

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:..... WEST SYSTEM® 206 Slow Hardener
APPLICABLE PRODUCT CODES: 206, 206-A, 206-B, 206-C, 206-E, C 206-A, C 206-B, C 206-C, C 206-E
CHEMICAL FAMILY:..... Polyamine mixture.
INTENDED PRODUCT USES:..... Curing agent for epoxy resins.
PRODUCT USE RESTRICTIONS: None identified.
SDS VERSION: 206-2019a

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, Inhalation, Category 5
Skin corrosion/irritation, Category 1B
Skin sensitizer, Category 1
Eye damage/irritation, Category 1
Specific target organ toxicity (single exposure - inhalation), Category 3
Acute aquatic toxicity, Category 3
Chronic aquatic toxicity, Category 2

Label Elements

Hazard Pictogram(s):



Signal Word:
DANGER

Hazard Statements:

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H333 May be harmful if inhaled
H335 May cause respiratory irritation
H411 Toxic to aquatic life with long lasting effects

Precautionary Statements:

Prevention

P260 Do not breathe dust/fume/gas/mist/vapors/spray
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well ventilated area
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

Response

P301 + P330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse or wash skin with soap and water (or shower).
P304 + P340 IF 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.
P310 Immediately call POISON CONTROL CENTER or doctor.
P333 + P313 If skin irritation or rash occurs: Get medical attention
P362 + P364 Take off contaminated clothing and wash it before reuse or discard
P391 Collect spillage

Storage

WEST SYSTEM® 206 Slow Hardener

P403 + P233 Store in a well-ventilated area. Keep container tightly closed.

P405 Store locked up.

Disposal

P501 Dispose of contents and container according to local, state, national and International regulations

Other Hazards

None known.

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Polyoxypropylenediamine	9046-10-0	30-60
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	10-30
Tetraethylenepentamine	112-57-2	10-30
Diethylenetriamine	111-40-0	7-13
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	5-10
Triethylenetetramine	112-24-3	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: 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 CENTER or doctor. NOTES TO PHYSICIAN (preferably an ophthalmologist): Chemical eye burns may require extended irrigation.

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 CENTER or doctor.

FIRST AID FOR INHALATION:..... SYMPTOMS: Can cause respiratory irritation, shortness of breath, cough and asthma-like conditions. Exposure to aerosol/mist/fumes/vapors from sprayed or heated product can cause serious health effects and can be fatal. RESPONSE: Remove to fresh air if effects occur and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. NOTES TO PHYSICIAN: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons who experienced significant exposure should be observed for 24-48 hours for signs of respiratory distress.

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 CENTER or doctor. NOTES TO PHYSICIAN: Although product does not meet criteria for aspiration toxicity, vomitus may cause lung injury. Consider endotracheal/esophageal control if lavage is done.

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: oxides of nitrogen, carbon monoxide, carbon dioxide, volatile amines, ammonia, nitric acid and 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 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. 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.

WEST SYSTEM® 206 Slow Hardener

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) / 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.

HANDLING PRECAUTIONS: DO NOT spray apply or heat this product. Use only outdoors or with adequate ventilation. If ventilation cannot be made adequate, refer to respiratory protection in Section 8. Do not breathe vapors or mists from heated material. Do not breathe concentrated vapors. Avoid 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
Polyoxypropylenediamine	9046-10-0	No data available
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	No data available
Tetraethylenepentamine	112-57-2	AIHA WEEL: 1 ppm; 5 mg/kg; SKIN
Diethylenetriamine	111-40-0	1 ppm TWA ACHIH, (SKIN)
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	No data available
Triethylenetetramine	112-24-3	AIHA WEEL: 1 ppm ; 6 mg/m3; SKIN

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Liquid.
COLOR: Colorless
ODOR: Ammonia-like
ODOR THRESHOLD: No data available
pH: 11.0
MELTING POINT / FREEZING POINT No data.
BOILING POINT (760mm/Hg): > 400°F (204°C) estimated based on similar product.
FLASH POINT: > 200°F (93°C) estimated based on similar product.
AUTO IGNITION TEMPERATURE No data.
LOWER EXPLOSIVE LIMIT (LEL) No data.
UPPER EXPLOSIVE LIMIT (UEL) No data.
VAPOR PRESSURE < 1 mmHg @ 20°C (estimated based on ingredient data).
SPECIFIC GRAVITY/DENSITY (water = 1) 1.01
BULK DENSITY 8.45 lbs./gal. (1.01 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: 65.6 (mm²/s @ 40°C)
DECOMPOSITION TEMPERATURE: No data available.

WEST SYSTEM® 206 Slow Hardener

% 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.

<u>Resin/Hardener</u>	<u>VOC Content</u>	
	<u>(g/L)</u>	<u>(lb/gal)</u>
105 / 206	9.59	0.08

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). 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, ethylenediamine, ammonia, nitric acid, nitrosamines.

11. TOXICOLOGICAL INFORMATION

<u>Ingredient Name</u>	<u>CAS#</u>	<u>LD₅₀ Oral</u>	<u>LD₅₀ Dermal</u>	<u>LC₅₀ Inhalation</u>
Polyoxypropylenediamine	9046-10-0	2855 mg/kg	2980 mg/kg	>0.74 mg/L 8h mist
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	ATPE (500 mg/kg)	ATPE (1100 mg/kg)	No data available
Tetraethylenepentamine	112-57-2	1600 mg/kg	1260 mg/kg	No data available
Diethylenetriamine	111-40-0	1620 mg/kg	1090 mg/kg	¹ 0.07 – 0.3 mg/L 4hr aerosol/mist
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	No data available	No data available	No data available
Triethylenetetramine	112-24-3	1716.2 mg/kg	805 mg/kg	No data available

¹ LC₅₀ data has been generated for this substance by subjecting rats to an airborne aerosol/mist atmosphere in a test chamber. It has not been determined that this data directly correlates to an inherent hazard of this product as would be expected under normal, foreseeable or anticipated conditions of use.

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 cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat.

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

Inhalation: Category 5. May be harmful if inhaled.

SKIN CORROSION / IRRITATION: Category 1B. Causes severe skin burns. Effects may be immediate. May cause persistent irritation or dermatitis.

SERIOUS EYE DAMAGE / IRRITATION: Category 1. Causes serious eye damage. May cause blurred vision. May cause corneal damage resulting in vision impairment or even blindness.

RESPIRATORY SENSITIZATION: Not classified. Based on available data does not meet classification criteria.

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

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.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): STOT SE Category 3. May cause irritation to the upper respiratory tract.

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.

WEST SYSTEM® 206 Slow Hardener

OTHER HEALTH HAZARD INFORMATION:..... This product contains a component (diethylenetriamine) that is highly toxic by inhalation when aerosolized due to spraying or when a mist is formed due to heating. It is advised that exposure not occur to product that is sprayed or heated. While this product does not meet the classification for a respiratory sensitizer, components of this product can cause aggravation of existing respiratory conditions, such as asthma.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY:..... Category 3. No specific test data available for the mixture. Calculated Estimate. Harmful to aquatic life.

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

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
Polyoxypropylenediamine	9046-10-0	Acute Aquatic Cat. 3; Chronic Aquatic Cat. 2
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	Not classified
Tetraethylenepentamine	112-57-2	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2
Diethylenetriamine	111-40-0	Not classified
Triethylenetetramine, reaction products with propylene oxide	26950-63-0	Not classified
Triethylenetetramine	112-24-3	Chronic Aquatic Cat. 3

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:..... Polyoxypropylenediamine
HAZARD CLASS:..... Class 8
PACKING GROUP:..... PG II
MARINE POLLUTANT:..... No

CANADA TDG

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

IMDG

UN NUMBER:..... UN 2735
SHIPPING NAME:..... Polyamines, liquid, corrosive, n.o.s.
TECHNICAL SHIPPING NAME:..... Polyoxypropylenediamine
HAZARD CLASS:..... Class 8
PACKING GROUP:..... PG II
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:..... Polyoxypropylenediamine
HAZARD CLASS:..... Class 8
PACKING GROUP:..... PG II

WEST SYSTEM® 206 Slow Hardener

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/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	CAS# 26950-63-0 not on this inventory list.

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 Immediate, Delayed.
- Subject to Section 313 No data available.

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	STATE CODE
Propylene oxide 75-56-9 < 0.0035%	1 ¹ CA
Diethylenetriamine 111-40-0	PA
Triethylenetetramine 112-14-3	PA
Tetraethylenepentamine 112-57-2	PA

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

16. OTHER INFORMATION

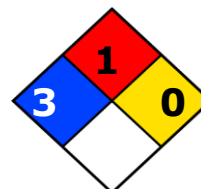
REASON FOR ISSUE:..... Updates to sections 3, 8, 11 & 15.
 PREPARED BY:..... Gougeon Brothers, Inc.
 SDS CONTACT:..... safety@gougeon.com
 TITLE:..... Health, Safety & Environmental Manager
 APPROVAL DATE:..... January 15, 2019
 SUPERSEDES DATE:..... September 7, 2016
 SDS VERSION:..... 206-2019a

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

WEST SYSTEM® 206 Slow Hardener

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