Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

SAFETY DATA SHEET

FOR PROFESSIONAL and/or INDUSTRIAL USE ONLY

EPIKURE ™ Curing Agent 111

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

1.1 Product identifier

Product name	:	EPIKURE ™ Curing Agent 111
SDS Number	:	0709100
Index number	:	Not available
EC number	:	500-129-7
CAS number	:	55552-95-9

REACH Registration number

Registration number	Legal entity
01-2120769918-31-0000	Westlake Epoxy GmbH

Product type : Curing Agent

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

Identified uses
Not applicable.

Uses advised against
Not applicable.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier/Importer : Westlake Epoxy B.V.
Seattleweg 17
3195 ND Pernis - Rotterdam
The Netherlands

Contact person : epoxyservice@westlake.com
Telephone : General information
+31 (0) 10 295 4011

1.4 Emergency telephone number
Supplier : CARECHEM24
Telephone number : +44 (0) 1235 239 670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Corr./Irrit. 1A H314
Eye Dam./Irrit. 1 H318
Skin Sens. 1 H317
Aquatic Acute 1 H400
Aquatic Chronic 1 H410

See Section 16 for the full text of the H statements declared above.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves, protective clothing and eye or face protection.
Avoid release to the environment.
Avoid breathing vapor.

Response : Collect spillage.
IF INHALED:
Immediately call a POISON CENTER or doctor.
IF SWALLOWED:
Immediately call a POISON CENTER or doctor.
Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair):
Take off immediately all contaminated clothing. Rinse skin with water.
Immediately call a POISON CENTER or doctor.
Wash contaminated clothing before reuse.
IF ON SKIN:
Wash with plenty of water.
If skin irritation or rash occurs:
Get medical advice or attention.
IF IN EYES:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol
2,2'-iminodiethylamine
Phenol

Supplemental label elements : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : UVCB

Product name : EPIKURE ™ Curing Agent 111

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	RRN : 01-2120769918-31 CAS : 55552-95-9	100	Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	-	[1]
2,2'-iminodiethylamine	RRN : 01-2119473793-27 EC : 203-865-4 CAS : 111-40-0 Index : 612-058-00-X	> 25 - <= 40	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335 (Respiratory tract irritation)	ATE [Oral] = 1,080 mg/kg ATE [Dermal] = 1,054 mg/kg ATE [Inhalation (vapours)] = 0.5 mg/l	
Phenol	RRN : 01-2119471329-32 EC : 203-632-7 CAS : 108-95-2 Index : 604-001-00-2	> 1 - <= 6	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 Muta. 2, H341 STOT RE 2, H373 Aquatic Chronic 2, H411	ATE [Oral] = 100 mg/kg ATE [Dermal] = 630 mg/kg ATE [Inhalation (vapours)] = 3 mg/l Skin Corr. 1B, H314: >= 3 % Skin Irrit. 2, H315: 1 - < 3 % Eye Dam. 1, H318: >= 3 % Eye Irrit. 2, H319: 1 - < 3 %	

See Section 16 for the full text of the H statements declared above.
There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type
[1] Constituent

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention immediately. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. Note: An MDI study has demonstrated that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first aid personnel : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	:	Causes serious eye damage.
Inhalation	:	No known significant effects or critical hazards.
Skin contact	:	Causes severe burns. May cause an allergic skin reaction.
Ingestion	:	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Adverse symptoms may include the following: pain watering redness
Inhalation	:	No specific data.
Skin contact	:	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	:	Adverse symptoms may include the following: stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use dry chemical, CO2, alcohol-resistant foam or water spray (fog).
Unsuitable extinguishing media	:	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	:	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Additional information	:	Not available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see section 8 of SDS). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain

Advice on general occupational hygiene	:	product residue and can be hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations	:	Not available
Industrial sector specific solutions	:	Not available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Product/ingredient name	Exposure limit values
Phenol	**TRGS900 AGW (2010-06-21)** **TWA** 8 mg/m3 2 ppm 2(II) Notes: Absorbed through skin. **DFG MAK-Werte Liste (2003-07-01)** Notes: Absorbed through skin. **EU OEL (2009-12-19)** **TWA - TLV and PEL** 8 mg/m3 2 ppm Notes: Absorbed through skin. **STEL** 16 mg/m3 4 ppm Notes: Absorbed through skin.
2,2'-iminodiethylamine	**DFG MAK-Werte Liste (2008-07-01)** Notes: Skin sensitizer

Product/ingredient name	Exposure limit values
Phenol	**EU OEL (2009-12-19)** **TWA - TLV and PEL** 8 mg/m3 2 ppm Notes: Absorbed through skin. **STEL** 16 mg/m3 4 ppm Notes: Absorbed through skin.

Recommended monitoring procedures	:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by

inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Long term Inhalation	3.52 mg/m³	Workers	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Short term Inhalation	3.52 mg/m³	Workers	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Long term Dermal	1.0 mg/kg bw/day	Workers	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Short term Dermal	1.0 mg/kg bw/day	Workers	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Long term Inhalation	1.76 mg/m³	General population	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Short term Inhalation	1.76 mg/m³	General population	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Long term Dermal	0.5 mg/kg bw/day	General population	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Short term Dermal	0.5 mg/kg bw/day	General population	Systemic
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	DNEL	Long term Oral	0.5 mg/kg bw/day	General population	Systemic
Formaldehyde,	DNEL	Short term	0.5 mg/kg	General	Systemic

polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol		Oral	bw/day	population	
2,2'-iminodiethylamine	DNEL	Short term Dermal	4.88 mg/kg bw/day	General population	Systemic
2,2'-iminodiethylamine	DNEL	Long term Inhalation	15.4 mg/m³	Workers	Systemic
2,2'-iminodiethylamine	DNEL	Short term Inhalation	92.1 mg/m³	Workers	Systemic
2,2'-iminodiethylamine	DNEL	Long term Inhalation	0.87 mg/m³	Workers	Local
2,2'-iminodiethylamine	DNEL	Short term Inhalation	2.6 mg/m³	Workers	Local
2,2'-iminodiethylamine	DNEL	Long term Dermal	11.4 mg/kg bw/day	Workers	Systemic
2,2'-iminodiethylamine	DNEL	Long term Dermal	1.1 mg/cm²	Workers	Local
2,2'-iminodiethylamine	DNEL	Long term Inhalation	4.6 mg/m³	General population	Systemic
2,2'-iminodiethylamine	DNEL	Short term Inhalation	27.5 mg/m³	General population	Systemic
2,2'-iminodiethylamine	DNEL	Long term Dermal	4.88 mg/kg bw/day	General population	Systemic
Phenol	DNEL	Long term Inhalation	8.0 mg/m³	Workers	Systemic
Phenol	DNEL	Long term Dermal	0.4 mg/kg bw/day	General population	Systemic
Phenol	DNEL	Long term Oral	0.4 mg/kg bw/day	General population	Systemic
Phenol	DNEL	Long term Inhalation	1.32 mg/m³	General population	Systemic

DNEL/DMEL Summary **:** Not available

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Fresh water	0.2 µg/l	Assessment Factors
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Marine	0.02 µg/l	Assessment Factors
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Sewage Treatment Plant	6.1 mg/l	Assessment Factors

Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Fresh water sediment	0.024 mg/kg dwt	Equilibrium Partitioning
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Marine water sediment	0.0024 mg/kg dwt	Equilibrium Partitioning
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	PNEC	Soil	0.041 mg/kg dwt	Equilibrium Partitioning
Phenol	PNEC	Fresh water	7.7 µg/l	
Phenol	PNEC	Marine	0.77 µg/l	
Phenol	PNEC	Sewage Treatment Plant	2.1 mg/l	
Phenol	PNEC	Fresh water sediment	91.5 µg/kg dwt	
Phenol	PNEC	Marine water sediment	9.15 µg/kg dwt	
Phenol	PNEC	Soil	136 µg/kg dwt	

PNEC Summary **:** Not available

Derived No-Effect Levels' (DNEL's) and Predicted No-Effect Concentrations' (PNEC's)

Explanatory note:
REACH requires manufacturers and importers to establish and report 'Derived No-Effect Levels' (DNEL's) for humans by inhalation, ingestion and dermal routes of exposure and 'Predicted No-Effect Concentrations' (PNEC's) for environmental exposure. DNEL's and PNEC's are established by the registrant without an official consultation process, and are not intended to be directly used for setting workplace or general population exposure limits. They are primarily used as input values in running Quantitative Risk Assessment models (like the ECETOC-TRA model).

Due to differences in calculation methodology the DNEL will tend to be lower (sometimes significantly) than any corresponding health-based OEL for that chemical substance. Further although DNEL's (and PNEC's) are an indication for setting risk reduction measures, it should be recognized that these limits do not have the same regulatory application as officially endorsed governmental OEL's.

8.2 Exposure controls

Appropriate engineering controls **:** If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures **:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection **:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Material: 730 Camatril Minimum break through time: 480 min Material: 898 Butoject Minimum break through time: 480 min Producer: This recommendation is valid only for our Product as delivered. If this product will be mixed with other substances you need to contact a supplier of CE approved protective gloves (e.g. KCL GmbH, D-36124 Eichenzell, Tel. 0049 (0) 6659 87300, Fax. 0049 (0) 6659 87155, email: vertrieb@kcl.de).
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter, ABEK (EN14387) Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Environmental exposure controls	:	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.
General protective measures	:	Chemical splash goggles or face shield. Chemical-resistant gloves. Suitable protective footwear. Light protective clothing. Eyewash bottle with clean water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Liquid
Color	:	Brown.
Odor	:	Not available (not measured)

Odor threshold	:	Not available (not measured)
pH	:	Approx. 10.3
Melting point/freezing point	:	Not available (not measured)
Initial boiling point and boiling range	:	Not available (not measured)
Flash point	:	Not available (not measured)
Evaporation rate	:	Not available (not measured)
Upper/lower flammability or explosive limits	:	**Lower:** Not available (not measured) **Upper:** Not available (not measured)
Vapor pressure	:	Not available (not measured)
Vapor density	:	Not available (not measured)
Relative density	:	Not available (not measured)
Density	:	1.05 - 1.09 g/cm3 (DIN 53217)
Solubility(ies)	:	Not available (not measured)
Solubility in water	:	Not available (not measured)
Partition coefficient: n-octanol/water	:	Not applicable.
Auto-ignition temperature	:	Not available (not measured)
Decomposition temperature	:	Not available (not measured)
Viscosity	:	**Dynamic:** 500 - 700 mPa·s @ 25 °C (ISO 9371) **Kinematic:** Not available (not measured)
Explosive properties	:	Not available (not measured)
Oxidizing properties	:	Not available (not measured)

Particle characteristics

Median particle size	:	Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	Stable under normal conditions.
10.2 Chemical stability	:	The product is stable.
10.3 Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	Keep away from heat and direct sunlight. No specific data.
10.5 Incompatible materials	:	Reactive or incompatible with the following materials: oxidising materials acidsNo specific data.
10.6 Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-iminodiethylamine				
	LD50 Oral	Rat	1,080 mg/kg	-
	LD50 Oral	Rat	1,080 mg/kg	-
	LD50 Dermal	Rabbit	1,054 mg/kg	-
	LD50 Dermal	Rabbit	1,090 mg/kg	-
	LD50 Dermal	Rabbit	1,054 mg/kg	-
Phenol				
	LD50 Oral	Rat	317 mg/kg	-
Remarks - Oral:	In studies conducted in a manner similar to current O.E.C.D. test guideline, the rat LD50 ranged 340 - 650 mg/kg of body wt.			
	LD50 Oral	Rat	317 mg/kg	-
	LC50 Inhalation	Rat	0.9 mg/l	8 h
	LD50 Dermal	Rabbit	630 mg/kg	-
Remarks - Dermal:	In studies conducted in a manner similar to the current O.E.C.D. test guideline, the rat dermal LD50 ranged 525 - 707 mg/kg of body wt and the rabbit LD50 was 850 mg/kg of body wt.			
	LD50 Dermal	Rabbit	630 mg/kg	-

Conclusion/Summary : Not available

Acute toxicity estimates

N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	431 In Vitro Skin Corrosion: Human Skin Model Test		-		-
Remarks:	Corrosive to skin on contact.				
2,2'-iminodiethylamine	Skin - Moderate irritant	Rabbit	-		-
Phenol	Skin - -	Rat	> 4		-
	eyes - Cornea opacity	Rabbit	> 3		-

Conclusion/Summary
Skin : Not available
eyes : Not available
Respiratory : Not available

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Phenol	Skin	Guinea pig	Not sensitizing 406 Skin Sensitization
Remarks:	Not sensitizing in an O.E.C.D. test guideline no. 406 guinea pig Buehler study. However, the Challenge dose was only 1%. Not sensitizing in a human Maximization test conducted with an induction dose of 2% and a Challenge dose of 1%.		

Conclusion/Summary
Skin : Not available

Respiratory : Not available

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)	Subject: Bacteria Metabolic activation: with and without Experiment: In vitro	Negative
	Mouse Lymphoma Assay (OECD Guidline 476)	Subject: Mammalian-Animal Metabolic activation: with and without Experiment: In vitro	Positive
	473 In vitro Mammalian Chromosomal Aberration Test	Subject: Mammalian-Animal Metabolic activation: with and without Experiment: In vitro	Negative
Phenol	-	Subject: See Remarks	Positive
Remarks:	Not a bacterial mutagen in O.E.C.D. test guideline no. 471 Ames/Salmonella mutation assays conducted up to cytotoxic dose levels with and without S9 metabolic activation. Positive for induction of micronuclei (chromosome damage) in Chinese hamster ovary (CHO) cells at 3-7-fold the control background frequency when tested to cytotoxic dose levels. Positive for the induction of chromosome aberrations in CHO cells only with S9 metabolic activation. Induced a 2-3-fold increase of the gene-mutation frequency in independent studies in mouse lymphoma cells with and without S9 metabolic activation. Evidence for the induction of sister-chromatid-exchanges (SCEs), DNA strand breaks and DNA adducts also reported.		
	-	Subject: Mammalian-Animal	Positive
Remarks:	In independent mouse bone marrow micronucleus studies, weakly (statistically) positive by I.P. injection, but not by oral gavage at myelotoxic doses of approximately 300 mg/kg/day. Research suggest that the mechanism of micronucleus formation may envolve hypothermia a near lethal doses. No DNA adducts detected in rat bone marrow or liver following 4 doses of 75 mg/kg/day. Currently classified as Mutagen Category 2.		

Conclusion/Summary : Not available

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Phenol	Negative - Oral - NOEL	See Remarks		
Remarks:	In long-term oral drinking water cancer bioassays (NIH/NCI) in rats and mive no evidence of carcinogenicity in mice and female rats. The increased tumor incidence observed in male rats was considered not treatment related. No evidence of tumors in wild-type and transgenic TG.AC mice following 20 weeks of treatment (2 days/week). In mice treated twice/week with 25 ul 20% phenol (corrosive) for 32 weeks 7/18 developed skin papillomas. Limited evidence for tumor promoting activity on mouse skin at corrosive 20% concentrations.			

Conclusion/Summary : Not available

Reproductive toxicity

Product/ingredient name	Maternal	Fertility	Developmen	Species	Dose	Exposure

	toxicity		**t toxin**			
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	Negative	Negative	Negative	Rat	Oral: 300 mg/kg/d Repeated dose 422 Combined Repeated Dose Toxicity Study with the Reproduction /Developmental Toxicity Screening Test	28 days 7 days per week
Phenol	Negative	Negative	Negative	Rat	Oral 416 Two-Generation Reproduction Toxicity Study	-
Remarks:	In an O.E.C.D. test guideline no. 416 rat two-generation oral drinking water study the adult and reproductive NOAEL was approximately 70 mg/kg/day. There was a significant group mean reduction of body weight, feed consumption and water consumption at the high concentration of 5000 ppm (~ 300 mg/kg/day) in both generations. Group mean pup body weight and survival were significantly reduced at 5000 ppm. These adverse findings are believed to be to the drinking water palitability of the high dose phenol.					

Conclusion/Summary : Not available

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Phenol	Positive - Oral 414 Prenatal Developmental Toxicity Study	See Remarks	-	-
Remarks:	O.E.C.D. test guideline no. 414 developmental toxicity studies were conducted in the rat and mouse by oral gavage. The NOAEL for both maternal and developmental toxicity in the mouse was 140 mg/kg/day. There were maternal mortalities and a significant reduction in mean maternal body weight at 280 mg/kg/day. Also, clinical signs including tremors and ataxia were observed at 280 mg/kg/day. Mean fetal body weight was significantly reduced at the high dose of 280 mg/kg/day. In the rat the maternal NOAEL was 60 mg/kg/day due to significantly reduced mean body weight at 120 and 360 mg/kg/day. The developmental effects NOAEL was 120 mg/kg/day due to a significant reduction in mean fetal body weight and ossification sites at the high dose of 360 mg/kg/day. These data suggest a significant role for maternal toxicity in the adverse developmental effects observed.			

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Not available

Aspiration hazard

Not available

Information on likely routes of exposure : Not available

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes severe burns. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain, watering, redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following: pain or irritation, redness, blistering may occur
Ingestion : Adverse symptoms may include the following: stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Long term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	NOAEL Oral	Rat	300 mg/kg/d Repeated dose 422 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test	28 days 7 days per week

Conclusion/Summary : Not available

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

11.2. Information on other hazards

11.2.1 Endocrine disrupting properties : Not available
11.2.2 Other information : Not available

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol			
	Acute LC50 > 0.14 mg/l Acute Fish Toxicity OECD Guideline 203 (Fish, Acute Toxicity Test)	Oncorhynchus mykiss	96 h
	Acute EC50 10 mg/l semi-static	Daphnia	48 h

	test 202 Daphnia sp. Acute Immobilization Test and Reproduction Test		
	Acute EC50 0.2 mg/l semi-static test 201 Alga, Growth Inhibition Test	Pseudokirchneriella subcapitata	72 h
	Acute EC50 61 mg/l Fresh water 209 Activated Sludge, Respiration Inhibition Test	activated sludge, domestic (adaptation not specified)	3 h
2,2'-iminodiethylamine			
	Acute LC50 16 mg/l	Daphnia	48 h
	Acute LC50 53,500 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute LC50 16 mg/l	Daphnia	48 h
	Acute EC50 1,164 mg/l	Green algae	72 h
	Acute EC50 345,600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 h
	Acute EC50 345.6 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 h
	Acute LC50 8.9 mg/l Fresh water	Rainbow trout,donaldson trout	96 h
	Acute No-observable-effect-concentration 0.077 mg/l Fresh water	Carp	60 d
	Acute EC50 3.1 mg/l Fresh water	Water flea	48 h
	Acute No-observable-effect-concentration 0.16 mg/l Fresh water	Water flea	16 d
	Acute EC50 61.1 mg/l Fresh water	Microalgae	96 h
	Acute EC50 21 mg/l Fresh water	Soil organisms	24 h
	Chronic No-observable-effect-concentration 2.2 mg/l Fresh water	Water flea	2 d

Conclusion/Summary **:** Not available

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol	OECD-Guideline 301 F (Manometric Respirometry Test)	0 % - The product is not readily biodegradable. - 28 d	20 mg/l	Activated sludge
Phenol	-	62 % - Readily biodegradable - 4.2 d	100 mg/l	Activated sludge
Remarks:	In two independent O.E.C.D. test guideline no. 301C Modified MITI studies the level of biodegradation was 62% within 4.2 days and 85% after 14 days of contact. In an O.E.C.D. test guideline no. 302B study the level of biodegradation was 100% after 6 days.			

Conclusion/Summary **:** Not available

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
2,2'-iminodiethylamine	-5.58	0.65 2.80 - 6.30	low
Phenol	1.5	17.5	low

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available

Mobility : Not available

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
EPIKURE ™ Curing Agent 111	No	N/A	N/A	No	Annex XIV (Not listed)	Specified	Specified

12.6 Endocrine disrupting properties : Not available

12.7 Other adverse effects : No known significant effects or critical hazards.
No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information	14.1. UN number	14.2. UN proper shipping name	14.3. Transport hazard class(es)	14.4. Packing group

ADR/ADN	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol)	8	I
RID	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol)	8	I
ICAO/IATA	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol)	8	I
IMO/IMDG	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Formaldehyde, polymer with N-(2-aminoethyl)-1,2-ethanediamine and phenol)	8	I

14.5. Environmental hazards

Environmentally hazardous and/or Marine Pollutant : Yes.

14.6 Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None required.

Substances of very high concern

None required.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

REACH Status : The substance(s) in this product has (have) been Registered, or are exempted from registration, according to Regulation (EC) No. 1907/2006 (REACH).

Prior Informed Consent (PIC) (649/2012/EU)
None required.

Seveso Directive
This product is controlled under the Seveso Directive.

Danger criteria

Category
E1

National regulations

Storage class (TRGS 510) : 8B

Hazardous incident ordinance
This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category	Reference number
E1	

Hazard class for water : WGK 2

International regulations

International lists : Australia inventory (AICS) All components are listed or exempted.
Canada inventory Not determined.
Japan inventory Not determined.
China inventory (IECSC) Not determined.
Korea inventory (KECI) Not determined.
New Zealand Inventory (NZIoC) Not determined.
Philippines inventory (PICCS) Not determined.
United States inventory (TSCA 8b) Not determined.
Taiwan inventory (TCSI) Not determined.
Thailand inventory Not determined.
Vietnam inventory Not determined.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement

N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Corr. 1A, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

Full text of abbreviated H statements

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	AQUATIC HAZARD (LONG-TERM) - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Corr. 1A	SKIN CORROSION/IRRITATION
Skin Sens. 1	SKIN SENSITISATION
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD
Aquatic Chronic 1	AQUATIC HAZARD (LONG-TERM)

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Notice to reader

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