor inhalation may cause respiratory tract irritation.

12. ECOLOGICAL INFORMATION

WEST SYSTEM® 205 Fast Hardener

ACUTE AQUATIC TOXICITY:..... Category 2. Toxic to the aquatic environment. Calculated Estimate. No specific test data available for the mixture.

CHRONIC AQUATIC TOXICITY:..... Category 2. Toxic to the aquatic environment with long lasting effects. Calculated Estimate. No specific test data available for the mixture.

PERSISTENCE AND BIODEGRADABILITY: No specific test data available for the mixture.

MOBILITY IN SOIL: No specific test data available for the mixture.

ADDITIONAL ECOTOXICITY INFORMATION:..... In the liquid, uncured state, this product may be harmful to aquatic life with long lasting effects. Prevent release to the environment, sewers and natural waters.

Ingredient	CAS#	Ecotoxicity Classification Information
Reaction products of triethylenetetramine with phenol and formaldehyde	32610-77-8	Aquatic Chronic Cat. 3
Polyethylenepolyamines	68131-73-7	Aquatic Acute Cat. 1; Aquatic Chronic Cat. 1
Triethylenetetramine	112-24-3	Aquatic Chronic Cat. 3
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	Aquatic Chronic Cat. 3
Tetraethylenepentamine	112-57-2	Aquatic Acute Cat. 2; Aquatic Chronic Cat. 2
Hydroxybenzene	108-95-2	Aquatic Acute Cat. 3; Aquatic Chronic Cat. 2

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:..... Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Incinerate, recycle (fuel blending) or reclaim may be preferred methods when conducted in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

US DOT

UN NUMBER:..... UN 2735.
 SHIPPING NAME:..... Polyamines, liquid, corrosive, n.o.s.
 TECHNICAL SHIPPING NAME:..... Triethylenetetramine
 HAZARD CLASS:..... Class 8.
 PACKING GROUP:..... PG III.
 MARINE POLLUTANT:..... No

CANADA TDG

UN NUMBER:..... UN 2735.
 SHIPPING NAME:..... Polyamines, liquid, corrosive, n.o.s.
 TECHNICAL SHIPPING NAME:..... Triethylenetetramine
 HAZARD CLASS:..... Class 8.
 PACKING GROUP:..... PG III.
 MARINE POLLUTANT:..... No

IMDG

UN NUMBER:..... UN 2735.
 SHIPPING NAME:..... Polyamines, liquid, corrosive, n.o.s.
 TECHNICAL SHIPPING NAME:..... Triethylenetetramine
 HAZARD CLASS:..... Class 8.
 PACKING GROUP:..... PG III.
 EmS Number:..... F-A, S-B
 MARINE POLLUTANT..... Yes

ICAO/IATA

UN NUMBER:..... UN 2735.
 SHIPPING NAME:..... Polyamines, liquid, corrosive, n.o.s.
 TECHNICAL SHIPPING NAME:..... Triethylenetetramine
 HAZARD CLASS:..... Class 8.
 PACKING GROUP:..... PG III.
 MARINE POLLUTANT:..... Yes

15. REGULATORY INFORMATION

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDSL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.

WEST SYSTEM® 205 Fast Hardener

Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	No data on CAS# 26950-63-0.

US EPA TSCA Requirements:..... No data available.

Canada WHMIS Confidential Business Information (CBI):..... No data available.

US EPA SARA TITLE III Reporting and Notification Requirements:

Subject to Section 302 (TPQ)..... Phenol = 500/1000 (lbs.). TPQ = 500 lbs. if phenol is in powder form and has a particle size of less than 100 microns or is handled in solution or molten form, or meets the criteria for a NFPA reactivity rating of 2, 3, or 4.
 Subject to Section 304 (RQ)..... Phenol RQ = 1000 lbs.
 Subject to Section 311 or 312 Refer to the health and physical classifications in section 2.
 Subject to Section 313 This product contains hydroxybenzene (phenol) and is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

US Federal Clean Air Act (CAA):

Phenol is regulated as a under the Federal Clean Air Act as a Hazardous Air Pollutant (HAPs).

US STATE REGULATORY INFORMATION:

The following chemicals may be specifically regulated by individual states. For details on state regulatory requirements you should contact the appropriate state agency.

COMPONENT NAME

/CAS NUMBER

Hydroxybenzene
108-95-2
Triethylenetetramine
112-14-3
Tetraethylenepentamine
112-57-2

STATE CODE

PA, MA, NJ, IL, RI
PA, MA, NJ
PA, MA, NJ

16. OTHER INFORMATION

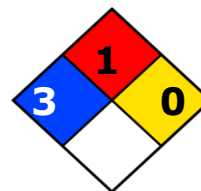
REASON FOR ISSUE:..... Approval date change.
PREPARED BY:..... Gougeon Brothers, Inc.
TITLE: Health, Safety & Environmental Manager
APPROVAL DATE: January 3, 2022
SUPERSEDES DATE:..... January 15, 2019
SDS VERSION: 205-2022a

OTHER HAZARD INFORMATION AND RATING SYSTEMS:

HMIS® RATING

HEALTH:	3
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
 0 = Low or None; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

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SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:.....WEST SYSTEM® 406 Colloidal Silica
APPLICABLE PRODUCT CODES:406, 406-2, 406-7, 406-B.
CHEMICAL FAMILY:..... Synthetic amorphous pyrogenic silica.
INTENDED PRODUCT USES:..... Thickening agent for liquid epoxy resins.
PRODUCT RESTRICTIONS:..... None identified.
SDS VERSION:406-2022a

MANUFACTURER:
Gougeon Brothers, Inc.
100 Patterson Ave.
Bay City, MI 48706, U.S.A.
Phone: 866-937-8797 or 989-684-7286
www.westsystem.com

EMERGENCY TELEPHONE NUMBERS (24 HRS):
Transportation
CHEMTREC: 800-424-9300 (U.S.)
703-527-3887 (International)
Non-transportation
Poison Hotline: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification of Substance or Mixture

None

Label Elements

Hazard Pictogram(s):
None

Signal Word:
None

Hazard Statements:
None

Precautionary Statements:
None

Other Hazards

Handling and conveyance of material may create static electrical charge. Earth/ground handling and processing equipment to prevent against static discharge.

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Synthetic amorphous pyrogenic silica	112945-52-5	80-100

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

4. FIRST AID MEASURES

FIRST AID FOR EYES:..... SYMPTOMS: Excessive exposure may cause irritation and tearing.
RESPONSE: Flush with water for at least 15 minutes. Remove contact lenses if present and easy to do. Consult a physician as a precautionary measure if symptoms develop and persist.

FIRST AID FOR SKIN:..... SYMPTOMS: May cause skin dryness or slight irritation. **RESPONSE:**
Wash with mild soap and water. Consult a physician if effects occur and persist.

FIRST AID FOR INHALATION:..... SYMPTOMS: Excessive exposure may cause coughing, respiratory irritation or shortness of breath due to temporary lung overload. **RESPONSE:** Remove to fresh air if symptoms develop and keep comfortable for breathing. Seek medical advice if symptoms persist.

FIRST AID FOR INGESTION:..... SYMPTOMS: No acute adverse health effects expected from amounts ingested under normal conditions of use. **RESPONSE:** Seek medical attention if a significant amount is ingested.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: **SUITABLE:** Foam, carbon dioxide (CO₂), water, or dry chemical. Fog or mist is recommended if water is used. **NON-SUITABLE:** Avoid using high pressure media.

FIRE AND EXPLOSION HAZARDS: This product will not support combustion. Will not form combustible dust concentrations in the air.
SPECIAL FIRE FIGHTING PROCEDURES: Wear a self-contained breathing apparatus and complete full-body personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Keep unnecessary and unprotected personnel from entering area. Use appropriate safety and personal protective equipment as indicated in Section 8.
MITIGATION AND CLEAN UP PROCEDURES: Use methods that avoid generating airborne dust. Use a vacuum with high efficiency particulate air (HEPA) filtration is recommended. Avoid creating a dust cloud by brushing or sweeping, or using compressed air.
ENVIRONMENTAL PRECAUTIONS: Contain spilled product to the extent practical and feasible.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (min./max.): 0°F (-17°C) / 100°F (38°C)
STORAGE: Store in cool, dry place. Store in sealed containers to prevent moisture absorption or absorption of other volatile materials.
HANDLING PRECAUTIONS: Avoid dust formation. Avoid breathing dust. Wash after handling. Provide appropriate exhaust ventilation at points of operation where dust can be generated. Avoid using compressed air. Take precautionary measures against static discharges. Metal parts of mixing and processing equipment should be earthed/grounded.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate general ventilation and/or local ventilation to keep exposures below established limits.
EYE PROTECTION GUIDELINES: Safety glasses with side shields, or goggles if necessary.
SKIN PROTECTION GUIDELINES: Gloves or a barrier cream may be useful to help prevent skin from drying.
RESPIRATORY PROTECTION GUIDELINES: When ventilation cannot be made adequate enough to keep exposures below established limits, use a NIOSH approved respirator with particulate filter, such as a N95 or greater, depending on specific workplace conditions. Consult with your respirator and cartridge supplier to ensure proper selection of respirator and cartridge based on ingredients listed in Section 3 and specific workplace conditions. Use and select a respirator according the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.
ADDITIONAL PROTECTIVE MEASURES: Practice good caution and personal cleanliness to avoid skin and eye contact. Wash thoroughly after handling. Generally speaking, working cleanly and following basic precautionary measures will greatly minimize the exposure to this product under normal use conditions.
OCCUPATIONAL EXPOSURE LIMITS: Exposure limits may not be established for this product as a whole. For established exposure limits of specific ingredients in this product, or other available exposure limit information, refer to the table below.

Ingredient Name	CAS#	Exposure Limit Information
Synthetic amorphous pyrogenic silica	112945-52-5	Amorphous silica: OSHA PEL 6 mg/m ³ Dust and PNOS: ACGIH 10mg/m ³ , TWA, Inhalable; 3 mg/m ³ , TWA, Respirable; OSHA PEL 15 mg/m ³ , TWA, total dust; 5 mg/m ³ , TWA, Respirable

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Powder, solid.
COLOR: White.
ODOR: None.
ODOR THRESHOLD: No data available
pH: No data available
MELTING POINT / FREEZING POINT No data available
BOILING POINT (760mm/Hg): No data available
FLASH POINT: No data available
AUTO IGNITION TEMPERATURE No data available
LOWER EXPLOSIVE LIMIT (LEL) No data available
UPPER EXPLOSIVE LIMIT (UEL) No data available
VAPOR PRESSURE No data available
SPECIFIC GRAVITY/DENSITY (water = 1) 2.2
BULK DENSITY No data available

VAPOR DENSITY (air = 1) No data available
 EVAPORATION RATE (Butyl Acetate = 1) No data available
 WATER SOLUBILITY (% BY WT.) Only slightly soluble
 PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow)..... No data available
 KINEMATIC VISCOSITY: No data (mm²/s @ 20°C)
 DECOMPOSITION TEMPERATURE: No data available.
 % VOLATILE BY WEIGHT: Not applicable.
 EXPLOSIVE PROPERTIES: Not applicable. This product will not support combustion.
 Kst VALUE: No data available
 MAXIMUM EXPLOSION PRESSURE (Pmax) No data available
 MINIMUM IGNITION ENERGY (MIE): No data available
 MAXIMUM EXPLOSION CONCENTRATION (MEC): No data available
 DUST EXPLOSION CLASSIFICATION: No data available

10. STABILITY AND REACTIVITY

STABILITY: Product is stable at normal temperatures and pressures.
 REACTIVITY/HAZARDOUS REACTIONS: Product will not react by itself.
 INCOMPATIBILITIES: None known.
 CONDITIONS TO AVOID: Avoid excessive airborne dust formation.
 DECOMPOSITION PRODUCTS: None known.

11. TOXICOLOGICAL AND HAZARD ENDPOINT INFORMATION

Component Name	CAS#	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Synthetic amorphous pyrogenic silica	112945-52-5	>5000 mg/kg OECD 401	>2000 mg/kg OECD 402	No data

ACUTE TOXICITY: No specific toxicity data exists for this mixture. Classification is based on acute toxicity estimation methods using ingredient data.
 Oral: Not classified. Does not meet acute oral toxicity criteria.
 Dermal: Not classified. Does not meet acute dermal toxicity criteria.
 Inhalation: Not classified. Does not meet acute inhalation toxicity criteria.

SKIN CORROSION / IRRITATION: Not classified. Does not meet criteria for skin corrosion/irritation.

SERIOUS EYE DAMAGE / IRRITATION: Not classified. Does not meet criteria for skin eye damage/irritation, OECD 405. High dust concentrations may cause mechanical irritation.

RESPIRATORY SENSITIZATION: Not classified. Does not meet criteria for respiratory sensitizer.

SKIN SENSITIZATION: Not classified. Does not meet criteria for skin sensitization.

REPRODUCTIVE TOXICITY: Not classified. Does not meet criteria for reproductive toxicity.

MUTAGENICITY: Not classified. Does not meet criteria for mutagenicity.

CARCINOGENICITY: Not classified. Does not meet criteria for carcinogenicity.

No evidence of carcinogenicity was observed in multiple animal species following repeated oral or inhalation exposure to synthetic amorphous silica. Similarly, epidemiology studies show no evidence of carcinogenicity in workers who manufacture synthetic amorphous silica.

STOT (Single Exposure): Not classified. Does not meet STOT SE criteria.

STOT (Repeated Exposure): Not classified. Does not meet STOT RE criteria.

Repeated dose toxicity: oral (rat), 13 weeks, LOEL = 1.3 mg/m³ based on mild reversible effects in the lungs. Repeated dose toxicity: inhalation (rat), 90 days, LOEL = 1 mg/m³ based on reversible effects in the lungs and effects in the nasal cavity.

ASPIRATION HAZARD: Not classified. Does not meet aspiration toxicity criteria.

OTHER HEALTH HAZARD INFORMATION: While product does not meet the classification of a respiratory irritant, excessive inhalation exposure can irritate the respiratory tract. Temporary lung overload can cause coughing and shortness of breath.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY: Not classified. Does not meet acute aquatic toxicity criteria.

Fish (brachydanio rerio) LC50 96h = >10,000 mg/L (OECD 203). No acute toxicity to daphnia with EL and EL₅₀ ranging from >1000 – 10,000 mg/L (OECD 202).

CHRONIC AQUATIC TOXICITY: No specific test data available.

PERSISTANCE AND BIODEGRADABILITY: Not applicable to inorganic substances.

MOBILITY IN SOIL: No specific test data available for the mixture.

ADDITIONAL ECOTOXICITY INFORMATION: Prevent release to the environment, sewers and natural waters.

Ingredient	CAS#	Ecotoxicity Classification Information
Synthetic amorphous pyrogenic silica	112945-52-5	Not classified.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Recycle (fuel blending) or reclaim may be preferred methods when conducted in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

US DOT

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.

CANADA TDG

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.

ICAO/IATA

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.
 MARINE POLLUTANT: Not applicable.

IMDG

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.
 EmS Number: Not applicable.
 MARINE POLLUTANT Not applicable.

15. REGULATORY INFORMATION

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.
Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	All ingredients are listed or otherwise compliant.
New Zealand	NZIoC	All ingredients are listed or otherwise compliant.

US EPA TSCA Requirements: No data available.

Canada WHMIS Confidential Business Information (CBI): No data available.

US EPA SARA TITLE III Reporting and Notification Requirements:

Subject to Section 302 (TPQ) Not regulated.
 Subject to Section 304 (RQ)..... Not regulated.
 Subject to Section 311 or 312 Not regulated.
 Subject to Section 313 Not regulated.

STATE REGULATORY INFORMATION:

Chemicals listed below may be specifically regulated by individual states. For details on state regulatory requirements you should contact the appropriate state agency.

COMPONENT NAME

/CAS NUMBER

Amorphous silica
 7631-86-9 or 112945-52-5

STATE CODE

PA, NJ, MA

16. OTHER INFORMATION

REASON FOR ISSUE:..... Approval date change.
 PREPARED BY:..... Gougeon Brothers, Inc.
 SDS CONTACT:..... safety@gougeon.com
 TITLE:..... Health, Safety & Environmental Manager
 APPROVAL DATE:..... January 3, 2022
 SUPERSEDES DATE:..... January 15, 2019
 SDS VERSION:..... 406-2022a

OTHER HAZARD INFORMATION AND RATING SYSTEMS:

HMIS® RATING

HEALTH:	0
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
 0 = Low or None; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

Information in this document is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Gougeon Brothers, Inc. The data on this sheet is related only to the specific material designated herein. Gougeon Brothers, Inc. assumes no legal responsibility for use or reliance upon these data.

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:..... WEST SYSTEM® 713 Episize™ Unidirectional Glass Tape, WEST SYSTEM 729 Episize™ Glass Tape, WEST SYSTEM 731 Episize™ Glass Tape, WEST SYSTEM 732 Episize™ Glass Tape and WEST SYSTEM 733 Episize™ Glass Tape.
APPLICABLE PRODUCT CODES: 713-50, 729, 729-10, 731, 732, 732-10 and 733
CHEMICAL FAMILY:..... Woven, non-respirable, continuous filament glass fiber.
INTENDED PRODUCT USES:..... Composites.
PRODUCT RESTRICTIONS: None identified.
SDS VERSION: 713, 729, 731, 732 and 733-2022a

MANUFACTURER:
Gougeon Brothers, Inc.
100 Patterson Ave.
Bay City, MI 48706, U.S.A.
Phone: 866-937-8797 or 989-684-7286
www.westsystem.com

EMERGENCY TELEPHONE NUMBERS (24 HRS):
Transportation
CHEMTREC: 800-424-9300 (U.S.)
703-527-3887 (International)
Non-transportation
Poison Hotline: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification of Substance or Mixture

Hazards Not Otherwise Classified (HNOC)

Label Elements

Hazard Pictogram(s):
No data available

Signal Word:
WARNING

Hazard Statements:
No data available

Precautionary Statements:
No data available

Other Hazards:

As supplied, the glass fibers in this product are non-respirable. Continuous filament glass fibers that are chopped, crushed, sanded or otherwise mechanically processed may contain very small amounts of respirable particulate, some of which may be in the form of glass shards. Glass fragments or shards may cause temporary mechanical eye, skin and respiratory irritation and itching.

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Continuous filament, non-respirable, glass fiber	65997-17-3	80-100
Sizing	Trade Secret	1-5

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

4. FIRST AID MEASURES

FIRST AID FOR EYES..... SYMPTOMS: May cause mechanical irritation and redness. RESPONSE: Flush immediately with water for at least 15 minutes. Remove contact lenses if present and easy to do. Consult a physician as precautionary measure if irritation persists.

FIRST AID FOR SKIN..... SYMPTOMS: Skin contact with glass shards may cause temporary mechanical irritation. RESPONSE: Remove contaminated clothing. Wash, lather skin with soap and rinse with warm, flowing water.

FIRST AID FOR INHALATION..... SYMPTOMS: Irritation and cough. RESPONSE: Remove to fresh air if respiratory irritation occurs. Consult a physician if irritation or cough develops and persists.

FIRST AID FOR INGESTION..... SYMPTOMS: Not a likely route of exposure. No acute adverse health effects expected from amounts ingested under normal conditions of use. RESPONSE: Seek medical attention if a significant amount is ingested.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: **SUITABLE:** Foam, carbon dioxide (CO₂), water, dry chemical. **NON-SUITABLE:** None known.

FIRE AND EXPLOSION HAZARDS: Fiberglass itself will not support combustion. Sizing and stitching may be combustible. During a fire, smoke may contain carbon monoxide, carbon dioxide, hydrogen, and small amounts of other combustion products of undetermined composition and toxicity.

SPECIAL FIRE FIGHTING PROCEDURES: Wear a self-contained breathing apparatus and complete full-body personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Keep unnecessary and unprotected personnel from entering area. Use appropriate safety and personal protective equipment as indicated in Section 8.

MITIGATION AND CLEAN UP PROCEDURES: Minimize or shut off air movement. Material will settle out of the air. Sweep or vacuum in a manner as to avoid generating additional airborne dust.

ENVIRONMENTAL PRECAUTIONS: No data available. Not generally regarded as hazardous to the environment. Prevent from entering into soil, ditches, sewers, waterways and groundwater. See Section 12 for environmental impact information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (min./max.): Store at or below 25°C (77°F)

STORAGE: Store in cool, dry place. Store in original packaging to avoid dust generation. Store in environment with less than 65% relative humidity for best performance.

HANDLING PRECAUTIONS: As supplied, the glass fibers in this product are non-respirable. Continuous filament glass fibers that are chopped, crushed, sanded or otherwise mechanically processed may contain very small amounts of respirable particulate, some of which may be in the form of glass shards. Avoid generating excessive airborne dust. Avoid skin and eye contact. Wash thoroughly after handling. Launder contaminated clothing before reuse. Avoid excessive inhalation of airborne dusts.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate general ventilation and/or local ventilation to keep exposures below established limits.

EYE PROTECTION GUIDELINES: Safety glasses with side shields or chemical splash goggles.

SKIN PROTECTION GUIDELINES: Wear protective gloves and protect other exposed skin areas. Consider wearing a light-weight, full body-covering protective clothing that can be discarded upon contamination with glass fibers or glass shards.

RESPIRATORY PROTECTION GUIDELINES: As supplied, the glass fibers in this product are non-respirable. Continuous filament glass fibers that are chopped, crushed, sanded or otherwise mechanically processed may contain very small amounts of respirable particulate, some of which may be in the form of glass shards. When ventilation cannot be made adequate enough to keep exposures below established limits, use a NIOSH approved respirator with N95 or P100 particulate filter efficiency or better, depending on specific workplace conditions. Consult with your respirator supplier to ensure proper selection of respirator and cartridge based on ingredients listed in Section 3 and specific workplace conditions. Use and select a respirator according the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.

ADDITIONAL PROTECTIVE MEASURES: Practice good caution and personal cleanliness to avoid inhalation and skin and eye contact. Wash exposed skin areas thoroughly after handling.

OCCUPATIONAL EXPOSURE LIMITS: Exposure limits may not be established for this product as a whole. For established exposure limits of specific ingredients in this product, or other available exposure limit information, refer to the table below.

Ingredient Name	CAS#	Exposure Limit Information
Continuous filament, non-respirable, glass fiber	65997-17-3	ACGIH – TLV TWA: 1 f/cc; 10 mg/m ³ (total); 3 mg/m ³ (respirable) OSHA – PEL TWA: 15 mg/m ³ (total); 5 mg/m ³ (respirable)
Sizing	Trade Secret	No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Woven glass fabric; solid.

COLOR: White to off-white.

ODOR: No odor.

ODOR THRESHOLD: No data available.

pH: No data available.

MELTING POINT / FREEZING POINT No data available.
 BOILING POINT (760mm/Hg): No data available.
 FLASH POINT: No data available.
 AUTO IGNITION TEMPERATURE No data available.
 LOWER EXPLOSIVE LIMIT (LEL) No data available.
 UPPER EXPLOSIVE LIMIT (UEL) No data available.
 VAPOR PRESSURE No data available.
 SPECIFIC GRAVITY/DENSITY (water = 1) No data available.
 BULK DENSITY No data available.
 VAPOR DENSITY (air = 1) No data available.
 EVAPORATION RATE (Butyl Acetate = 1) No data available.
 WATER SOLUBILITY (% BY WT.) No data available.
 PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow) No data available.
 KINEMATIC VISCOSITY: No data available.
 DECOMPOSITION TEMPERATURE: No data available.
 % VOLATILE BY WEIGHT: No data available.

10. STABILITY AND REACTIVITY

STABILITY: Product is stable at normal temperatures and pressures.
 REACTIVITY/HAZARDOUS REACTIONS: No data available.
 INCOMPATIBILITIES: No data available.
 CONDITIONS TO AVOID: Avoid excessive heat.
 DECOMPOSITION PRODUCTS: During a fire, smoke may contain carbon monoxide, carbon dioxide, and small amounts of other combustion products of undetermined composition and toxicity.

11. TOXICOLOGICAL AND HAZARD ENDPOINT INFORMATION

Component Name	CAS#	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Continuous filament, non-respirable, glass fiber	65997-17-3	No data available	No data available	No data available
Sizing	Trade Secret	No data available	No data available	No data available

ACUTE TOXICITY: No specific toxicity data exists for this mixture. Classification is based on acute toxicity estimation methods using ingredient data.
 Oral: Not classified. Based on available data does not meet acute oral toxicity criteria.
 Dermal: Not classified. Based on available data does not meet acute dermal toxicity criteria.
 Inhalation: Not classified. Based on available data does not meet acute inhalation toxicity criteria.

SKIN CORROSION / IRRITATION: Not classified. Based on available data does not meet classification criteria.
 SERIOUS EYE DAMAGE / IRRITATION: Not classified. Based on available data does not meet classification criteria.
 RESPIRATORY SENSITIZATION: Not classified. Based on available data does not meet classification criteria.
 SKIN SENSITIZATION: Not classified. Based on available data does not meet classification criteria.
 REPRODUCTIVE TOXICITY: Not classified. Based on available data does not meet classification criteria.
 MUTAGENICITY: Not classified. Based on available data does not meet classification criteria.
 CARCINOGENICITY: Not classified. Based on available data does not meet classification criteria.

IARC Class 3 – Not classifiable as to its carcinogenicity to humans.

Animal Study: In 2000, the Institute of Occupational Medicine (IOM) in Scotland published the results of a long term inhalation study on animals exposed to fibers that were manufactured to be RESIRABLE. Animals were exposed to a very high concentration to these RESPIRABLE fibers (1022 fibers/cc for 5 hours/day, 7 days/week for 52 weeks). Exposure to these microfibers resulted in the development of fibrosis, lung cancer and mesothelioma as a result of the fibers being able to reach the lower regions of the lung.

Epidemiology Studies: Two major studies in the US (performed by the University of Pittsburgh) and Europe (performed by the International Agency for Research on Cancer) showed no increase in lung cancer or respiratory disease among people working in production facilities producing NON-RESPIRABLE continuous filament fiberglass. An additional smaller study performed in Canada also did not show an association between exposure of workers to fiberglass and respiratory cancer.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): Not classified. Based on available data does not meet classification criteria.
 SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure): Not classified. Based on available data does not meet classification criteria.

ASPIRATION HAZARD: Not classified. Based on available data does not meet classification criteria.

OTHER HEALTH HAZARD INFORMATION: As supplied, the glass fibers in this product are non-respirable. Continuous filament glass fibers that are chopped, crushed, sanded or otherwise mechanically processed may contain very small amounts of respirable particulate, some of which may be in the form of glass shards. The measured airborne concentration in areas where mechanical processing occurs has been shown to be extremely low and typically well below applicable exposure limits.

There are no known long term health effects from long term use or contact with non-respirable continuous filament fibers as supplied in this product. Non-respirable fibers cannot reach the deep lung because they have diameters greater 3.5 micrometers. Fibers of this dimension cannot penetrate the lower regions of the lung and thus having no possibility of serious pulmonary damage. Instead, they deposit on the surfaces of the upper respiratory tract, nose and pharynx. These fibers are then cleared through normal physiological mechanisms.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY: No specific test data available for the mixture. Calculated Estimate: Does not meet acute aquatic toxicity requirements based on available data.

CHRONIC AQUATIC TOXICITY: No specific test data available for the mixture. Calculated Estimate: Does not meet chronic aquatic toxicity requirements based on available data.

PERSISTENCE AND BIODEGRADABILITY: No specific test data available for the mixture.

MOBILITY IN SOIL: No specific test data available for the mixture.

ADDITIONAL ECOTOXICITY INFORMATION: Not expected to present an acute or chronic toxicity hazard to the aquatic environment. Prevent release to the environment, sewers and natural waters.

Ingredient	CAS#	Ecotoxicity Classification Information
Continuous filament, non-respirable, glass fiber	65997-17-3	No data available
Sizing	Trade Secret	No data available

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Recycle, reclamation or landfilling may be preferred methods when conducted in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

US DOT

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.

CANADA TDG

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.

ICAO/IATA

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.
 MARINE POLLUTANT: Not applicable.

IMDG

UN NUMBER: Not regulated.
 SHIPPING NAME: Not applicable.
 TECHNICAL SHIPPING NAME: Not applicable.
 HAZARD CLASS: Not applicable.
 PACKING GROUP: Not applicable.

EmS Number: Not applicable.
 MARINE POLLUTANT Not applicable.

15. REGULATORY INFORMATION

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.
Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	All ingredients are listed or otherwise compliant.
New Zealand	NZIoC	All ingredients are listed or otherwise compliant.

US EPA TSCA Requirements:..... No data available.

Canada WHMIS Confidential Business Information (CBI):..... No data available.

US EPA SARA TITLE III Reporting and Notification Requirements:

- Subject to Section 302 (TPQ) No data available.
- Subject to Section 304 (RQ)..... No data available.
- Subject to Section 311 or 312 Refer to the health and physical classifications in section 2.
- Subject to Section 313 No data available.

STATE REGULATORY INFORMATION:

Chemicals listed below may be specifically regulated by individual states. For details on state regulatory requirements you should contact the appropriate state agency.

COMPONENT NAME

CAS NUMBER

No data available.

STATE CODE

16. OTHER INFORMATION

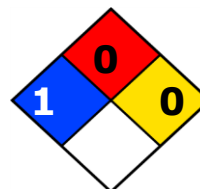
REASON FOR ISSUE:..... Approval date change.
 PREPARED BY: Gougeon Brothers, Inc.
 SDS CONTACT: safety@gougeon.com
 TITLE: Health, Safety & Environmental Manager
 APPROVAL DATE: January 3, 2022
 SUPERSEDES DATE: January 15, 2019
 SDS VERSION: 713, 729, 731, 732 and 733-2022a

OTHER HAZARD INFORMATION AND RATING SYSTEMS:

HMIS® RATING

HEALTH:	1
FLAMMABILITY:	0
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
 0 = Low or None; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

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