

Trade name: Hardener FH for cds-Adhesive

Version: 2 / GB

Date revised: 13.12.2024

Substance number: 11465

Replaces Version: 1 / GB

Print date: 13.12.2024

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

1.1. Product identifier

Hardener FH for cds-Adhesive

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

Use of the substance/preparation

Coating material

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

cds Polymere GmbH & Co. KG
 Gau-Bickelheimer Str. 72
 55576 Sprendlingen/Rhh.
 Telephone no. +49(6701) 9350-0
 Fax no. +49(6701) 9350-50

1.4. Emergency telephone number

cds-Labor / Tel. +49 (67 01) 93 50-28 (This number is reachable monday to friday from 8 am to 5 pm)

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Skin Corr. 1B	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Repr. 2	H361fd
STOT RE 1	H372
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
 For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

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H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains 3,6,9-Triazaundecan-1,11-diamin; 3-aminopropyltriethoxysilane; 2-piperazin-1-ylethylamine; Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols; Fatty acids C18 unsat., reaction products with tetraethylenepentamine

2.3. Other hazards

No special hazards have to be mentioned.

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients *****Hazardous ingredients****Fatty acids C18 unsat., reaction products with tetraethylenepentamine**

CAS No.	1226892-45-0		
EINECS no.	629-725-6		
Registration no.	01-2119487006-38-XXXX		
Concentration	>= 25	< 50	%
Classification (Regulation (EC) No. 1272/2008)			
	Skin Corr. 1C	H314	
	Eye Dam. 1	H318	
	Skin Sens. 1A	H317	
	Aquatic Acute 1	H400	
	Aquatic Chronic 1	H410	

Concentration limits (Regulation (EC) No. 1272/2008)

Aquatic Acute 1	H400	M = 10
Aquatic Chronic 1	H410	M = 1

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

EINECS no.	701-443-9		
Registration no.	01-2119980970-27-XXXX		
Concentration	>= 10	< 25	%
Classification (Regulation (EC) No. 1272/2008)			
	Skin Irrit. 2	H315	
	Skin Sens. 1A	H317	
	Aquatic Chronic 2	H411	

2-piperazin-1-ylethylamine

CAS No.	140-31-8		
EINECS no.	205-411-0		
Registration no.	01-2119471486-30-XXXX		

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Concentration	>=	10	<	25	%
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Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 3	H311
Repr. 2	H361
STOT RE 1	H372
Skin Corr. 1B	H314
Eye Dam. 1	H318
Acute Tox. 4	H302
Skin Sens. 1	H317
Aquatic Chronic 3	H412

ATE	dermal	866	mg/kg
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3,6,9-Triazaundecan-1,11-diamin

CAS No.	112-57-2, 90640-66-7
EINECS no.	203-986-2
Registration no.	01-2119487290-37-XXXX

Concentration	>=	10	<	20	%
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Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Acute Tox. 4	H312
Skin Corr. 1B	H314
Skin Sens. 1	H317
Aquatic Chronic 2	H411

ATE	oral	1.716	mg/kg
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ATE	dermal	1.260	mg/kg
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3-aminopropyltriethoxysilane

CAS No.	919-30-2
EINECS no.	213-048-4
Registration no.	01-2119480479-24-XXXX

Concentration	>=	5	<	10	%
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Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Skin Corr. 1B	H314
Eye Dam. 1	H318
Skin Sens. 1	H317

ATE	oral	200	mg/kg
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SECTION 4: First aid measures *****4.1. Description of first aid measures****General information**

Remove contaminated, soaked clothing immediately and dispose of safely. Adhere to personal protective measures when giving first aid. Clean body thoroughly (bath, shower). In any case show the physician the Safety Data Sheet.

After inhalation

Ensure supply of fresh air. Remove affected person from danger area. Seek medical advice immediately. Give a Cortison spray at an early stage.

After skin contact

Wash off immediately with soap and water. Seek medical advice immediately.

After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Take medical treatment.

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After ingestion

Call in a physician immediately and show him the Safety Data Sheet. Rinse mouth thoroughly with water. Let plenty of water be drunk in small gulps. Do not induce vomiting.

Adhere to personal protective measures when giving first aid

First aider: Pay attention to self-protection!

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

Until now no symptoms known so far.

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

Hints for the physician / hazards

In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.

SECTION 5: Firefighting measures ***

5.1. Extinguishing media

Suitable extinguishing media

Dry powder

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. Carbon monoxide (CO); Carbon dioxide (CO₂); Pyrolysis products

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Do not inhale explosion and/or combustion gases. In case of combustion use a suitable breathing apparatus. Wear full protective suit.

Other information

Collect contaminated fire-fighting water separately, must not be discharged into the drains. Fire residues and contaminated fire-fighting water must be disposed of in accordance with the local regulations. Observe manufacturer's / distributor's instructions.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use breathing apparatus if exposed to vapours/dust/aerosol. Avoid contact with skin, eyes and clothing. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. Retain and dispose of contaminated wash water. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Pick up with absorbent material. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Containers in which spilt substance has been collected must be adequately labelled. Dispose of absorbed material in accordance with the regulations.

6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8.

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SECTION 7: Handling and storage ***

7.1. Precautions for safe handling

Advice on safe handling

Avoid formation of aerosols. Perform filling operations only at stations with exhaust ventilation facilities. Provide suitable exhaust ventilation at the processing machines. If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in original packaging, tightly closed. Storage rooms must be properly ventilated. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Provide solvent-resistant and impermeable floor.

Hints on storage assembly

Do not store together with foodstuffs.

Further information on storage conditions

Do not keep at temperatures above 20 °C.

7.3. Specific end use(s)

Read attached instructions before use.

SECTION 8: Exposure controls/personal protection ***

8.1. Control parameters

Other information

Abbreviations: E = respirable part, A = alveoli absorbable part
There are not known any further control parameters.

Derived No/Minimal Effect Levels (DNEL/DMEL) ***

2-piperazin-1-ylethylamine

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	10,6	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	10,6	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	0,015	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Short term	

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Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	0,08	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	3,33	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Short term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	20	mg/kg/d

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	2,87	mg/kg

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1,21	mg/m ³

3,6,9-Triazaundecan-1,11-diamin

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	0,25	mg/cm ²

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	0,82	mg/m ³

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,4	mg/kg

Type of value	Derived No Effect Level (DNEL)	
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Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	9,87	mg/m ³

3-aminopropyltriethoxysilane

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	14	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	2	mg/kg

Predicted No Effect Concentration (PNEC) ***

2-piperazin-1-ylethylamine

Type of value	PNEC	
Type	Freshwater	
Concentration	0,058	mg/l

Type of value	PNEC	
Type	Marine	
Concentration	0,0058	mg/l

Type of value	PNEC	
Type	Water (intermittent release)	
Concentration	0,58	mg/l

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	250	mg/l

Type of value	PNEC	
Type	Sediment	
Concentration	215	mg/kg

Type of value	PNEC	
Type	Marine sediment	
Concentration	21,5	mg/kg

Type of value	PNEC	
Type	Soil	
Concentration	1	mg/kg

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Type of value	PNEC	
Type	Freshwater	
Concentration	0,0115	mg/l

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Type of value	PNEC		
Type	Marine		
Concentration	0,00115		mg/l

3,6,9-Triazaundecan-1,11-diamin

Type of value	PNEC		
Type	Freshwater		
Concentration	0,01		mg/l

Type of value	PNEC		
Type	Water (intermittent release)		
Concentration	0,068		mg/l

Type of value	PNEC		
Type	Saltwater		
Concentration	0,001		mg/l

Type of value	PNEC		
Type	Sewage treatment plant (STP)		
Concentration	4,6		mg/l

Type of value	PNEC		
Type	Freshwater sediment		
Concentration	3,198		mg/kg

Type of value	PNEC		
Type	Marine sediment		
Concentration	0,32		mg/kg

Type of value	PNEC		
Type	Soil		
Concentration	2,5		mg/kg

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Type of value	PNEC		
Type	Freshwater		
Concentration	0,0307		mg/l

Type of value	PNEC		
Type	Saltwater		
Concentration	0,00307		mg/l

Type of value	PNEC		
Type	Freshwater sediment		
Concentration	119,8		mg/kg

Type of value	PNEC		
Type	Marine sediment		
Concentration	11,98		mg/l

Type of value	PNEC		
Type	Soil		
Concentration	9,44		mg/kg

Type of value	PNEC		
Type	Sewage treatment plant (STP)		
Concentration	2,3		mg/l

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3-aminopropyltriethoxysilane

Type of value	PNEC		
Type	Saltwater		
Concentration	0,05		mg/l
Type of value	PNEC		
Type	Marine sediment		
Concentration	0,18		mg/kg
Type of value	PNEC		
Type	Soil		
Concentration	0,069		mg/kg
Type of value	PNEC		
Type	Sewage treatment plant (STP)		
Concentration	0,81	1,3	mg/l
Type of value	PNEC		
Type	Freshwater		
Concentration	0,5		mg/l
Type of value	PNEC		
Type	Freshwater sediment		
Concentration	1,8		mg/kg

8.2. Exposure controls

General protective and hygiene measures

Hold emergency shower available. Hold eye wash fountain available. Do not inhale gases/vapours/aerosols. Avoid contact with skin and eyes. Do not eat, drink or smoke during work time. Storage of foodstuffs in work rooms is forbidden. Wash hands before breaks and after work. Clean skin thoroughly after work; apply skin cream.

Respiratory protection

If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn. Short term: filter apparatus, combination filter A-P2; The respiratory protection must comply with the relevant CEN standards.

Hand protection

Chemical resistant gloves
 Appropriate Material neoprene
 Material thickness >= 0,5 mm
 Breakthrough time >= 480 min
 Hand protection must comply with EN 374.
 Check leak-tightness/impermeability prior to use.

Eye protection

Safety glasses with side protection shield; Face shield; Eye protection must comply with EN 166.

Body protection

Clothing as usual in the chemical industry. Protective shoes; Personal protective clothing must comply with the relevant CEN standards.

SECTION 9: Physical and chemical properties ***

9.1. Information on basic physical and chemical properties

Physical state liquid

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Odour	amine-like		
Colour	yellowish		
Melting point			
Remarks	not determined		
Freezing point			
Remarks	not determined		
Boiling point or initial boiling point and boiling range			
Remarks	not determined		
Flammability			
evaluation	not determined		
Upper and lower explosive limits			
Remarks	not determined		
Flash point			
Value	> 100		°C
Ignition temperature			
Remarks	not determined		
Decomposition temperature			
Remarks	not determined		
pH value			
Remarks	Not applicable		
Viscosity			
Remarks	not determined		
Solubility(ies)			
Remarks	not determined		
Partition coefficient n-octanol/water (log value)			
Remarks	not determined		
Vapour pressure			
Remarks	not determined		
Density and/or relative density			
Value	0,96		g/cm ³
Temperature	23	°C	
Relative vapour density			
Remarks	not determined		
9.2. Other information			
Odour threshold			
Remarks	not determined		
Evaporation rate (ether = 1) :			
Remarks	not determined		
Solubility in water			
Remarks	insoluble		
Explosive properties			
evaluation	not determined		
Oxidising properties			
Remarks	not determined		
Other information			

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None known

SECTION 10: Stability and reactivity ***

10.1. Reactivity

No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability

No hazardous reactions known.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

No hazardous reactions known.

10.5. Incompatible materials

Reactions with strong oxidising agents. Reactions with strong acids. Reactions with strong alkalis.

10.6. Hazardous decomposition products

Toxic gases/vapours, Irritant gases/vapours

SECTION 11: Toxicological information ***

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

Acute oral toxicity

ATE	2.374,59	mg/kg
	35	
Method	calculated value (Regulation (EC) No. 1272/2008)	
Remarks	Based on available data, the classification criteria are not met.	

Acute oral toxicity (Components)

3,6,9-Triazaundecan-1,11-diamin

Species	rat	
LD50	1716	mg/kg
Method	OECD 401	

2-piperazin-1-ylethylamine

Species	rat	
LD50	2140	mg/kg

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Species	rat	
LD50	> 2000	mg/kg
Method	OECD 423	

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species	rat	
LD50	> 2000	mg/kg
Method	OECD 423	

3-aminopropyltriethoxysilane

Species	rat	
LD50	1490	mg/kg
Method	EPA	

3-aminopropyltriethoxysilane

Species	rat	
NOAEL	200	mg/kg
Duration of exposure	90	d

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Acute dermal toxicity

ATE	2.717,45	mg/kg
	61	
Method	calculated value (Regulation (EC) No. 1272/2008)	
Remarks	Based on available data, the classification criteria are not met.	

Acute dermal toxicity (Components)**3,6,9-Triazaundecan-1,11-diamin**

Species	rabbit	
LD50	1260	mg/kg
Method	OECD 402	

2-piperazin-1-ylethylamine

Species	rabbit	
LD50	866	mg/kg

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Species	rat	
LD50	> 2000	mg/kg
Method	OECD 402	

3-aminopropyltriethoxysilane

Species	rabbit	
LD50	> 2000	mg/kg
Method	EPA	

Acute inhalational toxicity

Remarks	Based on available data, the classification criteria are not met.
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Acute inhalative toxicity (Components)**Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols**

Species	rat	
LC0	> 4,9	mg/l
Duration of exposure	4	h
Administration/Form	Dust/Mist	
Method	OECD 403	

3-aminopropyltriethoxysilane

Species	rat	
LC50	> 20	mg/l
Duration of exposure	4	h
Administration/Form	Vapors	
Method	OECD 403	

Skin corrosion/irritation

evaluation	corrosive
Remarks	The classification criteria are met.

Serious eye damage/irritation

evaluation	corrosive
Remarks	The classification criteria are met.

Sensitization

evaluation	May cause sensitization by skin contact.
Remarks	The classification criteria are met.

Subacute, subchronic, chronic toxicity

Remarks	not determined
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Mutagenicity

Remarks	Based on available data, the classification criteria are not met.
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Reproductive toxicity

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evaluation
Remarks Suspected of damaging fertility. Suspected of damaging the unborn child.
The classification criteria are met.

Carcinogenicity

Remarks Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity (STOT)**Single exposure**

Remarks Based on available data, the classification criteria are not met.

Repeated exposure

Remarks The classification criteria are met.

evaluation Causes damage to organs through prolonged or repeated exposure

Aspiration hazard

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

11.2 Information on other hazards**Endocrine disrupting properties with respect to humans**

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

Experience in practice

Inhalation may lead to irritation of the respiratory tract.

Other information

No toxicological data are available.

SECTION 12: Ecological information *****12.1. Toxicity****General information**

not determined

Fish toxicity (Components)**3,6,9-Triazaundecan-1,11-diamin**

Species	guppy (<i>Poecilia reticulata</i>)		
LC50	420		mg/l
Duration of exposure	96	h	

2-piperazin-1-ylethylamine

Species	Fathead minnow (<i>Pimephales promelas</i>)		
LC50	2190		mg/l
Duration of exposure	96	h	

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Species	zebra fish (<i>Brachydanio rerio</i>)		
LL50	14,8		mg/l
Duration of exposure	96	h	
Method	OECD 203		

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species	zebra fish (<i>Brachydanio rerio</i>)		
LC50	0,19		mg/l
Duration of exposure	96	h	
Method	OECD 203		

3-aminopropyltriethoxysilane

Species	Zebraerbling		
LC0	>	934	mg/l

Daphnia toxicity (Components)

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3,6,9-Triazaundecan-1,11-diamin

Species	Daphnia magna		
EC50	24,1		mg/l
Duration of exposure	48	h	

2-piperazin-1-ylethylamine

Species	Daphnia magna		
EC50	58		mg/l
Duration of exposure	48	h	

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Species	Daphnia magna		
EC50	4,6		mg/l
Duration of exposure	48	h	
Method	OECD 202		

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species	Daphnia magna		
EC50	0,18		mg/l
Duration of exposure	48	h	
Method	OECD 202		

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species	Daphnia magna		
NOEC	0,32		mg/l
Method	OECD 211		

3-aminopropyltriethoxysilane

Species	Daphnia magna		
EC50	331		mg/l
Duration of exposure	48	h	

Algae toxicity (Components) *****3,6,9-Triazaundecan-1,11-diamin**

Species	Selenastrum capricornutum		
ErC50	6,8		mg/l
Duration of exposure	72	h	
Method	OECD 201		

3,6,9-Triazaundecan-1,11-diamin

Species	Pseudokirchneriella subcapitata		
NOEC	0,5		mg/l
Duration of exposure	72	h	
Method	OECD 201		

2-piperazin-1-ylethylamine

Species	Pseudokirchneriella subcapitata		
EC50	> 1000		mg/l
Duration of exposure	72	h	

Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

Species	Scenedesmus subspicatus		
EL50	3,14		mg/l
Duration of exposure	72	h	
Method	OECD 201		

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species	Pseudokirchneriella subcapitata		
EC50	0,638		mg/l
Duration of exposure	72	h	
Method	OECD 201		

3-aminopropyltriethoxysilane

Species	Desmodesmus subspicatus		
EC50	> 1000		mg/l

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Duration of exposure 72 h
Method OECD 201

3-aminopropyltriethoxysilane

Species Desmodemus subspicatus
NOEC 1,3 mg/l
Duration of exposure 72 h
Method OECD 201

Bacteria toxicity (Components)

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Species activated sludge
EC50 114 mg/l
Duration of exposure 3 h
Method OECD 209

3,6,9-Triazaundecan-1,11-diamin

Species activated sludge
EC50 97,3 mg/l
Duration of exposure 2 h

3-aminopropyltriethoxysilane

Species Pseudomonas putida
EC10 13 mg/l
Duration of exposure 5,75 h

12.2. Persistence and degradability

General information

not determined

Biodegradability (Components)

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

Value 24 %
Duration of test 28 d
evaluation not readily degradable
Method OECD 301 D

12.3. Bioaccumulative potential

General information

not determined

Partition coefficient n-octanol/water (log value)

Remarks not determined

Octanol/water partition coefficient (log Pow) (Components)

3-aminopropyltriethoxysilane

log Pow 1,7

12.4. Mobility in soil

General information

not determined

12.5. Results of PBT and vPvB assessment

General information

not determined

Results of PBT and vPvB assessment

The product contains no PBT substances
The product contains no vPvB substances.

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12.6 Endocrine disrupting properties

General information

not determined

Endocrine disrupting properties with respect to the environment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

General information

not determined

General information / ecology

Do not allow to enter soil, waterways or waste water canal. Avoid release into the atmosphere.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Allocation of a waste code number, according to the European Waste Catalogue (EWC), should be carried out in agreement with the regional waste disposal company.

Disposal recommendations for packaging

Packaging that cannot be cleaned should be disposed off in agreement with the regional waste disposal company.

SECTION 14: Transport information ***

Trade name: Hardener FH for cds-Adhesive







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	Land transport ADR/RID	Marine transport IMDG/GGVSee	Air transport ICAO/IATA
14.1. UN number or ID number	2735	2735	2735
14.2. UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-piperazin-1-ylethylamine, Fatty acids C18 unsat., reaction products with tetraethylenepentamine)	AMINES, LIQUID, CORROSIVE, N.O.S. (2-piperazin-1-ylethylamine, Fatty acids C18 unsat., reaction products with tetraethylenepentamine)	AMINES, LIQUID, CORROSIVE, N.O.S. (2-piperazin-1-ylethylamine, Fatty acids C18 unsat., reaction products with tetraethylenepentamine)
14.3. Transport hazard class(es)	8	8	8
Label			
14.4. Packing group	II	II	II
Limited Quantity	1 I	1 I	
Transport category	2		
14.5. Environmental hazards	 ENVIRONMENTALLY HAZARDOUS	Marine Pollutant  ENVIRONMENTALLY HAZARDOUS	 ENVIRONMENTALLY HAZARDOUS
Tunnel restriction code	E		

Information for all modes of transport

14.6. Special precautions for user

The relevant transport regulations have to be considered.

Other information

14.7 Maritime transport in bulk according to IMO instruments

no data

SECTION 15: Regulatory information ***

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

Major-accident categories acc. 2012/18/EU

Category	E1	Hazardous to the Aquatic Environment	100000	kg	200000	kg
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VOC

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VOC (EU) 0 % 0 g/l

Other regulations, restrictions and prohibition regulationsHandling epoxy resin systems safely (published by PlasticsEurope) www.plasticseurope.org**Restriction according to annex XVII to regulation (EU) No 1907/2006**

Conditions of restriction for the entries Annex XVII REACH should be considered.

Other information

The product does not contain substances according to: Candidate List for inclusion in Annex XIV of Regulation (EC) No. 1907/2006 (REACH).

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification (Regulation (EC) No. 1272/2008)

Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Repr. 2	H361fd	Calculation method
STOT RE 1	H372	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

Hazard statements listed in Chapter 2/3

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H361	Suspected of damaging fertility or the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

CLP categories listed in Chapter 2/3

Acute Tox. 3	Acute toxicity, Category 3
Acute Tox. 4	Acute toxicity, Category 4
Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic, Category 3
Eye Dam. 1	Serious eye damage, Category 1
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion, Category 1B
Skin Corr. 1C	Skin corrosion, Category 1C
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1A	Skin sensitization, Category 1A

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Specific target organ toxicity - repeated exposure, Category 1

Abbreviations

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route

RID: Règlement concernant le transport international ferroviaire de marchandises dangereuses

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

CAS: Chemical Abstracts Service

EAK: Europäischer Abfallkatalog

VOC: Volatile Organic Compound

MAK: Maximale Arbeitsplatz-Konzentration

AGW: Arbeitsplatzgrenzwert

BGW: Biologischer Grenzwert

NOEC: No observable effect concentration

LD: Lethal dose

LC: Lethal concentration

PBT: Persistent, Bioaccumulative and Toxic

vPvB: Very persistent and very bioaccumulative

SVHC: Substances of very high concern

DNEL: Derived no effect level

PNEC: Predicted no effect concentration

OECD: Organisation for Economic Co-operation and Development

REACH: Registration, Evaluation, Autohorisation and Restriction of Chemicals

TRGS: Technische Regeln für Gefahrstoffe

Information about Safety Data Sheets Preparers

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Supplemental information

This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.