

MATERIAL SAFETY DATA SHEET

West System Inc.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WEST SYSTEM® 205 Fast Hardener®
 PRODUCT CODE: 205
 CHEMICAL FAMILY: Amine.
 CHEMICAL NAME: Modified aliphatic polyamine.
 FORMULA: Not applicable.

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

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

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS Hazard Rating: Health - 3 Flammability - 1 Physical Hazards - 0

DANGER! Corrosive. Skin sensitizer. Moderate to severe skin, eye and respiratory tract irritant. May cause allergic reactions. Amber colored liquid with ammonia odor.

PRIMARY ROUTE(S) OF ENTRY: Skin contact, eye contact, inhalation.

POTENTIAL HEALTH EFFECTS:

ACUTE INHALATION: May cause respiratory tract irritation. Coughing and chest pain may result.

CHRONIC INHALATION: May cause respiratory tract irritation, coughing, sore throat, shortness of breath or chest pain.

ACUTE SKIN CONTACT: May cause strong irritation, redness. Possible mild corrosion.

CHRONIC SKIN CONTACT: Prolonged or repeated contact may cause an allergic reaction and possible sensitization in susceptible individuals. Large dose skin contact may result in material being absorbed in harmful amounts.

EYE CONTACT: Moderate to severe irritation with possible tissue damage. Concentrated vapors can be absorbed in eye tissue and cause eye injury. Contact causes discomfort and possible corneal injury or conjunctivitis.

INGESTION: Single dose oral toxicity is moderate. May cause gastrointestinal tract irritation and pain. Aspiration hazard.

SYMPTOMS OF OVEREXPOSURE: Respiratory tract irritation. Skin irritation and redness. Possible allergic reaction seen as hives and rash. Eye irritation. Possible liver and kidney disorders upon long term skin absorption overexposures.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Chronic respiratory disease, asthma. Eye disease. Skin disorders and allergies.

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION
Reaction products of TETA with Phenol/Formaldehyde	32610-77-8	> 25%
Polyethylenepolyamine	68131-73-7	< 25%
Triethylenetetramine (TETA)	112-24-3	< 10%
Hydroxybenzene	108-95-2	< 10%
Reaction Products of TETA and propylene oxide	26950-63-0	< 10%
Tetraethylenepentamine (TEPA)	112-57-2	< 10%

4. FIRST AID MEASURES

FIRST AID FOR EYES: Immediately flush with water for at least 15 minutes. Get prompt medical attention.

FIRST AID FOR SKIN: Remove contaminated clothing. Immediately wash skin with soap and water. Do not apply greases or ointments. Get medical attention if severe exposure.

FIRST AID FOR INHALATION:..... Move to fresh air and consult physician if effects occur.

FIRST AID FOR INGESTION:..... Give conscious person at least 2 glasses of water. Do not induce vomiting. Aspiration hazard. If vomiting should occur spontaneously, keep airway clear. Get medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT:..... >270°F (PMCC)

EXTINGUISHING MEDIA:..... Dry chemical, alcohol foam, carbon dioxide (CO₂), dry sand, limestone powder.

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, nitrosamines. When mixed with sawdust, wood chips, or other cellulosic material, spontaneous combustion can occur under certain conditions. If hardener is spilled into or mixed with sawdust, 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

SPILL OR LEAK PROCEDURES:..... Stop leak without additional risk. Wear proper personal protective equipment. Dike and contain spill. Ventilate area. Large spill - dike and pump into appropriate container for recovery. Small spill - recover or use inert, non-combustible absorbent material (e.g., sand, clay) and shovel into suitable container. Do not use sawdust, wood chips or other cellulosic materials to absorb the spill, as the possibility for spontaneous combustion exists. Wash spill residue with warm, soapy water if necessary.

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.

HANDLING PRECAUTIONS:..... Use with adequate ventilation. Do not breathe vapors or mists from heated material. Avoid exposure to concentrated vapors. Avoid skin 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

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/VENTILATION GUIDELINES:..... Use with adequate general and local exhaust ventilation to meet exposure limits. In poorly ventilated areas, use a NIOSH/MSHA approved respirator with an organic vapor cartridge.

Note: West System, Inc. has conducted an air sampling study using this product or similarly formulated products. The results indicate that the components sampled for (phenol, formaldehyde and amines) were either so low that they were not detected at all or they were well below OSHA's permissible exposure levels.

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:..... Not established for product as whole. Refer to OSHA's Permissible Exposure Level (PEL) or the ACGIH Guidelines for information on specific ingredients.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM..... Liquid.
 COLOR..... Amber.
 ODOR..... Ammonia-like.
 BOILING POINT..... > 440°F.
 MELTING POINT/FREEZE POINT..... Approximately 23°F.
 pH..... Alkaline.
 SOLUBILITY IN WATER..... Appreciable.
 SPECIFIC GRAVITY..... 1.05

BULK DENSITY 8.85 pounds/gallon.
 VAPOR PRESSURE < 1 mmHg @ 20°C.
 VAPOR DENSITY Heavier than air.
 VISCOSITY 1,000 cPs
 % VOLATILE BY WEIGHT ASTM 2369-07 was used to determine the Volatile Matter Content of mixed epoxy resin and hardener. 105 Resin and 205 Hardener, mixed together at 5:1 by weight, has a density of 1137 g/L (9.49 lbs/gal). The combined VOC content for 105/205 is 7.91 g/L (0.07 lbs/gal).

10. STABILITY AND REACTIVITY

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITIES: Avoid excessive heat. Avoid acids, oxidizing materials, halogenated organic compounds (e.g., methylene chloride). External heating or self-heating could result in rapid temperature increase and serious hazard. If such a reaction were to take place in a waste drum, the drum could expand and rupture violently.

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, nitrosamines.

11. TOXICOLOGICAL INFORMATION

No specific oral, inhalation or dermal toxicology data is known for this product.

Oral: Expected to be moderately toxic.

Inhalation: Expected to be moderately toxic.

Dermal: Expected to be moderately toxic.

Absorption of phenolic solutions through the skin may be very rapid and can cause death. Lesser exposures can cause damage to the kidney, liver, pancreas and spleen; and cause edema of the lungs. Chronic exposures can cause death from liver and kidney damage.

CARCINOGENICITY:

NTP No.

IARC No.

OSHA No.

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.

12. ECOLOGICAL INFORMATION

Wastes from this product may present long term environmental hazards. Do not allow into sewers, on the ground or in any body of water.

Hydroxybenzene (phenol) (CAS # 108-95-2) biodegradability = 99.5% at 7 days.

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

DOT

SHIPPING NAME: Polyamines, liquid, corrosive, n.o.s.

TECHNICAL SHIPPING NAME: (Triethylene tetramine)

D.O.T. HAZARD CLASS: Class 8

U.N./N.A. NUMBER: UN 2735

PACKING GROUP: PG III

IATA

SHIPPING NAME: Polyamines, liquid, corrosive, n.o.s.

TECHNICAL SHIPPING NAME: (Triethylene tetramine)

HAZARD CLASS: Class 8

U.N. NUMBER: UN 2735

PACKING GROUP: PG III

15. REGULATORY INFORMATION

OSHA STATUS: Corrosive; possible sensitizer.

TSCA STATUS:..... All components listed on TSCA inventory or otherwise comply with TSCA requirements.

Canada WHIMIS Classification: D2A, D2B, E

SARA TITLE III:

SECTION 313 TOXIC CHEMICALS:..... 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.

STATE REGULATORY INFORMATION:

The following chemicals are specifically listed or otherwise regulated by individual states. For details on your regulatory requirements you should contact the appropriate agency in your state.

<u>COMPONENT NAME</u> <u>/CAS NUMBER</u>	<u>CONCENTRATION</u>	<u>STATE CODE</u>
Tetraethylenepentamine 112-57-2	<10%	MA, NJ, PA
Tetraethylenetriamine 112-24-3	<10%	MA, NJ, PA
Phenol 108-95-2	<10%	NJ, RI, PA, MA, IL

16. OTHER INFORMATION

REASON FOR ISSUE:..... Changes made in Sections 5, 10, 14 & 15.
PREPARED BY:..... G. M. House
APPROVED BY:..... G. M. House
TITLE:..... Health, Safety & Environmental Manager
APPROVAL DATE:..... February 10, 2011
SUPERSEDES DATE:..... January 3, 2008
MSDS NUMBER:..... 205-11a

Note: The Hazardous Material Indexing System (HMIS), cited in the Emergency Overview of Section 3, uses the following index to assess hazard rating: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; and 4 = Severe.

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