Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

EPIKURE™ Curing Agent MGS LH 234

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

1.1 Product identifier

Product name	:	EPIKURE™ Curing Agent MGS LH 234
SDS Number	:	16S-00036
Product type	:	Curing Agent

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

Product use	Epoxy Resin Systems

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier/Importer	:	Suter Kunststoffe AG Aefligenstrasse 3 3312 Fraubrunnen Schweiz
Contact person	:	info@swiss-composite.ch
Telephone	:	Allgemeine Informationen +41 (0)31 763 60 60

1.4

Emergency telephone number	:	Tox Info Suisse
Supplier	:	Im Notfall: Tel. 145 (aus dem Ausland: +41 44 251 51 51)
Telephone number		Auskunft: +41 44 251 66 66

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Acute Tox. 4 H302
Skin Corr./Irrit. 1B H314
Eye Dam./Irrit. 1 H318
Skin Sens. 1 H317
Repr. 1B H360F
Aquatic Chronic 3 H412

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

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May damage fertility.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention :
Obtain special instructions before use.
Wear protective gloves.
Wear eye or face protection.
Wear protective clothing.
Avoid release to the environment.

Response :
IF INHALED:
Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or physician.
IF SWALLOWED:
Immediately call a POISON CENTER or physician.
Do NOT induce vomiting.
IF ON SKIN (or hair):
Take off immediately all contaminated clothing.
Rinse skin with water or shower.
Immediately call a POISON CENTER or physician.
IF IN EYES:
Immediately call a POISON CENTER or physician.

Storage : Store locked up.

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

Hazardous ingredients :
Poly(oxypropylene) diamine
trimethylhexane-1,6-diamine
m-phenylenebis(methylamine)
bisphenol A

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

Substance/mixture : Mixture

Product/ingredient name	Identifiers	% by weight	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
m-phenylenebis(methylamine)	RRN : 01-2119480150-50 EC:216-032-5 CAS : 1477-55-0 Index:	>=25 - <=50	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr./Irrit. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1][2]
benzyl alcohol	RRN : 01-2119492630-38-XXXX EC:202-859-9 CAS : 100-51-6 Index:603-057-00-5	>=10 - <=25	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Dam./Irrit. 2, H319	[1]
bisphenol A	RRN : 01-2119457856-23 EC:201-245-8 CAS : 80-05-7 Index:604-030-00-0	>=10 - <20	Eye Dam./Irrit. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360F STOT SE 3, H335 Aquatic Chronic 2, H411	[1][2]
Poly(oxypropylene) diamine	RRN : 01-2119557899-12-XXXX EC:618-561-0 CAS : 9046-10-0 Index:	>=5 - <=10	Skin Corr./Irrit. 1C, H314 Aquatic Chronic 3, H412	[1]
trimethylhexane-1,6-diamine	EC:247-134-8 CAS : 25620-58-0 Index:	>=5 - <=10	Acute Tox. 4, H302 Skin Corr./Irrit. 1C, H314 Eye Dam./Irrit. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1]

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

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 and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : 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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 : Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation	:	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	:	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	:	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	None known.

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 harmful 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	:	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides

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.

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). Water polluting material.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.

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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. 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 product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : 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

Product/ingredient name	Exposure limit values
m-phenylenebis(methylamine)	**SUVA (1997-01-01)** **TWA** 0,1 mg/m3 Notes: Absorbed through skin. Skin sensitizer
bisphenol A	**EU OEL (2009-12-19)** **TWA - TLV and PEL** 10 mg/m3 Form: inhalable dust **SUVA (2005-02-01)** **STEL** 5 mg/m3 The Short -Term Exposure Limit (STEL) is the value that must not be exceeded even for a short period of time Form: Inhalable fraction Notes: Skin sensitizer **TWA** 5 mg/m3 Form: Inhalable fraction Notes: Skin sensitizer

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
bisphenol A	DNEL	Short term Dermal	1,4 mg/kg bw/day	Workers	Systemic
bisphenol A	DNEL	Short term Inhalation	10 mg/m³	Workers	Systemic
bisphenol A	DNEL	Long term Dermal	1,4 mg/kg bw/day	Workers	Systemic
bisphenol A	DNEL	Long term Inhalation	10 mg/m³	Workers	Systemic
bisphenol A	DNEL	Short term Dermal	0,7 mg/kg bw/day	General	Systemic
bisphenol A	DNEL	Short term Inhalation	5,0 mg/m³	General	Systemic
bisphenol A	DNEL	Short term Oral	0,05 mg/kg bw/day	General	Systemic
bisphenol A	DNEL	Long term Dermal	0,7 mg/kg bw/day	General	Systemic
bisphenol A	DNEL	Long term Inhalation	0,25 mg/m³	General	Systemic
bisphenol A	DNEL	Long term Oral	0,05 mg/kg bw/day	General	Systemic
bisphenol A	DNEL	Long term Inhalation	5 mg/m³	General	Local
bisphenol A	DNEL	Short term Inhalation	5 mg/m³	General	Local

DNEL/DMEL Summary : Not available

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
bisphenol A	PNEC	Fresh water	0,018 mg/l	
bisphenol A	PNEC	Marine	0,016 mg/l	
bisphenol A	PNEC	Sewage Treatment Plant	320 mg/l	
bisphenol A	PNEC	Sediment	2,2 mg/kg	
bisphenol A	PNEC	Soil	3,7 mg/kg	

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.
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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Liquid
Color	:	slight blue
Odor	:	amine.
Odor threshold	:	Not available (not measured)
pH	:	Not available (not measured)
Melting point/freezing point	:	Not available (not measured)
Initial boiling point and boiling range	:	Greater than 200 °C
Flash point	:	Greater than 100 °C
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	:	Approx. 1,030 g/cm3
Solubility(ies)	:	Not available (not measured)
Solubility in water	:	Insoluble
Partition coefficient: n-octanol/water	:	Not available (not measured)
Auto-ignition temperature	:	Not available (not measured)
Decomposition temperature	:	Not available (not measured)
Viscosity	:	**Dynamic:** Approx. 150 - 300 mPa·s @ 25 °C (ISO 9371) **Kinematic:** Not available (not measured)
Explosive properties	:	Not available (not measured)
Oxidizing properties	:	Not available (not measured)

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 : No specific data.

10.5 Incompatible materials : No 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 toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Poly(oxypropylene) diamine				
	LD50 Oral	Rat	2.885 mg/kg	-
	LD50 Dermal	Rabbit	2.980 mg/kg	-
trimethylhexane-1,6-diamine				
	LD50 Oral	Rat	910 mg/kg	-
benzyl alcohol				
	LD50 Oral	Rat	1.230 mg/kg	-
	LC50 Inhalation	Rat	> 4,178 mg/l	4 h
	LD50 Dermal	Rabbit	2.000 mg/kg	-
bisphenol A				
	LD50 Oral	Rat	3.250 mg/kg	-
Remarks - Oral:	The LD50 was > 2000 mg/kg with lethargy the main clinical sign during day one.			
Remarks - Inhalation:	In rats no mortalities at 170 mg/m3, the highest attainable concentration. Limited evidence of nasal irritation.			
	LD50 Dermal	Rabbit	3.000 mg/kg	-
Remarks - Dermal:	The estimated dermal LD50 in the rabbit was approximately 3000 mg/kg.			
m-phenylenebis(methylamine)				
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation	Rat	3,89 mg/l	1 h
	LC50 Inhalation	Rat	2,4 mg/l	4 h
	LC50 Inhalation	Rat - Female	0,8 mg/l	4 h
	LD50 Dermal	Rabbit	2.000 mg/kg	-

Conclusion/Summary : Not available

Acute toxicity estimates

Not available

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Poly(oxypropylene) diamine	eyes - Severe irritant	Rabbit			-
benzyl alcohol	Skin - Moderate irritant	Rabbit		24 hrs	-
bisphenol A	Skin - Erythema/Eschar 404 Acute Dermal	Rabbit	0	4 hrs	1 - 72 hrs

	Irritation/Corrosion				
	Skin - Edema 404 Acute Dermal Irritation/Corrosion	Rabbit	0	4 hrs	1 - 72 hrs
	eyes - Cornea opacity 405 Acute Eye Irritation/Corrosion	Rabbit	1		-
	eyes - Iris lesion 405 Acute Eye Irritation/Corrosion	Rabbit	1		-
	eyes - Redness of the conjunctivae 405 Acute Eye Irritation/Corrosion	Rabbit	1		-
	eyes - Edema of the conjunctivae 405 Acute Eye Irritation/Corrosion	Rabbit	1 - 2		-
m-phenylenebis(methylamine)	Skin - Severe irritant	Rabbit		24 hrs	-
	eyes - Severe irritant	Rabbit		24 hrs	-

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

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bisphenol A	Skin	-	-
Remarks:	Not a skin sensitizer in the Mouse local lymph node assay and the guinea pig Maximization test.		

Conclusion/Summary
Skin : Not available
Respiratory : Not available

Mutagenicity

Product/ingredient name	Test	Experiment	Result
bisphenol A	-	; -	-
Remarks:	Does not cause gene mutation or chromosome damage in bacteria, fungi or mammalian cells in vitro.Does not induce evidence of gene mutation or chromosome damage in rodents. Bisphenol A is capable of producing DNA adduct spots in rat liver following oral administration and 32p post-labeling. The significance of these DNA adduct spots is unknown.		

Conclusion/Summary : Not available

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
bisphenol A	- - - - -	-		
Remarks:	There are no human epidemiological data contributing to the assessment of whether or not BPA is carcinogenic. But a dietary carcinogenicity study conducted by the U. S. National Toxicology Program in rats and mice			

	concluded that BPA was not carcinogenic in either species because the tumor findings were not considered toxicologically significant. No inhalation or dermal carcinogenicity studies are available for BPA.

Conclusion/Summary : Not available

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
bisphenol A	-	-	-	-	-	-
Remarks:	The effects of BPA on fertility and reproductive performance have been investigated in two-generation and multi-generation oral studies in the rat and an oral continuous breeding study and a two-generation study in mice. Effects were seen in both species at approximately the same dose level and it is considered that the NOAEL is 50 mg/kg/day. Generally, adverse reproductive findings were made a parentarily toxic dose levels in these dose-feed studies. The most consistent finding among these studies was a significant reduction of mean pup body weight at the high dose levels.					

Conclusion/Summary : Not available

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
bisphenol A	- - -	-	-	-
Remarks:	BPA did not demonstrate any evidence of teratogenicity in rats and mice even at maternally toxic dose levels in the feed. Adverse developmental effects manifested primarily as significantly reduced mean pup body weight were limited to maternally toxic dose levels.			

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
bisphenol A	Category 3 Category 2 Category 3		Respiratory tract irritation central nervous system (CNS) Respiratory tract irritation

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 : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering

redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

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.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : May damage fertility.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
benzyl alcohol			
	Acute LC50 10.000 µg/l Fresh water	Fish - Bluegill	96 h
bisphenol A			
	Acute LC50 4,6 mg/l Fresh water	Fish - Fathead minnow	96 h
	Acute No-observable-effect-concentration 0,016 mg/l Fresh water Chronic ecotoxicity	Fish - Fathead minnow	444 d
	Acute EC50 1 - 16 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute No-observable-effect-concentration 1,8 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h

	Acute EC50 2,73 mg/l Fresh water	Aquatic plants - Microalgae	96 h
	Chronic No-observable-effect-concentration 0,016 mg/l Fresh water	Fish - Fathead minnow	444 d
	Chronic No-observable-effect-concentration 1,8 mg/l Fresh water	Aquatic invertebrates. Water flea	-

Conclusion/Summary : Not available

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
bisphenol A		-		
Remarks:	Bisphenol A was found to be readily biodegradable in an OECD Guideline 301F Manometric Respirometry test. In the test conducted at 22 °C, the extent of biodegradation reached 77.1 to 92.3% at the end of the 10-day window based on O2 consumption and 76 to 81% of theoretical CO2 formation by day 28. Generally, across a number of tests using international test guidelines for measuring aerobic biodegradation under stringent test conditions, Bisphenol A is shown to be readily biodegradable.			

Conclusion/Summary : Not available

12.3 Bioaccumulative potential
Not available

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Poly(oxypropylene) diamine	1,34	-	low
benzyl alcohol	1,1	-	low
bisphenol A	3,4	73	low
m-phenylenebis(methylamine)	0,18	2,69	low

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available

Mobility : Not available

12.5 Results of PBT and vPvB assessment

PBT : P: Not available
B: Not available
T: Not available

vPvB : vP: Not available
vB: Not available

12.6 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. (m-XYLILENEDIAMINE)	8	II
RID	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-XYLILENEDIAMINE)	8	II
ICAO/IATA	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-XYLILENEDIAMINE)	8	II
IMO/IMDG	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-XYLILENEDIAMINE)	8	II

14.5. Environmental hazards

Environmentally hazardous and/or Marine Pollutant : No.

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.

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
Substances of very high concern

Carcinogen: Not listed
Mutagen: Not listed
Toxic to reproduction: Not listed
PBT: Not listed
vPvB: Not listed

Other EU regulations

REACH Status	:	The substance(s) in this product has (have) been Pre-Registered and/or Registered, or are exempted from registration, according to Regulation (EC) No. 1907/2006 (REACH).
Aerosol dispensers	:	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Restricted to professional users.
EU - Prior Informed Consent. List of chemicals subject to the international PIC procedure (Annex I - Part 1)	:	Not listed
EU - Prior Informed Consent. List of chemicals subject to the international PIC procedure (Annex I - Part 2)	:	Not listed
EU - Prior Informed Consent. List of chemicals subject to the international PIC procedure (Annex I - Part 3)	:	Not listed

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
bisphenol A	-	-	-	-

Seveso Directive
This product is controlled under the Seveso Directive.

National regulations

International regulations

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

Taiwan inventory (CSNN) All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals	:	Not listed
	:	Not listed
Chemical Weapons Convention List Schedule II Chemicals	:	Not listed
	:	Not listed
Chemical Weapons Convention List Schedule III Chemicals	:	Not listed
	:	Not listed
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]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Acute Tox. 4, H302 (oral)	Calculation method
Skin Corr./Irrit. 1B, H314	Calculation method
Eye Dam./Irrit. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 1B, H360F (Fertility)	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements :

H302 (oral)	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
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 (inhalation)	Harmful if inhaled.
H335	May cause respiratory irritation.
H360F (Fertility)	May damage fertility.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H302 (oral)	Harmful if swallowed.

H314	Causes severe skin burns and eye damage.
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 (inhalation)	Harmful if inhaled.
H335	May cause respiratory irritation.
H360F (Fertility)	May damage fertility.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] :

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Skin Corr./Irrit. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Skin Corr./Irrit. 1C, H314	SKIN CORROSION/IRRITATION - Category 1C
Skin Sens. 1, H317	SKIN SENSITISATION - Category 1
Eye Dam./Irrit. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Dam./Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3
Repr. 1B, H360F (Fertility)	REPRODUCTIVE TOXICITY (Fertility) - Category 1B
Aquatic Chronic 2, H411	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3, H412	AQUATIC HAZARD (LONG-TERM) - Category 3
Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Skin Corr./Irrit. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Skin Corr./Irrit. 1C, H314	SKIN CORROSION/IRRITATION - Category 1C
Skin Sens. 1, H317	SKIN SENSITISATION - Category 1
Eye Dam./Irrit. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Dam./Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4

STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3
Repr. 1B, H360F (Fertility)	REPRODUCTIVE TOXICITY (Fertility) - Category 1B
Aquatic Chronic 2, H411	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3, H412	AQUATIC HAZARD (LONG-TERM) - Category 3

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