

# SAFETY DATA SHEET

## EH-CLS 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** EH-CLS HARDENER  
**UFI** UFI: KTA0-30NH-F00C-EMF5

#### 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, SO51 7LF, UK  
 Tel: +44 (0) 1794 521111  
 info@wessex-resins.com

**EU IMPORTER** Wessex Resins and Adhesives Limited, First Floor, 43-40 Sir John Rogerson's Quay, Dublin 2, Dublin, Ireland Tel: +353 15256758

#### 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 - H302 Skin Corr. 1C - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT RE 2 - H373

**Environmental hazards** Aquatic Chronic 3 - H412

**Human health** Corrosive to skin and eyes. The product contains a sensitising substance. Harmful if swallowed. 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

##### Hazard pictograms



**Signal word** Danger

**Hazard statements** H302 Harmful if swallowed.  
 H314 Causes severe skin burns and 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.

## EH-CLS HARDENER

<b>Precautionary statements</b>	<p>P280 Wear protective gloves, eye and face protection.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
<b>Contains</b>	<p>Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, Trimethylhexane-1,6-diamine, 4,4'-methylenebis(cyclohexylamine), Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, reaction products with trimethylhexamethylenediamine, Benzyl alcohol, 3-aminomethyl-3,5,5-trimethylcyclohexylamine, 1,3-Cyclohexanedimethanamine, 2-piperazin-1-ylethylamine, N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine</p>
<b>Supplementary precautionary statements</b>	<p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P405 Store locked up.</p>

### 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

<b>Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia</b>	<b>10-30%</b>			
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">CAS number: 9046-10-0</td> <td style="width: 33%;">EC number: 618-561-0</td> <td style="width: 33%;">REACH registration number: 01-2119557899-12-XXXX</td> </tr> </table>	CAS number: 9046-10-0	EC number: 618-561-0	REACH registration number: 01-2119557899-12-XXXX	
CAS number: 9046-10-0	EC number: 618-561-0	REACH registration number: 01-2119557899-12-XXXX		
<b>Classification</b> Skin Corr. 1C - H314 Eye Dam. 1 - H318 Aquatic Chronic 3 - H412				
<b>Trimethylhexane-1,6-diamine</b>	<b>10-30%</b>			
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">CAS number: 25513-64-8</td> <td style="width: 33%;">EC number: 247-063-2</td> <td style="width: 33%;">REACH registration number: 01-2119560598-25-XXXX</td> </tr> </table>	CAS number: 25513-64-8	EC number: 247-063-2	REACH registration number: 01-2119560598-25-XXXX	
CAS number: 25513-64-8	EC number: 247-063-2	REACH registration number: 01-2119560598-25-XXXX		
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1A - H317 Aquatic Chronic 3 - H412				

**EH-CLS HARDENER**

<b>4,4'-methylenebis(cyclohexylamine)</b> <span style="float: right;"><b>10-30%</b></span>		
CAS number: 1761-71-3	EC number: 217-168-8	REACH registration number: 01-2119541673-38-0000
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT RE 2 - H373		
<b>Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, reaction products with trimethylhexamethylenediamine</b> <span style="float: right;"><b>10-30%</b></span>		
CAS number: 111850-23-8		
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317		
<b>Benzyl alcohol</b> <span style="float: right;"><b>5-10%</b></span>		
CAS number: 100-51-6	EC number: 202-859-9	REACH registration number: 01-2119492630-38-XXXX
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H332 Eye Irrit. 2 - H319		
<b>1,3-Cyclohexanedimethanamine</b> <span style="float: right;"><b>1-5%</b></span>		
CAS number: 2579-20-6	EC number: 219-941-5	REACH registration number: 01-2119543741-41-XXXX
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Aquatic Chronic 3 - H412		

**EH-CLS HARDENER**

<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b> <span style="float: right;"><b>1-5%</b></span>		
CAS number: 2855-13-2	EC number: 220-666-8	REACH registration number: 01-2119514687-32-XXXX
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412		
<b>2-piperazin-1-ylethylamine</b> <span style="float: right;"><b>1-5%</b></span>		
CAS number: 140-31-8	EC number: 205-411-0	REACH registration number: 01-2119471486-30-0003
<b>Classification</b> 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		
<b>N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine</b> <span style="float: right;"><b>1-5%</b></span>		
CAS number: 10563-29-8	EC number: 234-148-4	REACH registration number: 01-2119970376-29-XXXX
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1A - H314 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. 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.

## EH-CLS HARDENER

<b>Ingestion</b>	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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
<b>Protection of first aiders</b>	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

<b>General information</b>	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.
<b>Inhalation</b>	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.
<b>Ingestion</b>	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
<b>Skin contact</b>	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.
<b>Eye contact</b>	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

<b>Notes for the doctor</b>	Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.
-----------------------------	--

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	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.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

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

## EH-CLS HARDENER

**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. 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.

### 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. This product is corrosive. Approach the spillage from upwind. Small Spillages: Collect spillage. 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.

### 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

## EH-CLS HARDENER

**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. 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.

**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

### 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.

#### 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:  $\geq 0.13$  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.

## EH-CLS HARDENER

<b>Hygiene measures</b>	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.
<b>Respiratory protection</b>	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.
<b>Environmental exposure controls</b>	Avoid discharge to the aquatic environment. Keep container tightly sealed when not in use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Clear liquid.
<b>Colour</b>	Colourless to pale yellow.
<b>Odour</b>	Ammonia.
<b>Odour threshold</b>	Not determined.
<b>pH</b>	Not determined.
<b>Melting point</b>	Not determined.
<b>Initial boiling point and range</b>	Not determined.
<b>Flash point</b>	>100°C Closed cup.
<b>Evaporation rate</b>	Not determined.
<b>Evaporation factor</b>	Not determined.
<b>Upper/lower flammability or explosive limits</b>	Not determined.
<b>Vapour pressure</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	0.98 @ 22°C
<b>Bulk density</b>	Not determined.
<b>Solubility(ies)</b>	Not determined.
<b>Partition coefficient</b>	Not determined.
<b>Auto-ignition temperature</b>	Not determined.
<b>Decomposition Temperature</b>	Not determined.
<b>Viscosity</b>	Not determined.
<b>Explosive properties</b>	Not determined.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.

#### 9.2. Other information

<b>Other information</b>	Not known.
--------------------------	------------

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity



## EH-CLS HARDENER

<b>Reactivity</b>	There are no known reactivity hazards associated with this product.
<b><u>10.2. Chemical stability</u></b>	
<b>Stability</b>	Stable at normal ambient temperatures and when used as recommended.
<b><u>10.3. Possibility of hazardous reactions</u></b>	
<b>Possibility of hazardous reactions</b>	None known.
<b><u>10.4. Conditions to avoid</u></b>	
<b>Conditions to avoid</b>	There are no known conditions that are likely to result in a hazardous situation.
<b><u>10.5. Incompatible materials</u></b>	
<b>Materials to avoid</b>	Strong acids. Strong oxidising agents.
<b><u>10.6. Hazardous decomposition products</u></b>	
<b>Hazardous decomposition products</b>	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.

### SECTION 11: Toxicological information

#### **11.1. Information on toxicological effects**

##### **Acute toxicity - oral**

**Notes (oral LD<sub>50</sub>)** Acute Tox. 4 - H302 Harmful if swallowed.

**ATE oral (mg/kg)** 776.23

##### **Acute toxicity - dermal**

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

**ATE dermal (mg/kg)** 12,307.33

##### **Acute toxicity - inhalation**

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

**ATE inhalation (dusts/mists mg/l)** 45.16

##### **Skin corrosion/irritation**

**Animal data** Skin Corr. 1B - H314 Causes severe burns.

##### **Serious eye damage/irritation**

**Serious eye damage/irritation** Eye Dam. 1 - H318 Corrosive to skin. 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.

## EH-CLS HARDENER

<b>IARC carcinogenicity</b>	None of the ingredients are listed or exempt.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Not classified as a specific target organ toxicant after a single exposure.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	STOT RE 2 - H373 May cause damage to organs through prolonged or repeated exposure.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Based on available data the classification criteria are not met.
<b><u>General information</u></b>	
<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.
<b>Ingestion</b>	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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
<b>Route of exposure</b>	Ingestion Inhalation Skin and/or eye contact
<b>Target organs</b>	No specific target organs known.
<b>Medical considerations</b>	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

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 2,885.3

**Species** Rat

**Notes (oral LD<sub>50</sub>)** REACH dossier information.

**ATE oral (mg/kg)** 2,885.3

##### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,979.7

**Species** Rabbit

**Notes (dermal LD<sub>50</sub>)** REACH dossier information.

## EH-CLS HARDENER

**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.

### Trimethylhexane-1,6-diamine

**Toxicological effects** No information available.

### 4,4'-methylenebis(cyclohexylamine)

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 380.0

**Species** Rat

**Notes (oral LD<sub>50</sub>)** REACH dossier information. Harmful if swallowed.

**ATE oral (mg/kg)** 380.0

### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> 2110 mg/kg, Dermal, Rabbit REACH dossier information.

### Skin corrosion/irritation

**Animal data** Dose: , 165 minutes, Rabbit Erythema/eschar score: Severe erythema (beef redness) to eschar formation preventing grading of erythema (4). 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** Chromosome aberration: Negative. REACH dossier information.

## EH-CLS HARDENER

<b>Genotoxicity - in vivo</b>	Chromosome aberration: Negative. REACH dossier information.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Screening: - NOAEL 50 mg/kg/day, Oral, Rat P REACH dossier information.
<b>Reproductive toxicity - development</b>	Developmental toxicity: - NOAEL: 15 mg/kg/day, Oral, Rat REACH dossier information.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Irritating to respiratory system.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	NOAEL 50 mg/kg, Oral, Rat REACH dossier information.

### 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

<b>Acute toxicity - fish</b>	LC50, 96 hours: > 15 mg/l, Oncorhynchus mykiss (Rainbow trout) REACH dossier information.
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hours: 80 mg/l, Daphnia magna REACH dossier information.
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 72 hours: 15 mg/l, Freshwater algae REACH dossier information.
<b>Acute toxicity - microorganisms</b>	EC <sub>50</sub> , 3 hours: 750 mg/l, Activated sludge REACH dossier information.

##### Trimethylhexane-1,6-diamine

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

##### 4,4'-methylenebis(cyclohexylamine)

#### Acute aquatic toxicity

<b>Acute toxicity - fish</b>	LC50, 96 hours: 67.8 mg/l, Leuciscus idus (Golden orfe) REACH dossier information.
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hours: 9.24 mg/l, Daphnia magna REACH dossier information.
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 72 hours: 2164 mg/l, Scenedesmus subspicatus REACH dossier information.
<b>Acute toxicity - microorganisms</b>	EC20, 30 minutes: > 100 mg/l, Activated sludge REACH dossier information.

#### 12.2. Persistence and degradability

## EH-CLS HARDENER

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

### Ecological information on ingredients.

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

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

#### Trimethylhexane-1,6-diamine

<b>Persistence and degradability</b>	There are no data on the degradability of this product.
--------------------------------------	---

#### 4,4'-methylenebis(cyclohexylamine)

<b>Biodegradation</b>	Water - Degradation (%) 2: 5 days No biodegradation observed under test conditions.
-----------------------	--

### 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

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

#### Trimethylhexane-1,6-diamine

**Bioaccumulative potential** No data available on bioaccumulation.

#### 4,4'-methylenebis(cyclohexylamine)

<b>Bioaccumulative potential</b>	The product is not bioaccumulating. BCF: 21.7, Estimated value. REACH dossier information.
<b>Partition coefficient</b>	log Pow: 2.03 REACH dossier information.

### 12.4. Mobility in soil

**Mobility** No information 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.

#### Trimethylhexane-1,6-diamine

## EH-CLS HARDENER

<b>Mobility</b>	No information available.
	<u><b>4,4'-methylenebis(cyclohexylamine)</b></u>
<b>Mobility</b>	The product contains volatile organic compounds (VOCs) which have a photochemical ozone creation potential.
<b>Adsorption/desorption coefficient</b>	Water - log Koc: 4.23 @ 25°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.

#### 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.

#### Trimethylhexane-1,6-diamine

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

#### 4,4'-methylenebis(cyclohexylamine)

**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.

## SECTION 14: Transport information

### 14.1. UN number

<b>UN No. (ADR/RID)</b>	2735
<b>UN No. (IMDG)</b>	2735
<b>UN No. (ICAO)</b>	2735

## EH-CLS HARDENER

UN No. (ADN) 2735

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Trimethylhexane-1,6-diamine, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)

**Proper shipping name (IMDG)** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Trimethylhexane-1,6-diamine, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)

**Proper shipping name (ICAO)** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Trimethylhexane-1,6-diamine, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)

**Proper shipping name (ADN)** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Trimethylhexane-1,6-diamine, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)

### 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 III

IMDG packing group III

ICAO packing group III

ADN packing group III

### 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** 3

**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

## EH-CLS HARDENER

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

<b>National regulations</b>	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.
<b>EU legislation</b>	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

<b>Abbreviations and acronyms used in the safety data sheet</b>	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 <sub>50</sub> : Lethal Concentration to 50 % of a test population. LD <sub>50</sub> : Lethal Dose to 50% of a test population (Median Lethal Dose). EC <sub>50</sub> : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
<b>Classification abbreviations and acronyms</b>	Acute Tox. = Acute toxicity Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion Skin Sens. = Skin sensitisation STOT RE = Specific target organ toxicity-repeated exposure Aquatic Chronic = Hazardous to the aquatic environment (chronic)
<b>Key literature references and sources for data</b>	Source: European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
<b>Classification procedures according to Regulation (EC) 1272/2008</b>	Acute Tox. 4 - H302: Eye Dam. 1 - H318: Skin Corr. 1B - H314: STOT RE 2 - H373: Skin Sens. 1 - H317: : Calculation method. Aquatic Chronic 3 - H412: : Calculation method.



## EH-CLS HARDENER

<b>Training advice</b>	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
<b>Revision date</b>	18/10/2021
<b>Revision</b>	10
<b>Supersedes date</b>	22/09/2021
<b>SDS number</b>	20579
<b>Hazard statements in full</b>	H302 Harmful if swallowed. H311 Toxic in contact with skin. 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. 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. H373 May cause damage to organs (Liver) through prolonged or repeated exposure. 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.