

WESSEX

RESINS+ADHESIVES

SAFETY DATA SHEET

WEST SYSTEM G/flex 650 Resin

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name WEST SYSTEM G/flex 650 Resin

Product number 650A

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

Identified uses Resin.

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Wessex Resins & Adhesives
Cupernham House
Cupernham Lane
Romsey
Hampshire
S051 7LF
Tel: +44(0)1794 521111
Fax: +44(0)1794 521271
info@wessex-resins.com

1.4. Emergency telephone number

Emergency telephone +44(0)207 858 1228

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317

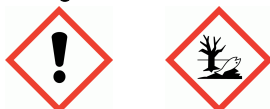
Environmental hazards Aquatic Chronic 2 - H411

Human health The liquid is irritating to eyes and skin. The product contains a sensitising substance. See Section 11 for additional information on health hazards.

Environmental The product contains a substance which may have hazardous effects on the environment.

2.2. Label elements

Pictogram



WEST SYSTEM G/flex 650 Resin

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	P273 Avoid release to the environment. P280 Wear protective gloves, eye and face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 Dispose of contents/ container in accordance with national regulations.
Contains	bis-[4-(2,3-epoxipropoxy)phenyl]propane, BISPHENOL F EPOXY RESIN
Supplementary precautionary statements	P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P337+P313 If eye irritation persists: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

bis-[4-(2,3-epoxipropoxy)phenyl]propane	60-100%
CAS number: 1675-54-3	EC number: 216-823-5
	REACH registration number: 01-2119456619-26-XXXX
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Skin Sens. 1 - H317	
Aquatic Chronic 2 - H411	
BISPHENOL F EPOXY RESIN	10-30%
CAS number: 9003-36-5	EC number: 500-006-8
	REACH registration number: 01-2119454392-40-0000
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Skin Sens. 1 - H317	
Aquatic Chronic 2 - H411	

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

WEST SYSTEM G/flex 650 Resin

General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin contact	It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	May cause discomfort if swallowed.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact	Irritating to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
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WEST SYSTEM G/flex 650 Resin

Hazardous combustion products

Thermal decomposition or combustion products may include the following substances:
Harmful gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting

Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions

Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small Spillages: Collect spillage. Large Spillages: Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

WEST SYSTEM G/flex 650 Resin

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from heat, sparks and open flame. Protect from light.

Storage class

Miscellaneous hazardous material storage.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments

No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended. Wear protective gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.13 mm. The selected gloves should have a breakthrough time of at least 0.5 hours.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Combination filter, type A2/P2.

Environmental exposure controls

Avoid discharge to the aquatic environment. Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

WEST SYSTEM G/flex 650 Resin

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Light (or pale). Yellow.
Odour	Mild.
Odour threshold	Not determined.
pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	>200°C @ 760 mm Hg
Flash point	>93°C Closed cup.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	<1 mm Hg @ °C
Vapour density	>1
Relative density	1.17 @ 25°C
Bulk density	Not determined.
Solubility(ies)	Slightly soluble in water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	12,000 mPa s @ 25°C
Explosive properties	Not determined.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	Not known.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Stable under the prescribed storage conditions.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None known.
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10.4. Conditions to avoid

Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
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10.5. Incompatible materials

WEST SYSTEM G/flex 650 Resin

Materials to avoid Strong acids. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity

None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Prolonged inhalation of high concentrations may damage respiratory system.

WEST SYSTEM G/flex 650 Resin

Ingestion	May cause sensitisation or allergic reactions in sensitive individuals. May cause irritation.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact	Irritating to eyes.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

Toxicological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Acute toxicity - oral

Notes (oral LD₅₀) > 2000 mg/kg Rat REACH dossier information. Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) > 2000 mg/kg Rat REACH dossier information. Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Dose: 0.5ml, 4 hr, Rabbit Erythema/eschar score: Very slight erythema - barely perceptible (1). Oedema score: Very slight oedema - barely perceptible (1). REACH dossier information. Irritating to skin.

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Sensitising. REACH dossier information. May cause sensitisation by skin contact.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information. This substance has no evidence of mutagenic properties.

Carcinogenicity

Carcinogenicity NOAEL 100 mg/kg, Oral, Rat REACH dossier information. There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOAEL 20 mg/kg/day, Oral, Rat P REACH dossier information. Based on available data the classification criteria are not met.

Reproductive toxicity - development Maternal toxicity: - NOAEL: 180 mg/kg/day, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 50 mg/kg, Oral, Rat REACH dossier information. Not classified as a specific target organ toxicant after repeated exposure.

BISPHENOL F EPOXY RESIN

Toxicological effects No information available.

WEST SYSTEM G/flex 650 Resin

SECTION 12: Ecological Information

Ecotoxicity Dangerous for the environment if discharged into watercourses.

12.1. Toxicity

Toxicity Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 1.2 mg/l, Oncorhynchus mykiss (Rainbow trout) REACH dossier information.
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 2.8 mg/l, Daphnia magna REACH dossier information.
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 9.4 mg/l, Selenastrum capricornutum REACH dossier information.
Acute toxicity - microorganisms	IC ₅₀ , 3 hours >: 100 mg/l, Activated sludge REACH dossier information.

BISPHENOL F EPOXY RESIN

Toxicity There are no data on the ecotoxicity of this product.

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Ecological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Phototransformation	Water - DT ₅₀ : 6.44 hours Estimated value. REACH dossier information.
Biodegradation	Water - Degradation (%) 5: 28 days REACH dossier information. No biodegradation observed under test conditions.

BISPHENOL F EPOXY RESIN

Biodegradation Not determined.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

Ecological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Bioaccumulative potential	The product is not bioaccumulating. BCF: ~ 31, Estimated value. REACH dossier information.
Partition coefficient	log Pow: ≥ 2.918 REACH dossier information.

WEST SYSTEM G/flex 650 Resin

BISPHENOL F EPOXY RESIN

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

Mobility No information available.

Ecological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Mobility Slightly soluble in water.

Adsorption/desorption coefficient Water - log Koc: ~ 2.65 @ 20°C Estimated value. REACH dossier information.

Surface tension 58.7 mN/m @ 20°C REACH dossier information.

BISPHENOL F EPOXY RESIN

Mobility No information available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

BISPHENOL F EPOXY RESIN

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

BISPHENOL F EPOXY RESIN

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

WEST SYSTEM G/flex 650 Resin

Disposal methods Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible. Do not discharge into drains or watercourses or onto the ground.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS bis-[4-(2,3-epoxipropoxi)phenyl]propane, BISPHENOL F EPOXY RESIN)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS bis-[4-(2,3-epoxipropoxi)phenyl]propane, BISPHENOL F EPOXY RESIN)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS bis-[4-(2,3-epoxipropoxi)phenyl]propane, BISPHENOL F EPOXY RESIN)
Proper shipping name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS bis-[4-(2,3-epoxipropoxi)phenyl]propane, BISPHENOL F EPOXY RESIN)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III
ICAO packing group	III

14.5. Environmental hazards

WEST SYSTEM G/flex 650 Resin

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS	F-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(-)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

WEST SYSTEM G/flex 650 Resin

Abbreviations and acronyms used in the safety data sheet	<p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>IATA: International Air Transport Association.</p> <p>ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>CAS: Chemical Abstracts Service.</p> <p>ATE: Acute Toxicity Estimate.</p> <p>LC₅₀: Lethal Concentration to 50 % of a test population.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p>
Classification abbreviations and acronyms	<p>Eye Irrit. = Eye irritation</p> <p>Skin Irrit. = Skin irritation</p> <p>Skin Sens. = Skin sensitisation</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	<p>Skin Irrit. 2 - H315: Eye Irrit. 2 - H319: Skin Sens. 1 - H317: : Expert judgement. Aquatic Chronic 2 - H411: : Expert judgement.</p>
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision date	15/11/2018
Revision	6
Supersedes date	15/06/2018
SDS number	10595
Hazard statements in full	<p>H315 Causes skin irritation.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H319 Causes serious eye irritation.</p> <p>H411 Toxic to aquatic life with long lasting effects.</p>

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

WESSEX

RESINS+ADHESIVES

SAFETY DATA SHEET

WEST SYSTEM G/flex 650 Hardener

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name WEST SYSTEM G/flex 650 Hardener

Product number 650B

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

Identified uses Hardener.

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Wessex Resins & Adhesives
Cupernham House
Cupernham Lane
Romsey
Hampshire
S051 7LF
Tel: +44(0)1794 521111
Fax: +44(0)1794 521271
info@wessex-resins.com

1.4. Emergency telephone number

Emergency telephone +44(0)207 858 1228

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT RE 2 - H373

Environmental hazards Aquatic Chronic 3 - H412

Human health The product contains a sensitising substance. See Section 11 for additional information on health hazards.

Environmental The product is not expected to be hazardous to the environment.

2.2. Label elements

Hazard pictograms



WEST SYSTEM G/flex 650 Hardener

Signal word	Danger
Hazard statements	H315 Causes skin irritation. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H373 May cause damage to organs through prolonged or repeated exposure. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P102 Keep out of reach of children. P280 Wear protective gloves, eye and face protection. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. 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 a POISON CENTER/ doctor. P501 Dispose of contents/ container in accordance with national regulations.
Contains	Butadiene-acrylonitrile co-polymer, Triethylenetetramine, m-phenylenebis(methylamine), Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA, 2-piperazin-1-ylethylamine, tetraethylenepentamine, Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled
Supplementary precautionary statements	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Butadiene-acrylonitrile co-polymer	30-60%
CAS number: 68683-29-4	EC number: 614-706-7
Classification Skin Sens. 1 - H317	
Triethylenetetramine	5-10%
CAS number: 112-24-3	EC number: 203-950-6
	REACH registration number: 01-2119487919-13-0000
Classification Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	

WEST SYSTEM G/flex 650 Hardener

m-phenylenebis(methylamine) 5-10%		
CAS number: 1477-55-0	EC number: 216-032-5	REACH registration number: 01-2119480150-50-XXXX
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1B - H317 Aquatic Chronic 3 - H412		
Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA 1-5%		
CAS number: 1101788-77-5		
Classification Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317		
2,4,6-tris(dimethylaminomethyl)phenol 1-5%		
CAS number: 90-72-2	EC number: 202-013-9	REACH registration number: 01-2119560597-27-XXXX
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319		
2-piperazin-1-ylethylamine 1-5%		
CAS number: 140-31-8	EC number: 205-411-0	REACH registration number: 01-2119471486-30-0003
Classification Acute Tox. 4 - H302 Acute Tox. 3 - H311 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361 STOT RE 1 - H372 Aquatic Chronic 3 - H412		

WEST SYSTEM G/flex 650 Hardener

tetraethylenepentamine		1-5%
CAS number: 112-57-2	EC number: 203-986-2	REACH registration number: 01-2119487290-37-0000
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411		
Cashew (Anacardium occidentale) Nutshell Extract, Decarboxylated, Distilled		<1%
CAS number: 8007-24-7	EC number: 700-991-6	REACH registration number: 01-2119502450-57-0000
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317		

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin contact	It is important to remove the substance from the skin immediately. Take off immediately all contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

WEST SYSTEM G/flex 650 Hardener

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Symptoms following overexposure may include the following: Pain or irritation. Redness.

Eye contact Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

WEST SYSTEM G/flex 650 Hardener

Special protective equipment for firefighters Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.

6.2. Environmental precautions

Environmental precautions The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Approach the spillage from upwind. Small Spillages: Absorb spillage with non-combustible, absorbent material. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. This product is corrosive. Immediate first aid is imperative. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

WEST SYSTEM G/flex 650 Hardener

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended. Wear protective gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.13 mm. The selected gloves should have a breakthrough time of at least 0.5 hours.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Combination filter, type A2/P2.

Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

WEST SYSTEM G/flex 650 Hardener

Appearance	Viscous liquid.
Colour	Amber.
Odour	Ammonia.
Odour threshold	Not determined.
pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	>250°C @ 760 mm Hg
Flash point	>93°C Closed cup.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	<1 mm Hg @ °C
Vapour density	>1
Relative density	0.97 @ 25°C
Bulk density	Not determined.
Solubility(ies)	Slightly soluble in water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	21,000 mPa s @ 25°C
Explosive properties	Not determined.
Oxidising properties	Does not meet the criteria for classification as oxidising.
<u>9.2. Other information</u>	
Other information	Not known.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under the prescribed storage conditions.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None known.

10.4. Conditions to avoid

Conditions to avoid There are no known conditions that are likely to result in a hazardous situation.

10.5. Incompatible materials

WEST SYSTEM G/flex 650 Hardener

Materials to avoid Strong acids. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 4,115.23

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

ATE dermal (mg/kg) 9,341.41

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

ATE inhalation (dusts/mists mg/l) 25.52

Skin corrosion/irritation

Animal data Skin Irrit. 2 - H315 Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Corrosivity to eyes is assumed.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335 May cause respiratory irritation.

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure STOT RE 2 - H373 May cause damage to organs through prolonged or repeated exposure.

WEST SYSTEM G/flex 650 Hardener

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.

Ingestion

May cause sensitisation or allergic reactions in sensitive individuals. May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

Skin contact

May cause skin sensitisation or allergic reactions in sensitive individuals. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.

Eye contact

Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target organs

Respiratory system, lungs

Medical considerations

Skin disorders and allergies.

Toxicological information on ingredients.

Butadiene-acrylonitrile co-polymer

Toxicological effects No information available.

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Toxicological effects No information available.

2,4,6-tris(dimethylaminomethyl)phenol

Acute toxicity - oral

Notes (oral LD₅₀) Harmful if swallowed.

ATE oral (mg/kg) 500.0

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility - NOAEL > 15 mg/kg/day, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL > 15 mg/kg, Oral, Rat REACH dossier information. Not classified as a specific target organ toxicant after repeated exposure.

2-piperazin-1-ylethylamine

WEST SYSTEM G/flex 650 Hardener

Acute toxicity - oral

Notes (oral LD₅₀) Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 866.0

Species Rabbit

Notes (dermal LD₅₀) REACH dossier information. Harmful in contact with skin.

ATE dermal (mg/kg) 866.0

Skin corrosion/irritation

Animal data Dose: , 20 min, Rabbit Oedema score: Severe oedema - raised more than 1 mm and extending beyond area of exposure (4). REACH dossier information. Corrosive to skin.

Serious eye damage/irritation

Serious eye damage/irritation Corrosive to skin. Corrosivity to eyes is assumed. No testing is needed.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Sensitising. REACH dossier information. May cause sensitisation by skin contact.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Screening: - NOAEC 8000 mg/l, Oral, Rat P REACH dossier information.

Reproductive toxicity - development Developmental toxicity: - NOAEC: 8000 mg/l, Oral, Rat REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 2000 mg/l/6hr/day, Oral, Rat REACH dossier information.

SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met.

Ecological information on ingredients.

Butadiene-acrylonitrile co-polymer

Toxicity There are no data on the ecotoxicity of this product.

WEST SYSTEM G/flex 650 Hardener

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Toxicity There are no data on the ecotoxicity of this product.

2,4,6-tris(dimethylaminomethyl)phenol

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: < 240 mg/l, Freshwater fish
REACH dossier information.

Acute toxicity - aquatic invertebrates LC₅₀, 96 hours: 718 mg/l, Marinewater invertebrates
REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: 84 mg/l, Scenedesmus subspicatus
REACH dossier information.

2-piperazin-1-ylethylamine

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 2190 mg/l, Pimephales promelas (Fat-head Minnow)
REACH dossier information.

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 58 mg/l, Daphnia magna
REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: > 1000 mg/l, Selenastrum capricornutum
REACH dossier information.

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients.

Butadiene-acrylonitrile co-polymer

Persistence and degradability There are no data on the degradability of this product.

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Persistence and degradability There are no data on the degradability of this product.

2,4,6-tris(dimethylaminomethyl)phenol

Biodegradation Water - Degradation (%) 4: 28 days
REACH dossier information.
The product is not readily biodegradable.

2-piperazin-1-ylethylamine

Phototransformation Water - DT₅₀ : 1.8 hours
REACH dossier information.

Biodegradation Water - Degradation (%) 0: 28 days
REACH dossier information.
No biodegradation observed under test conditions.

12.3. Bioaccumulative potential

WEST SYSTEM G/flex 650 Hardener

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

Ecological information on ingredients.

Butadiene-acrylonitrile co-polymer

Bioaccumulative potential No data available on bioaccumulation.

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Bioaccumulative potential No data available on bioaccumulation.

2,4,6-tris(dimethylaminomethyl)phenol

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Pow: ≥ 0.219 REACH dossier information.

2-piperazin-1-ylethylamine

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Pow: -1.48 REACH dossier information.

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

Butadiene-acrylonitrile co-polymer

Mobility No information available.

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Mobility No information available.

2,4,6-tris(dimethylaminomethyl)phenol

Mobility The product is water-soluble and may spread in water systems.

2-piperazin-1-ylethylamine

Mobility The product is miscible with water and may spread in water systems.

Henry's law constant $< 0 \text{ atm m}^3/\text{mol @ } 20^\circ\text{C}$ Estimated value. REACH dossier information.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

Butadiene-acrylonitrile co-polymer

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

WEST SYSTEM G/flex 650 Hardener

Phenol, 2,4,6-Tris[(dimethylamino)methyl] reaction products with TETA

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

2,4,6-tris(dimethylaminomethyl)phenol

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

2-piperazin-1-ylethylamine

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

WEST SYSTEM G/flex 650 Hardener

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). EC ₅₀ : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion Skin Sens. = Skin sensitisation STOT RE = Specific target organ toxicity-repeated exposure STOT SE = Specific target organ toxicity-single exposure
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	Eye Dam. 1 - H318: Skin Corr. 1B - H314: STOT RE 2 - H373: STOT SE 3 - H335: Skin Sens. 1 - H317: : Calculation method.

WEST SYSTEM G/flex 650 Hardener

Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision date	04/11/2020
Revision	9
Supersedes date	05/08/2020
SDS number	10620
Hazard statements in full	H302 Harmful if swallowed. H311 Toxic in contact with skin. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled. H361 Suspected of damaging fertility or the unborn child if swallowed. H372 Causes damage to organs (Respiratory tract) through prolonged or repeated exposure if inhaled. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.