

Trade name: Hardener FH-Super for cds-AGL SlotRestore flex

Version: 3 / GB

Date revised: 18.12.2025

Substance number: 19487

Replaces Version: 2 / GB

Print date: 18.12.2025

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

1.1. Product identifier

Hardener FH-Super for cds-AGL SlotRestore flex

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 info@cds-polymere.de

by / telephone

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 SE 3	H335
STOT RE 1	H372
Asp. Tox. 1	H304
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

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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.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
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	2-piperazin-1-ylethylamine; Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols; (Z)-octadec-9-enylamine; amines, coco alkyl; 2,2,4-Trimethylhexane-1,6-diamine; benzyl alcohol
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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****Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols**

EINECS no.	701-443-9		
Registration no.	01-2119980970-27-XXXX		
Concentration	>= 50		%
Classification (Regulation (EC) No. 1272/2008)	Skin Irrit. 2	H315	
	Skin Sens. 1A	H317	
	Aquatic Chronic 2	H411	

(Z)-octadec-9-enylamine

CAS No.	112-90-3		
EINECS no.	204-015-5		
Registration no.	01-2119473797-19-XXXX		
Concentration	>= 20	< 25	%
Classification (Regulation (EC) No. 1272/2008)	Acute Tox. 4	H302	
	Asp. Tox. 1	H304	
	Skin Corr. 1B	H314	
	STOT SE 3	H335	
	STOT RE 2	H373	
	Aquatic Acute 1	H400	
	Aquatic Chronic 1	H410	

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

Aquatic Acute 1 M = 10

Aquatic Chronic 1 M = 10

ATE oral 1.200 mg/kg

2-piperazin-1-ylethylamine

CAS No. 140-31-8

EINECS no. 205-411-0

Registration no. 01-2119471486-30-XXXX

Concentration \geq 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

benzyl alcohol

CAS No. 100-51-6

EINECS no. 202-859-9

Registration no. 01-2119492630-38-XXXX

Concentration \geq 1 < 10 %

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

Acute Tox. 4 H302

Eye Irrit. 2 H319

Skin Sens. 1B H317

ATE oral 1.200 mg/kg

2,4,6-tris(dimethylaminomethyl)phenol

CAS No. 90-72-2

EINECS no. 202-013-9

Registration no. 01-2119560597-27-XXXX

Concentration \geq 1 < 10 %

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

Acute Tox. 4 H302

Skin Irrit. 2 H315

Eye Irrit. 2 H319

amines, coco alkyl

CAS No. 61788-46-3

EINECS no. 262-977-1

Registration no. 01-2119473798-17-XXXX

Concentration \geq 1 < 3 %

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

Acute Tox. 4 H302

Asp. Tox. 1 H304

Skin Corr. 1B H314

STOT SE 3 H335

STOT RE 2 H373

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

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

Aquatic Acute 1 M = 10

Aquatic Chronic M = 10

1

ATE oral 1.300 mg/kg

2,2,4-Trimethylhexane-1,6-diamine

CAS No. 25513-64-8

EINECS no. 247-063-2

Registration no. 01-2119560598-25-XXXX

Concentration \geq < 2,5 %

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

Acute Tox. 4 H302

Skin Corr. 1A H314

Eye Dam. 1 H318

Skin Sens. 1A H317

ATE oral 910 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

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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)

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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)

benzyl alcohol

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	8	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	22	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	110	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	40	mg/kg

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	

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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

amines, coco alkyl

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 0,38 mg/m³

2,4,6-tris(dimethylaminomethyl)phenol

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 0,53 mg/m³

Type of value Derived No Effect Level (DNEL)



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Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	0,15	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Short term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	2,1	mg/m ³

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	0,6	mg/kg/d

(Z)-octadec-9-enylamine

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	0,38	mg/m ³

Predicted No Effect Concentration (PNEC)

benzyl alcohol

Type of value	PNEC	
Type	Freshwater	
Concentration	1	mg/l

Type of value	PNEC	
Type	Water (intermittent release)	
Concentration	2,31	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0,1	mg/l

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	39	mg/l

Type of value	PNEC	
Type	Freshwater sediment	
Concentration	5,27	mg/kg

Type of value	PNEC	
Type	Marine sediment	
Concentration	0,527	mg/kg

Type of value	PNEC	
Type	Soil	

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Concentration 0,456 mg/kg

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

2,2,4-Trimethylhexane-1,6-diamine

Type of value PNEC
 Type Freshwater
 Concentration 0,102 mg/l

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

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

amines, coco alkyl

Type of value PNEC
 Type Freshwater
 Concentration 0,00026 mg/l

Type of value PNEC
 Type Marine



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Concentration	0,000026	mg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	0,55	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,1794	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,01794	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	10	mg/kg

2,4,6-tris(dimethylaminomethyl)phenol

Type of value	PNEC	
Type	Water	
Concentration	0,046	mg/l
Type of value	PNEC	
Type	Marine	
Concentration	0,0046	mg/l
Type of value	PNEC	
Type	Water (intermittent release)	
Concentration	0,46	mg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	0,2	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,262	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,026	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0,025	mg/kg

(Z)-octadec-9-enylamine

Type of value	PNEC	
Type	Freshwater	
Concentration	0,000026	mg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0,000026	mg/l
Type of value	PNEC	

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Type	Sewage treatment plant (STP)	
Concentration	0,55	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,1794	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,01794	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	10	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 nitrile
 Material thickness \geq 0,3 mm
 Breakthrough time \geq 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	yellowish	
Melting point		
Remarks	not determined	
Freezing point		
Remarks	not determined	
Boiling point or initial boiling point and boiling range		
Value	> 200	°C
Pressure	1013 hPa	

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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 valueValue 11 to 12
Concentration/H₂O 1 %**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 densityValue 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 immiscible

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.

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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	3.986,20	mg/kg
	74	
Method	calculated value (Regulation (EC) No. 1272/2008)	
Remarks	Based on available data, the classification criteria are not met.	

Acute oral toxicity (Components)**benzyl alcohol**

ATE	1200	mg/kg
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2-piperazin-1-ylethylamine

Species	rat	
LD50	2140	mg/kg

2,2,4-Trimethylhexane-1,6-diamine

Species	rat	
LD50	910	mg/kg

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

Species	rat	
LD50	> 2000	mg/kg
Method	OECD 423	

amines, coco alkyl

Species	rat	
LD50	1300	mg/kg
Method	OECD 401	

2,4,6-tris(dimethylaminomethyl)phenol

Species	rat	
LD50	2169	mg/kg
Remarks	The classification criteria are met.	

(Z)-octadec-9-enylamine

Species	rat	
LD50	1200 to 2000	mg/kg
Method	OECD 401	

Acute dermal toxicity

ATE	5.162,44	mg/kg
	41	
Method	calculated value (Regulation (EC) No. 1272/2008)	
Remarks	Based on available data, the classification criteria are not met.	

Acute dermal toxicity (Components)**benzyl alcohol**

Species	rabbit
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LD50 > 2000 mg/kg

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

Acute inhalational toxicity

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

Acute inhalative toxicity (Components)**benzyl alcohol**

Species rat

LC50 > 4,178 mg/l

Duration of exposure 4 h

Administration/Form Dust/Mist

Method OECD 403

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

benzyl alcohol

Remarks Expert judgement

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

Remarks Saturation Concentration: No demonstrable toxic effect

Skin corrosion/irritation

evaluation corrosive

Remarks The classification criteria are met.

Skin corrosion/irritation (Components)**amines, coco alkyl**

Species rabbit

evaluation corrosive

Method OECD 404

(Z)-octadec-9-enylamine

evaluation corrosive

2-piperazin-1-ylethylamine

evaluation corrosive

2,2,4-Trimethylhexane-1,6-diamine

evaluation strongly corrosive

Method OECD 404

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

Species rabbit

evaluation irritant

Method OECD 404

2,4,6-tris(dimethylaminomethyl)phenol

evaluation irritant

Serious eye damage/irritation

evaluation corrosive

Remarks The classification criteria are met.

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Serious eye damage/irritation (Components)**benzyl alcohol**

Species	rabbit
evaluation	irritant
Method	OECD 405

(Z)-octadec-9-enylamine

evaluation	corrosive
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2-piperazin-1-ylethylamine

evaluation	corrosive
------------	-----------

2,2,4-Trimethylhexane-1,6-diamine

evaluation	corrosive
Method	OECD 405

amines, coco alkyl

evaluation	corrosive
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2,4,6-tris(dimethylaminomethyl)phenol

evaluation	irritant
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Sensitization

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

Sensitization (Components)**benzyl alcohol**

evaluation	sensitizing
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2-piperazin-1-ylethylamine

Species	guinea pig
evaluation	sensitizing
Method	OECD 406

2,2,4-Trimethylhexane-1,6-diamine

Species	guinea pig
evaluation	strongly sensitizing
Method	OECD 406

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

Species	rabbit
evaluation	strongly sensitizing
Method	OECD 429

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

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

Reproduction toxicity (Components)**2-piperazin-1-ylethylamine**

Route of exposure	oral
Dose	150 mg/kg/d
evaluation	Suspected of damaging fertility or the unborn child.

Carcinogenicity

Remarks	Based on available data, the classification criteria are not met.
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Specific Target Organ Toxicity (STOT)

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Single exposure

Remarks
evaluation

The classification criteria are met.
May cause respiratory irritation.

Repeated exposure

Remarks
evaluation

The classification criteria are met.
Causes damage to organs through prolonged or repeated exposure

Specific Target Organ Toxicity (STOT) (Components)**amines, coco alkyl**

evaluation

May cause respiratory irritation.

amines, coco alkyl

evaluation

May cause damage to organs through prolonged or repeated exposure

(Z)-octadec-9-enylamine

evaluation

May cause respiratory irritation.

(Z)-octadec-9-enylamine

evaluation

May cause damage to organs through prolonged or repeated exposure

2-piperazin-1-ylethylamine

evaluation

Causes damage to organs through prolonged or repeated exposure

Aspiration hazard

The classification criteria are met.
Harmful: may cause lung damage if swallowed.

Aspiration hazard (Components)**(Z)-octadec-9-enylamine**

Harmful: may cause lung damage if swallowed.

amines, coco alkyl

Harmful: may cause lung damage if swallowed.

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)**benzyl alcohol**

Species	Fathead minnow (Pimephales promelas)		
LC50	460		mg/l
Duration of exposure	96	h	

benzyl alcohol

Species	golden orfe (Leuciscus idus)		
LC50	> 645		mg/l
Duration of exposure	96	h	

2-piperazin-1-ylethylamine

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

2,2,4-Trimethylhexane-1,6-diamine

Species	golden orfe (<i>Leuciscus idus</i>)		
LC50	174		mg/l
Duration of exposure	48	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		

amines, coco alkyl

Species	Fathead minnow (<i>Pimephales promelas</i>)		
LC50	> 0,01	to 0,1	mg/l
Method	OECD 203		

2,4,6-tris(dimethylaminomethyl)phenol

Species	carp (<i>Cyprinus carpio</i>)		
LC50	175		mg/l
Duration of exposure	96	h	
Method	OECD 203		

(Z)-octadec-9-enylamine

Species	Fathead minnow (<i>Pimephales promelas</i>)		
LC50	> 0,01	to 0,1	mg/l
Duration of exposure	96	h	
Method	OECD 203		

Daphnia toxicity (Components)**benzyl alcohol**

Species	Daphnia magna		
EC50	230		mg/l
Duration of exposure	48	h	
Method	OECD 202		

benzyl alcohol

Species	Daphnia magna		
NOEC	51		mg/l
Duration of exposure	21	d	

2-piperazin-1-ylethylamine

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

2,2,4-Trimethylhexane-1,6-diamine

Species	Daphnia magna		
EC50	31,5		mg/l
Duration of exposure	24	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		

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

NOEC	0,115		mg/l
Duration of exposure	21	d	
Method	OECD 211		
Remarks	Test conducted with a similar formulation.		

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amines, coco alkyl

Species	Daphnia magna			
EC50	> 0,01	to	0,1	mg/l
Duration of exposure	48	h		
Method	OECD 202			

amines, coco alkyl

Species	Daphnia magna			
NOEC	> 0,01	to	0,1	
Duration of exposure	21	Days		
Method	OECD 211			

(Z)-octadec-9-enylamine

Species	Daphnia magna			
EC50	> 0,01	to	0,1	mg/l
Duration of exposure	48	h		
Method	OECD 202			

2,4,6-tris(dimethylaminomethyl)phenol

Species	Daphnia magna			
EC50	718			mg/l
Duration of exposure	96	h		

Algae toxicity (Components)**benzyl alcohol**

Species	Pseudokirchneriella subcapitata			
IC50	770			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		

2,2,4-Trimethylhexane-1,6-diamine

Species	Scenedesmus subspicatus			
ErC50	43,5			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			

amines, coco alkyl

Species	Scenedesmus subspicatus			
EC50	> 0,01	to	0,1	mg/l
Duration of exposure	72	h		

2,4,6-tris(dimethylaminomethyl)phenol

Species	Desmodesmus subspicatus			
EC50	84			mg/l
Duration of exposure	72	h		
Method	OECD 201			

2,4,6-tris(dimethylaminomethyl)phenol

Species	Desmodesmus subspicatus			
NOEC	6,25			mg/l
Duration of exposure	72	h		
Method	OECD 201			

(Z)-octadec-9-enylamine

Species	Desmodesmus subspicatus			
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EC50	>	0,01	to	0,1	mg/l
Duration of exposure		72	h		
Method		OECD 201			

Bacteria toxicity (Components)**benzyl alcohol**

Species		Pseudomonas putida			
EC10	>	658			mg/l
Duration of exposure		16	h		

benzyl alcohol

Species		Pseudomonas putida			
EC50		390			mg/l
Duration of exposure		24	h		

2,2,4-Trimethylhexane-1,6-diamine

Species		Pseudomonas putida			
EC50		89			mg/l
Duration of exposure		17	h		

2,4,6-tris(dimethylaminomethyl)phenol

Species		activated sludge			
NOEC		2			mg/l
Duration of exposure		28	h		

12.2. Persistence and degradability**General information**

not determined

Biodegradability (Components)**benzyl alcohol**

Value		95			%
Duration of test		21	d		
evaluation		Readily biodegradable (according to OECD criteria)			
Method		OECD 301A / ISO 7827			

(Z)-octadec-9-enylamine

evaluation		Readily biodegradable (according to OECD criteria)			
Method		OECD 301 D			

2-piperazin-1-ylethylamine

evaluation		not readily degradable			
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2,2,4-Trimethylhexane-1,6-diamine

Remarks		The product is not readily biodegradable according to OECD criteria but is inherently biodegradable.			
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Reaction mass of (1-Phenylethyl)phenols and bis-(1-phenylethyl)phenols

evaluation		not readily degradable			
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amines, coco alkyl

Value	>	60			%
Duration of test		28	d		
evaluation		Readily biodegradable (according to OECD criteria)			
Method		OECD 301 D			

2,4,6-tris(dimethylaminomethyl)phenol

Value		4			%
Duration of test		28	d		
evaluation		not readily degradable			
Method		OECD 301 D			

12.3. Bioaccumulative potential**General information**

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not determined

Partition coefficient n-octanol/water (log value)

Remarks not determined

Octanol/water partition coefficient (log Pow) (Components)**(Z)-octadec-9-enylamine**

log Pow 3,7

benzyl alcohollog Pow 1
Temperature 20 °C**2-piperazin-1-ylethylamine**

log Pow -1.48

2,2,4-Trimethylhexane-1,6-diamine

log Pow -0,3

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

log Pow 3,03

amines, coco alkyl

log Pow 4,33

2,4,6-tris(dimethylaminomethyl)phenol

log Pow -0,66

Bioconcentration factor (BCF) (Components)**(Z)-octadec-9-enylamine**

BCF > 500

benzyl alcohol

BCF 1,37

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

BCF 69 to 190

amines, coco alkyl

BCF 173

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 assessmentThe 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 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

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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	POLYAMINES, LIQUID, CORROSIVE, N.O.S. ((Z)-octadec-9-enylamine, 2-piperazin-1-ylethylamine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. ((Z)-octadec-9-enylamine, 2-piperazin-1-ylethylamine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. ((Z)-octadec-9-enylamine, 2-piperazin-1-ylethylamine)
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

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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

VOC (EU)	0	%	0	g/l
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Other regulations, restrictions and prohibition regulations

Handling epoxy resin systems safely (published by PlasticsEurope) www.plasticseurope.org

This product meets the requirements of Regulation (EC) No. 1935/2004 on the limitation of VOC content. EU2004/42/IIA(j)500(2010): <500g/l VOC

Restriction according to annex XVII to regulation (EU) No 1907/2006

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

GIS-Code

GIS-Code	RE 90
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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: ***

Key literature references and sources for data

SDS
ECHA

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 SE 3	H335	Calculation method
STOT RE 1	H372	Calculation method
Asp. Tox. 1	H304	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.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.

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H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
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.
H373	May cause 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
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1A	Skin corrosion, Category 1A
Skin Corr. 1B	Skin corrosion, Category 1B
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1A	Skin sensitization, Category 1A
Skin Sens. 1B	Skin sensitization, Category 1B
STOT RE 1	Specific target organ toxicity - repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

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



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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.