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
Information provided by / telephone info@cds-polymere.de

1.4. Emergency telephone number

Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

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.
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-triazaundecamethylenediamine; 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

3.2. Mixtures

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				
Concentration	>=	10	<	25	%

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

3,6,9-triazaundecamethylenediamine

CAS No.	112-57-2				
EINECS no.	203-986-2				
Registration no.	01-2119487290-37-XXXX				
Concentration	>=	10	<	20	%

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
ATE	dermal	1.260	mg/kg

3-aminopropyltriethoxysilane

CAS No.	919-30-2				
EINECS no.	213-048-4				
Registration no.	01-2119480479-24-XXXX				
Concentration	>=	5	<	10	%

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

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.

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.

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/m³

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/m³

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/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Short term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	0,08	mg/m³

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/m³

3,6,9-triazaundecamethylenediamine

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/cm²

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/m³

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)
Reference group	Worker
Duration of exposure	Long term
Route of exposure	inhalative
Mode of action	Systemic effects

Concentration	9,87	mg/m³

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/m³

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

3,6,9-triazaundecamethylenediamine

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

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
Odour amine-like
Colour yellow

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

Value	11	to	12
Concentration/H2O	1	%	
Temperature	20	°C	

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/cm³
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 partially miscible

Explosive properties

evaluation not determined

Oxidising properties

Remarks not determined

Other information

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 alkalies.

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
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-triazaundecamethylenediamine

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	

Acute dermal toxicity

ATE	2.717,4561		mg/kg
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-triazaundecamethylenediamine

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.

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

Mutagenicity

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

Reproductive toxicity

evaluation: Suspected of damaging fertility. Suspected of damaging the unborn child.
Remarks: 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-triazaundecamethylenediamine

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

2-piperazin-1-ylethylamine

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

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

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

Fatty acids C18 unsat., reaction products with tetraethylenepentamine

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

3-aminopropyltriethoxysilane

Species	Zebrabaerbling		
LC0	>	934	mg/l

Daphnia toxicity (Components)

3,6,9-triazaundecamethylenediamine

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-triazaundecamethylenediamine

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

3,6,9-triazaundecamethylenediamine

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
Duration of exposure	72	h	
Method	OECD 201		

3-aminopropyltriethoxysilane

Species	Desmodesmus 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-triazaundecamethylenediamine

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.

12.6 Endocrine disrupting properties

General information

not determined

Endocrine disrupting properties with respect to the envrionment

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

	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 l	1 l	
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

VOC

VOC (EU)	0	%	0	g/l

Other regulations, restrictions and prohibition regulations

Handling 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

STOT RE 1	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.