

WEST SYSTEM® 205 Fast Hardener

Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Date of issue: 06/01/2015

Revision date: 08/15/2016

Version: 205-2016a

SECTION 1: Identification

Identification

Product name : WEST SYSTEM® 205 Fast Hardener
Product code : 205, 205-A, 205-B, 205-C, 205-E, C 205-A, C 205-B, C 205-C, C 205-E

Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Curing agent for epoxy resin.

Details of the supplier of the safety data sheet

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

Emergency telephone number

Emergency number : CHEMTREC 1 (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

Acute Tox. 4 (Oral)
Acute Tox. 4 (Dermal)
Skin Corr. 1C
Skin Sens. 1
Muta. 2
STOT RE 2
Aquatic Acute 2
Aquatic Chronic 2

Label elements

Hazard pictograms (GHS)



Signal word (GHS)

Danger

Hazard statements (GHS)

Harmful if swallowed or in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life. Toxic to aquatic life with long lasting effects

Precautionary statements (GHS)

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume, gas, mist, vapours, spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves, protective clothing, eye protection, face protection. If swallowed: rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Immediately call a poison center/doctor. Collect spillage. Store locked up. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Other hazards

No additional information available

Unknown acute toxicity

No additional information available

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SECTION 3: Composition/information on ingredients

Substance

Not applicable

Mixtures

Name	Product identifier	%
Formaldehyde, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine and phenol	(CAS No) 32610-77-8	40 - 70
Amines, polyethylenepoly-	(CAS No) 68131-73-7	10 - 30
Triethylenetetramine	(CAS No) 112-24-3	5 - 20
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with methyloxirane	(CAS No) 26950-63-0	1 - 10
Tetraethylenepentamine	(CAS No) 112-57-2	1 - 10
Phenol	(CAS No) 108-95-2	1 - 10

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. Refer to Section 15 for additional information regarding this CBI claim.

SECTION 4: First aid measures

Description of first aid measures

- First-aid measures after inhalation** : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after skin contact** : IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
- First-aid measures after ingestion** : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation** : May cause respiratory tract irritation.
- Symptoms/injuries after skin contact** : Harmful in contact with skin. Causes severe burns. Symptoms may include redness, pain, blisters. Repeated exposure to this material can result in absorption through skin causing significant health hazard. May cause an allergic skin reaction.
- Symptoms/injuries after eye contact** : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. May cause burns.
- Symptoms/injuries after ingestion** : Harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause stomach distress, nausea or vomiting.

Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

Extinguishing media

- Suitable extinguishing media** : Foam. Carbon dioxide. Dry chemical. Sand. Limestone.
- Unsuitable extinguishing media** : Do not use a heavy water stream.

Special hazards arising from the substance or mixture

- Fire hazard** : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen, 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.
- Reactivity** : No dangerous reaction known under conditions of normal use.
- Advice for firefighters**
- Protection during firefighting** : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

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SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

For non-emergency personnel

No additional information available

For emergency responders

No additional information available

Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE). Do not absorb in sawdust, paper, cloth or other combustible absorbents.

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Do not swallow. Do not breathe vapours, mist. Handle and open container with care. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. 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.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place. Storage temperature : 40°F (4°C) - 90°F (32°C). Keep away from heat and direct sunlight.

SECTION 8: Exposure controls/personal protection

Control parameters

Formaldehyde, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine and phenol (32610-77-8)		
Not applicable		
Amines, polyethylenepoly- (68131-73-7)		
AIHA	WEEL TWA (ppm)	(refer to exposure limits for triethylenetetramine, tetraethylenepentamine)
Triethylenetetramine (112-24-3)		
AIHA	WEEL TWA (ppm)	1 ppm (skin)
AIHA	WEEL TWA (mg/m ³)	6 mg/m ³
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with methyloxirane (26950-63-0)		
Not applicable		
Tetraethylenepentamine (112-57-2)		
AIHA	WEEL TWA (ppm)	1 ppm
AIHA	WEEL TWA (mg/m ³)	5 mg/m ³
Phenol (108-95-2)		
ACGIH	ACGIH TWA (mg/m ³)	19 mg/m ³

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Phenol (108-95-2)		
ACGIH	ACGIH TWA (ppm)	5 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	19 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	5 ppm
NIOSH	NIOSH REL (TWA) (mg/m ³)	19 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	5 ppm
NIOSH	NIOSH REL (ceiling) (mg/m ³)	60 mg/m ³
NIOSH	NIOSH REL (ceiling) (ppm)	15,6 ppm

Exposure controls

- Appropriate engineering controls** : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
- Hand protection** : Wear chemically resistant protective gloves.
- Eye protection** : Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).
- Skin and body protection** : Wear suitable protective clothing.
- Respiratory protection** : In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Maintain levels below Community environmental protection thresholds.
- Other information** : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

- Physical state** : Liquid
- Appearance** : No data available
- Colour** : Amber
- Odour** : Ammonia
- Odour threshold** : No data available
- pH** : 10.3
- Melting point** : No data available
- Freezing point** : No data available
- Boiling point** : > 400 °F (204 °C)
- Flash point** : > 200 °F (93 °C) (estimated based on ingredient data)
- Relative evaporation rate (butylacetate=1)** : No data available
- Flammability (solid, gas)** : Not flammable
- Vapour pressure** : No data available
- Relative vapour density at 20 °C** : No data available
- Relative density** : 1.05
- Solubility** : No data available.
- Partition coefficient n-octanol/water** : No data available
- Auto-ignition temperature** : No data available
- Decomposition temperature** : No data available
- Viscosity, kinematic** : 952 mm²/s @ 104 °F (40 °C)
- Viscosity, dynamic** : No data available
- Explosive limits** : No data available
- Explosive properties** : No data available
- Oxidising properties** : No data available
- Other information**
- VOC content** : 7.91 g/L (0.07 lb/gal)
- Bulk density** : 8.85 lb/gal (1.06 kg/L)

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SECTION 10: Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal storage conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use. A mass of more than one pound of product plus an epoxy resin will cause irreversible polymerization with significant heat buildup and pressure.
Conditions to avoid	: Heat. Incompatible materials.
Incompatible materials	: Acids. oxidizing materials. Halogenated compounds. Bleach. Nitrites. Peroxides.
Hazardous decomposition products	: May include, and are not limited to: oxides of carbon, oxides of nitrogen, amines, ammonia, nitric acid, aldehydes, cyanides, nitrosamines, toxic fumes.

SECTION 11: Toxicological information

Information on toxicological effects

Amines, polyethylenepoly- (68131-73-7)	
LD50 oral rat	1716 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Triethylenetetramine (112-24-3)	
LD50 oral rat	1716 mg/kg
LD50 dermal rabbit	1465 mg/kg

1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with methyloxirane (26950-63-0)	
LD50 oral rat	> 2000 mg/kg (ATE)
LD50 dermal rabbit	> 2000 mg/kg (ATE)

Tetraethylenepentamine (112-57-2)	
LD50 oral rat	2140 - 3990 mg/kg
LD50 dermal rabbit	660 - 1260 mg/kg

Phenol (108-95-2)	
LD50 oral rat	317 mg/kg
LD50 dermal rabbit	630 mg/kg
LC50 inhalation rat	0.9 mg/l/8h

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Harmful in contact with skin.
Acute toxicity (inhalation)	: Not classified.
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Suspected of causing genetic defects.
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.

Phenol (108-95-2)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified.
STOT-single exposure	: Not classified.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified.

WEST SYSTEM® 205 Fast Hardener	
Viscosity, kinematic (calculated value) (40 °C)	952 mm ² /s @ 104 °F (40 °C)

Potential adverse human health effects and symptoms	: Harmful in contact with skin. Harmful if swallowed.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation.

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Symptoms/injuries after skin contact	: Harmful in contact with skin. Causes severe burns. Symptoms may include redness, pain, blisters. Repeated exposure to this material can result in absorption through skin causing significant health hazard. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. May cause burns.
Symptoms/injuries after ingestion	: Harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause stomach distress, nausea or vomiting.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.

Triethylenetetramine (112-24-3)	
LC50 fish 1	570 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [semi-static])
EC50 Daphnia 1	31.1 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	495 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

Tetraethylenepentamine (112-57-2)	
LC50 fish 1	420 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [static])
EC50 Daphnia 1	24.1 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Phenol (108-95-2)	
LC50 fish 1	11.9 - 50.5 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	4.24 - 10.7 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	20.5 - 25.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	10.2 - 15.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and degradability

WEST SYSTEM® 205 Fast Hardener	
Persistence and degradability	Not established.

Bioaccumulative potential

WEST SYSTEM® 205 Fast Hardener	
Bioaccumulative potential	Not established.

Triethylenetetramine (112-24-3)	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water	-1.4

Tetraethylenepentamine (112-57-2)	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water	< 1

Phenol (108-95-2)	
BCF fish 1	(no significant bioaccumulation)
Partition coefficient n-octanol/water	1.5

Mobility in soil

No additional information available

Other adverse effects

Effect on the global warming : No known effects from this product.

Name	Product identifier	Ecotoxicity Classification Information
Formaldehyde, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine and phenol	(CAS No) 32610-77-8	Aquatic Chronic Cat. 3
Amines, polyethylenepoly-	(CAS No) 68131-73-7	Aquatic Acute Cat. 1; Aquatic Chronic Cat. 1
Triethylenetetramine	(CAS No) 112-24-3	Aquatic Chronic Cat. 3
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with methyloxirane	(CAS No) 26950-63-0	Aquatic Chronic Cat. 3
Tetraethylenepentamine	(CAS No) 112-57-2	Aquatic Acute Cat. 2; Aquatic Chronic Cat. 2

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Name	Product identifier	Ecotoxicity Classification Information
Phenol	(CAS No) 108-95-2	Aquatic Acute Cat. 3; Aquatic Chronic Cat. 2

SECTION 13: Disposal considerations

Waste treatment methods

Product/Packaging disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

In accordance with DOT and TDG

UN-No.(DOT/TDG) : UN2735
Proper Shipping Name (DOT/TDG) : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine)
Class (DOT/TDG) : 8
Packing group (DOT/TDG) : III
Marine pollutant : No

Transport by sea

In accordance with IMDG

UN-No. (IMDG) : 2735
Proper Shipping Name (IMDG) : POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Triethylenetetramine)
Class (IMDG) : 8
Packing group (IMDG) : III
EmS Number : F-A, S-B
Marine pollutant : Yes

Transport by air

In accordance with IATA

UN-No. (IATA) : 2735
Proper Shipping Name (IATA) : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine)
Class (IATA) : 8
Packing group (IATA) : III
Marine pollutant : Yes

SECTION 15: Regulatory information

15.1. Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

Formaldehyde, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine and phenol (32610-77-8)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).
Amines, polyethylenepoly- (68131-73-7)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with methyloxirane (26950-63-0)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).

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Phenol (108-95-2)	
Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 - 10000 lb
SARA Section 313 - Emission Reporting	1 %

Canada WHMIS Confidential Business Information (CBI): The HMIRA number issued for this CBI claim is #10267. The date of filing is 2016-08-08.

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

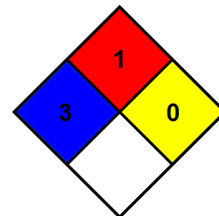
Triethylenetetramine (112-24-3)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Tetraethylenepentamine (112-57-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Phenol (108-95-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Issue date : 06/1/2015
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Version : 205-2016a
Other information : None.
NFPA health hazard : 3
NFPA fire hazard : 1
NFPA reactivity : 0



HMIS III Rating
Health : 3
Flammability : 1
Physical : 0

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