

WESSEX

RESINS+ADHESIVES

SAFETY DATA SHEET WEST SYSTEM 206 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 206 HARDENER
Product number 206

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 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317
Environmental hazards Aquatic Chronic 3 - H412

Human health Corrosive to skin and eyes. 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



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Signal word	Danger
Hazard statements	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H332 Harmful if inhaled. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P102 Keep out of reach of children. P261 Avoid breathing vapour/ spray. 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	Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, tetraethylenepentamine, Diethylenetriamine, Triethylenetetramine
Supplementary precautionary statements	P273 Avoid release to the environment.

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

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	30-60%
CAS number: 9046-10-0	EC number: 618-561-0
	REACH registration number: 01-2119557899-12-XXXX
Classification	
Skin Corr. 1C - H314	
Eye Dam. 1 - H318	
Aquatic Chronic 3 - H412	
tetraethylenepentamine	10-30%
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	

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Triethylenetetramine, propoxylated	5-10%
CAS number: 26950-63-0	EC number: 500-055-5
Classification	
Eye Irrit. 2 - H319	
Diethylenetriamine	5-10%
CAS number: 111-40-0	EC number: 203-865-4
	REACH registration number: 01-2119473793-27-XXXX
Classification	
Acute Tox. 4 - H302	
Acute Tox. 4 - H312	
Acute Tox. 2 - H330	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
STOT SE 3 - H335	
Triethylenetetramine	<1%
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	

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. Chemical burns must be treated by a physician.

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.

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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. Chemical burns must be treated by a physician.
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	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. Causes severe burns. 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.

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. This product is toxic. Severe corrosive hazard. 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

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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.
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.
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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).
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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. Provide adequate ventilation. 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. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
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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.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

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Usage precautions

Keep out of the reach of children. 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

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

Corrosive 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

Occupational exposure limits

Diethylenetriamine

Long-term exposure limit (8-hour TWA): WEL 1 ppm 4.3 mg/m³

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained.

Eye/face protection

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

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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 gauntlets 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

Appearance	Clear liquid.
Colour	Light (or pale). Amber.
Odour	Amine.
Odour threshold	Not determined.
pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	> 100°C Closed cup.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	1.01 @ 20°C
Bulk density	Not determined.
Solubility(ies)	Slightly soluble in water.
Partition coefficient	Not determined.

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Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	125 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

Materials to avoid	Strong acids. Strong alkalis. Strong oxidising agents.
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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: Toxic and corrosive gases or vapours.
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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.
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ATE oral (mg/kg)	2,311.18
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Acute toxicity - dermal

Notes (dermal LD₅₀)	Based on available data the classification criteria are not met.
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ATE dermal (mg/kg)	4,346.7
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Acute toxicity - inhalation

Notes (inhalation LC₅₀)	Acute Tox. 4 - H332 Harmful if inhaled.
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ATE inhalation (dusts/mists mg/l)	4.93
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Skin corrosion/irritation

Animal data	Skin Corr. 1B - H314 Causes severe burns.
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Serious eye damage/irritation

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Serious eye damage/irritation	Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	May cause skin sensitisation or allergic reactions in sensitive individuals.
<u>Germ cell mutagenicity</u>	
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.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.
<u>Reproductive toxicity</u>	
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.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
<u>General information</u>	
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. Causes severe burns. 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	No specific target organs known.
Medical considerations	Skin disorders and allergies.

Toxicological information on ingredients.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Acute toxicity - oral

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Acute toxicity oral (LD₅₀ mg/kg) 2,885.3

Species Rat

Notes (oral LD₅₀) REACH dossier information.

ATE oral (mg/kg) 2,885.3

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,979.7

Species Rabbit

Notes (dermal LD₅₀) REACH dossier information.

ATE dermal (mg/kg) 2,979.7

Skin corrosion/irritation

Animal data Dose: 0.5ml, 4 hr, Rabbit Erythema/eschar score: Moderate to severe erythema (3). 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.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. REACH dossier information.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information.

Reproductive toxicity

Reproductive toxicity - fertility Screening: - NOAEL 30 mg/kg/day, Dermal, Rat P REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 250 mg/kg, Oral, Rat REACH dossier information.

tetraethylenepentamine

Toxicological effects No information available.

Acute toxicity - oral

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

Triethylenetetramine, propoxylated

Toxicological effects No information available.

Diethylenetriamine**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 1,553.0

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Species	Rat
Notes (oral LD₅₀)	REACH dossier information. Harmful if swallowed.
ATE oral (mg/kg)	1,553.0
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	1,052.0
Species	Rabbit
Notes (dermal LD₅₀)	REACH dossier information. Harmful in contact with skin.
ATE dermal (mg/kg)	1,052.0
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC₅₀ dust/mist mg/l)	0.25
Species	Rat
Notes (inhalation LC₅₀)	Data lacking.
ATE inhalation (dusts/mists mg/l)	0.25
<u>Skin corrosion/irritation</u>	
Animal data	Corrosive to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Corrosive to skin. Corrosivity to eyes is assumed. No testing is needed.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Mouse: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Sensitising. REACH dossier information. May cause sensitisation by skin contact.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.
Genotoxicity - in vivo	Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	NOAEL > 56.3 mg/kg, Dermal, Mouse Estimated value. REACH dossier information. There is no evidence that the product can cause cancer.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	One-generation study - NOAEL 100 mg/kg/day, Oral, Rat P REACH dossier information. Based on available data the classification criteria are not met.
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 30 mg/kg/day, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

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Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 70 mg/kg, Oral, Rat REACH dossier information. Not classified as a specific target organ toxicant after repeated exposure.

Triethylenetetramine

Toxicological effects No information available.

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

SECTION 12: Ecological Information

Ecotoxicity Dangerous for the environment if discharged into watercourses.

12.1. Toxicity

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Ecological information on ingredients.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 15 mg/l, Oncorhynchus mykiss (Rainbow trout)
REACH dossier information.

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 80 mg/l, Daphnia magna
REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: 15 mg/l, Freshwater algae
REACH dossier information.

Acute toxicity - microorganisms EC₅₀, 3 hours: 750 mg/l, Activated sludge
REACH dossier information.

tetraethylenepentamine

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

Triethylenetetramine, propoxylated

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

Diethylenetriamine

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 430 mg/l, Poecilia reticulata (Guppy)
REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: 1164 mg/l, Selenastrum capricornutum
REACH dossier information.

Acute toxicity - microorganisms EC₅₀, 3 hours: 32.7 mg/l, Activated sludge
REACH dossier information.

Triethylenetetramine

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

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12.2. Persistence and degradability

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

Ecological information on ingredients.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Stability (hydrolysis)	pH7 - Half-life : 1 year @ 25°C REACH dossier information.
Biodegradation	Water - Degradation (%) 0: 28 days REACH dossier information. No biodegradation observed under test conditions.

tetraethylenepentamine

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

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

Phototransformation	Water - DT ₅₀ : 2.6 hours Estimated value. REACH dossier information.
Biodegradation	Water - Degradation (%) 87: 21 days REACH dossier information. The substance is readily biodegradable.

Triethylenetetramine

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

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	Not determined.

Ecological information on ingredients.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	log Pow: 1.34 REACH dossier information.

tetraethylenepentamine

Bioaccumulative potential	No data available on bioaccumulation.
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Triethylenetetramine, propoxylated

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Bioaccumulative potential No data available on bioaccumulation.

Diethylenetriamine

Bioaccumulative potential The product is not bioaccumulating. BCF: < 1.7, Cyprinus carpio (Common carp) REACH dossier information.

Partition coefficient log Pow: -5.58 Estimated value. REACH dossier information.

Triethylenetetramine

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Mobility The product contains volatile organic compounds (VOCs) which have a photochemical ozone creation potential.

tetraethylenepentamine

Mobility No information available.

Triethylenetetramine, propoxylated

Mobility No information available.

Diethylenetriamine

Mobility The product is soluble in water.

Adsorption/desorption coefficient Water - log Koc: < 4.6 @ 25°C REACH dossier information.

Triethylenetetramine

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.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

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

tetraethylenepentamine

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

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Triethylenetetramine, propoxylated

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

Diethylenetriamine

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

Triethylenetetramine

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. Do not discharge into drains or watercourses or onto the ground.

Waste class 07 07 99

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2735

UN No. (IMDG) 2735

UN No. (ICAO) 2735

UN No. (ADN) 2735

14.2. UN proper shipping name

Proper shipping name (ADR/RID) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, tetraethylenepentamine)

Proper shipping name (IMDG) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, tetraethylenepentamine)

Proper shipping name (ICAO) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, tetraethylenepentamine)

Proper shipping name (ADN) AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, tetraethylenepentamine)

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14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C7
ADR/RID label	8
IMDG class	8
ICAO class/division	8
ADN class	8

Transport labels



14.4. Packing group

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

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

IMDG Code segregation group	18. Alkalis
EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

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.
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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.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 EC₅₀: 50% of maximal Effective Concentration.
 PBT: Persistent, Bioaccumulative and Toxic substance.
 vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Eye Dam. = Serious eye damage
 Skin Corr. = Skin corrosion
 Skin Sens. = Skin sensitisation
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Source: European Chemicals Agency, <http://echa.europa.eu/>

Classification procedures according to Regulation (EC) 1272/2008

Acute Tox. 4 - H332: Eye Dam. 1 - H318: Skin Corr. 1B - H314: Skin Sens. 1 - H317: : Calculation method. Aquatic Chronic 3 - H412: : Calculation method.

Training advice

Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Revision date

24/05/2018

Revision

5

Supersedes date

06/02/2017

SDS number

10569

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Hazard statements in full

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
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.