



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

### IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

3M™ Scotch-Weld™ EC-9300 B/A FST

#### Product Identification Numbers

FS-9100-5461-8      FS-9100-5504-5

7000080430      7100074262

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

##### Identified uses

Adhesive

#### 1.3. Details of the supplier of the safety data sheet

**Address:** 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.

**Telephone:** +44 (0)1344 858 000

**E Mail:** tox.uk@mmm.com

**Website:** www.3M.com/uk

#### 1.4. Emergency telephone number

+44 (0)1344 858 000

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet for each of these components is included. Please do not separate the component Safety Data Sheets from this cover page. The document numbers of the MSDSs for components of this product are:

27-6389-4, 27-5910-8

### TRANSPORTATION INFORMATION

FS-9100-5461-8

### Component 1

**ADR/RID:** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ZINC BORATE), 9, III, (-), ENVIRONMENTALLY HAZARDOUS, ADR Classification Code: M7.

**IMDG-CODE:** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ZINC BORATE), 9, III, IMDG-Code segregation code: NONE, EMS: FA,SF.

**ICAO/IATA:** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ZINC BORATE), 9, III, fish and tree marking may be required (> 5kg/l).

### Component 2

**ADR/RID:** UN3259, AMINES, SOLID, CORROSIVE, N.O.S., (POLY(OXYPROPYLENE)DIAMINE), 8., III, (E), ENVIRONMENTALLY HAZARDOUS, ADR Classification Code: C8.

**IMDG-CODE:** UN3259, AMINES, SOLID,CORROSIVE,N.O.S., (POLY(OXYPROPYLENE)DIAMINE), (ZINC BORATE), 8., III, IMDG-Code segregation code: 18- ALKALIS, Marine Pollutant, (ZINC BORATE), EMS: FA,SB.

**ICAO/IATA:** FORBIDDEN: NOT ALLOWED FOR AIR FREIGHT

FS-9100-5504-5

### Component 1

**ADR/RID:** UN3259, AMINES, SOLID, CORROSIVE, N.O.S., LIMITED QUANTITY, (POLY(OXYPROPYLENE)DIAMINE), 8., III, (E), ADR Classification Code: C8.

**IMDG-CODE:** UN3259, AMINES, SOLID,CORROSIVE,N.O.S., (POLY(OXYPROPYLENE)DIAMINE), 8., III, IMDG-Code segregation code: 18 - ALKALIS, LIMITED QUANTITY, EMS: FA,SB.

**ICAO/IATA:** UN3259, AMINES, SOLID,CORROSIVE,N.O.S., (POLY(OXYPROPYLENE)DIAMINE), 8, III.

### Component 2

**ADR/RID:** UN3077, NOT RESTRICTED AS PER SPECIAL PROVISION 375, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXEMPTION, (ZINC BORATE), III, --.

**IMDG-CODE:** UN3077, NOT RESTRICTED AS PER IMDG CODE 2.10.2.7, MARINE POLLUTANT EXCEPTION, (ZINC BORATE), III, IMDG-Code segregation code: NONE, EMS: --.

**ICAO/IATA:** UN3077, NOT RESTRICTED AS PER SPECIAL PROVISION A197, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXEMPTION, (ZINC BORATE), III.

Refer to section 14 of the kit components for transport information.

## KIT LABEL

### 2.1. Classification of the substance or mixture

#### CLP REGULATION (EC) No 1272/2008

#### CLASSIFICATION:

Substance or Mixture Corrosive to Metals, Category 1 - Met. Corr. 1; H290

Skin Corrosion/ Irritation, Category 1C - Skin Corr. 1C; H314

Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318

Skin Sensitization, Category 1 - Skin Sens. 1; H317

Reproductive Toxicity, Category 2 - Repr. 2; H361fd

Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H336

Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400

Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

For full text of H phrases, see Section 16.

### 2.2. Label elements

#### CLP REGULATION (EC) No 1272/2008

**SIGNAL WORD**

DANGER.

**Symbols**

GHS05 (Corrosion) | GHS07 (Exclamation mark) | GHS08 (Health Hazard) | GHS09 (Environment) |

**Pictograms****Contains:**

Boric acid, zinc salt; 2-piperazin-1-ylethylamine; 1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane; bis-[4-(2,3-epoxypropoxy)phenyl]propane; 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated; Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine ; STANNOUS SULFATE; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol; Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia; 2,4,6-tris(dimethylaminomethyl)phenol

**HAZARD STATEMENTS:**

H290	May be corrosive to metals.
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.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS****Prevention:**

P260B	Do not breathe dust.
P273	Avoid release to the environment.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

**Response:**

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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 CENTRE or doctor/physician.

Refer to Safety Data Sheet for component % unknown values ([www.3M.com/msds](http://www.3M.com/msds)).

**Revision information:**

Kit: Component document group number(s) information was modified.  
 Label: CLP Ingredients - kit components information was modified.  
 Label: CLP Classification information was modified.  
 Label: CLP Environmental Hazard Statements information was modified.  
 Label: CLP Precautionary - Prevention information was modified.



## Safety Data Sheet

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<b>Document group:</b>	27-5910-8	<b>Version number:</b>	14.02
<b>Revision date:</b>	02/02/2022	<b>Supersedes date:</b>	28/01/2022

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

#### 1.1. Product identifier

3M™ Scotch-Weld™ EC-9300 B/A FST Part B

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

##### Identified uses

Adhesive

#### 1.3. Details of the supplier of the safety data sheet

**Address:** 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.  
**Telephone:** +44 (0)1344 858 000  
**E Mail:** tox.uk@mmm.com  
**Website:** www.3M.com/uk

#### 1.4. Emergency telephone number

+44 (0)1344 858 000

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

##### CLASSIFICATION:

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315  
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319  
Skin Sensitization, Category 1 - Skin Sens. 1; H317  
Reproductive Toxicity, Category 2 - Repr. 2; H361fd  
Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400  
Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

For full text of H phrases, see Section 16.

## 2.2. Label elements

### CLP REGULATION (EC) No 1272/2008

#### SIGNAL WORD

WARNING.

#### Symbols

GHS07 (Exclamation mark) | GHS08 (Health Hazard) | GHS09 (Environment) |

#### Pictograms



#### Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	216-823-5	20 - 40
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	238-098-4	7 - 15
Boric acid, zinc salt	1332-07-6	215-566-6	7 - 13
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	500-006-8	3 - 8
STANNOUS SULFATE	7488-55-3	231-302-2	< 0.3

#### HAZARD STATEMENTS:

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

#### PRECAUTIONARY STATEMENTS

##### Prevention:

P273	Avoid release to the environment.
P280E	Wear protective gloves.

##### Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

10% of the mixture consists of components of unknown acute oral toxicity.

Contains 10% of components with unknown hazards to the aquatic environment.

## 2.3. Other hazards

None known.

This material does not contain any substances that are assessed to be a PBT or vPvB

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Not applicable

**3.2. Mixtures**

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
bis-[4-(2,3-epoxipropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	20 - 40	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Aluminium hydroxide	(CAS-No.) 21645-51-2 (EC-No.) 244-492-7	10 - 30	Substance with a national occupational exposure limit
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	(CAS-No.) 14228-73-0 (EC-No.) 238-098-4	7 - 15	Aquatic Chronic 3, H412 Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	(EC-No.) ELINCS 484-050-2 (REACH-No.) 01-0000020228-74	0.5 - 1.5	Aquatic Acute 1, H400 Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410 Aquatic Chronic 1, H410,M=10
Acrylic copolymer	Trade Secret	7 - 13	Substance not classified as hazardous
Boric acid, zinc salt	(CAS-No.) 1332-07-6 (EC-No.) 215-566-6	7 - 13	Eye Irrit. 2, H319 Repr. 2, H361df Aquatic Acute 1, H400 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410 Aquatic Chronic 1, H410,M=1
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	(CAS-No.) 9003-36-5 (EC-No.) 500-006-8	3 - 8	Skin Irrit. 2, H315 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410 Aquatic Chronic 1, H410,M=1
red phosphorus	(CAS-No.) 7723-14-0 (EC-No.) 918-594-3 (REACH-No.) 01-2119489913-23	1 - 5	Flam. Sol. 1, H228 Aquatic Chronic 3, H412
STANNOUS SULFATE	(CAS-No.) 7488-55-3 (EC-No.) 231-302-2	< 0.3	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410

			Aquatic Chronic 1, H410, M=1
boric acid	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2	< 0.3	Repr. 1B, H360FD
Oxide glass chemicals	(CAS-No.) 65997-17-3 (EC-No.) 266-046-0	1 - 2	Substance with a national occupational exposure limit
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	(CAS-No.) 2530-83-8 (EC-No.) 219-784-2 (REACH-No.) 01-2119513212-58	1 - 2	Eye Dam. 1, H318

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.

Please see section 16 for the full text of any H statements referred to in this section

### Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	(CAS-No.) 2530-83-8 (EC-No.) 219-784-2 (REACH-No.) 01-2119513212-58	(C >= 5%) Eye Dam. 1, H318
bis-[4-(2,3-epoxypropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319
boric acid	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2	(C >= 5.5%) Repr. 1B, H360D (C >= 5.5%) Repr. 1B, H360F

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation

Remove person to fresh air. If you feel unwell, get medical attention.

#### Skin contact

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

#### Eye contact

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

#### If swallowed

Rinse mouth. If you feel unwell, get medical attention.

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

The most important symptoms and effects based on the CLP classification include:

Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision).

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

### SECTION 5: Fire-fighting measures

#### 5.1. Extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

#### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes.	During combustion.
Hydrocarbons.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	During combustion.
Ketones.	During combustion.

#### 5.3. Advice for fire-fighters

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

#### 6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

#### 7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from oxidising agents. Store away from amines.

**7.3. Specific end use(s)**

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

<b>Ingredient</b>	<b>CAS Nbr</b>	<b>Agency</b>	<b>Limit type</b>	<b>Additional comments</b>
DUST, INERT OR NUISANCE	21645-51-2	UK HSC	TWA(as respirable dust):4 mg/m <sup>3</sup> ;TWA(as inhalable dust):10 mg/m <sup>3</sup>	
Glass, oxide, chemicals	65997-17-3	UK HSC	TWA(as fiber):5 mg/m <sup>3</sup> (1 fibers/ml)	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m <sup>3</sup> ;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m <sup>3</sup>	
TIN, INORGANIC COMPOUNDS, EXCEPT SnH <sub>4</sub>	7488-55-3	UK HSC	TWA(as Sn):2 mg/m <sup>3</sup> ;STEL(as Sn):4 mg/m <sup>3</sup>	
red phosphorus	7723-14-0	UK HSC	TWA: 0.1 mg/m <sup>3</sup> ; STEL: 0.3 mg/m <sup>3</sup>	

UK HSC : UK Health and Safety Commission

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

**Biological limit values**

No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

**Recommended monitoring procedures:**Information on recommended monitoring procedures can be obtained from UK HSC

**8.2. Exposure controls****8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining.

**8.2.2. Personal protective equipment (PPE)****Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect vented goggles.

*Applicable Norms/Standards*

Use eye protection conforming to EN 166

**Skin/hand protection**

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

#### *Applicable Norms/Standards*

Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

#### **Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

#### *Applicable Norms/Standards*

Use a respirator conforming to EN 140 or EN 136: filter types A & P

## **SECTION 9: Physical and chemical properties**

### **9.1. Information on basic physical and chemical properties**

<b>Physical state</b>	Solid.
<b>Specific Physical Form:</b>	Paste
<b>Colour</b>	Brown
<b>Odor</b>	Epoxy
<b>Odour threshold</b>	<i>No data available.</i>
<b>Melting point/freezing point</b>	<i>Not applicable.</i>
<b>Boiling point/boiling range</b>	<i>No data available.</i>
<b>Flammability (solid, gas)</b>	Not classified
<b>Flammable Limits(LEL)</b>	<i>No data available.</i>
<b>Flammable Limits(UEL)</b>	<i>No data available.</i>
<b>Flash point</b>	≥100 °C [ <i>Test Method: Closed Cup</i> ]
<b>Autoignition temperature</b>	<i>No data available.</i>
<b>Decomposition temperature</b>	<i>No data available.</i>
<b>pH</b>	<i>substance/mixture is non-soluble (in water)</i>
<b>Kinematic Viscosity</b>	218,181.818181818 mm <sup>2</sup> /sec
<b>Water solubility</b>	Nil
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>No data available.</i>
<b>Vapour pressure</b>	<i>No data available.</i>
<b>Density</b>	1.1 - 1.3 g/ml
<b>Relative density</b>	1.1 - 1.3 [ <i>Ref Std: WATER=1</i> ]
<b>Relative Vapor Density</b>	<i>No data available.</i>

### **9.2. Other information**

### 9.2.2 Other safety characteristics

EU Volatile Organic Compounds  
Evaporation rate  
Percent volatile

*No data available.*  
*No data available.*  
*No data available.*

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

### 10.2 Chemical stability

Stable.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

### 10.4 Conditions to avoid

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

### 10.5 Incompatible materials

Amines.  
Strong acids.  
Strong oxidising agents.

### 10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
------------------	------------------

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

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

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

#### Inhalation

May be harmful if inhaled. Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

#### Skin contact

Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye contact**

Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

**Ingestion**

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

**Additional Health Effects:****Reproductive/Developmental Toxicity:**

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >5 - ≤12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	Rat	LD50 > 1,600 mg/kg
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Ingestion	Rat	LD50 > 1,000 mg/kg
Aluminium hydroxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminium hydroxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Aluminium hydroxide	Ingestion	Rat	LD50 > 5,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.19 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Rat	LD50 1,098 mg/kg
Boric acid, zinc salt	Dermal	Rabbit	LD50 > 5,000 mg/kg
Boric acid, zinc salt	Inhalation-Dust/Mist	Rat	LC50 > 4.95 mg/l
Boric acid, zinc salt	Ingestion	Rat	LD50 > 5,000 mg/kg
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Dermal	Rat	LD50 > 2,000 mg/kg
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Ingestion	Rat	LD50 > 5,000 mg/kg
red phosphorus	Dermal		LD50 estimated to be > 5,000 mg/kg
red phosphorus	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.1 mg/l
red phosphorus	Ingestion	Rat	LD50 > 15,000 mg/kg
Oxide glass chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide glass chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Dermal	Rabbit	LD50 4,000 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Rat	LD50 7,010 mg/kg
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	Dermal	Rat	LD50 > 2,000

Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.3
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	Ingestion	Rat	LD50 > 2,000
STANNOUS SULFATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 2 mg/l
STANNOUS SULFATE	Ingestion	Rat	LD50 2,207 mg/kg
STANNOUS SULFATE	Dermal	similar health hazards	LD50 estimated to be 2,000 - 5,000 mg/kg
boric acid	Dermal	Rabbit	LD50 > 2,000 mg/kg
boric acid	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.12 mg/l
boric acid	Ingestion	Rat	LD50 3,450 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Rabbit	Mild irritant
Aluminium hydroxide	Rabbit	No significant irritation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	Irritant
Boric acid, zinc salt	Rabbit	No significant irritation
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Rabbit	Irritant
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Mild irritant
Oxide glass chemicals	Professional judgement	No significant irritation
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	Rabbit	No significant irritation
STANNOUS SULFATE	Professional judgement	Irritant
boric acid	Rabbit	No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Rabbit	Moderate irritant
Aluminium hydroxide	Rabbit	No significant irritation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	No significant irritation
Boric acid, zinc salt	Rabbit	Severe irritant
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Rabbit	No significant irritation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Corrosive
Oxide glass chemicals	Professional judgement	No significant irritation
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	Rabbit	Mild irritant
STANNOUS SULFATE	Professional judgement	Corrosive

	nal judgement	
boric acid	Rabbit	Mild irritant

### Skin Sensitisation

Name	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Human and animal	Sensitising
Aluminium hydroxide	Guinea pig	Not classified
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Mouse	Sensitising
Boric acid, zinc salt	Guinea pig	Not classified
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Multiple animal species	Sensitising
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Guinea pig	Not classified
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandylbis[12-hydroxyoctadecanamide]	Mouse	Not classified
STANNOUS SULFATE	Human	Sensitising
boric acid	Guinea pig	Not classified

### Respiratory Sensitisation

Name	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Human	Not classified

### Germ Cell Mutagenicity

Name	Route	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	In vivo	Not mutagenic
bis-[4-(2,3-epoxypropoxy)phenyl]propane	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vivo	Not mutagenic
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Boric acid, zinc salt	In Vitro	Some positive data exist, but the data are not sufficient for classification
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	In vivo	Not mutagenic
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In vivo	Not mutagenic
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandylbis[12-hydroxyoctadecanamide]	In Vitro	Not mutagenic
STANNOUS SULFATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
boric acid	In Vitro	Not mutagenic
boric acid	In vivo	Not mutagenic

### Carcinogenicity

Name	Route	Species	Value
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bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Aluminium hydroxide	Not specified.	Multiple animal species	Not carcinogenic
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Dermal	Mouse	Not carcinogenic
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
boric acid	Ingestion	Mouse	Not carcinogenic

## Reproductive Toxicity

### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Aluminium hydroxide	Ingestion	Not classified for development	Rat	NOAEL 768 mg/kg/day	during organogenesis
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	prematuring into lactation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	33 days
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	prematuring into lactation
Boric acid, zinc salt	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	92 days
Boric acid, zinc salt	Ingestion	Toxic to development	Rat	LOAEL 100 mg/kg/day	during gestation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiybis[12-hydroxyoctadecanamide]	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring into lactation
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiybis[12-hydroxyoctadecanamide]	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	28 days
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiybis[12-hydroxyoctadecanamide]	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	prematuring into lactation
boric acid	Ingestion	Toxic to female reproduction	Rat	NOAEL 100 mg/kg/day	3 generation
boric acid	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	3 generation

boric acid	Ingestion	Toxic to development	Rabbit	NOAEL 125 mg/kg/day	during organogenesis
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**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Boric acid, zinc salt	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
STANNOUS SULFATE	Inhalation	respiratory irritation	May cause respiratory irritation	Professional judgement	NOAEL Not available	
boric acid	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	occupational exposure
boric acid	Ingestion	nervous system	Not classified	Rat	NOAEL 2,000 mg/kg	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	endocrine system   gastrointestinal tract   liver   heart   hematopoietic system   immune system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	33 days
Boric acid, zinc salt	Inhalation	immune system   respiratory system   heart   endocrine system   hematopoietic system   liver   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 0.15 mg/l	2 weeks
Boric acid, zinc salt	Ingestion	endocrine system   liver   kidney and/or bladder   heart   skin   bone, teeth, nails, and/or hair   hematopoietic system   immune	Not classified	Rat	NOAEL 375 mg/kg/day	92 days

		system   nervous system   eyes   respiratory system   vascular system				
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Ingestion	heart   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 250 mg/kg/day	13 weeks
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
STANNOUS SULFATE	Ingestion	hematopoietic system   liver   heart   kidney and/or bladder	Not classified	Rat	NOAEL 40 mg/kg/day	4 weeks
boric acid	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg/day	2 years
boric acid	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	45 days
boric acid	Ingestion	heart   endocrine system   bone, teeth, nails, and/or hair   liver   nervous system   respiratory system	Not classified	Rat	NOAEL 334 mg/kg/day	2 years

**Aspiration Hazard**

For the component/components, either no data is currently available or the data is not sufficient for classification.

**Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.**

**11.2. Information on other hazards**

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

**SECTION 12: Ecological information**

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

**12.1. Toxicity**

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Activated sludge	Estimated	3 hours	IC50	>100 mg/l
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Green Algae	Experimental	72 hours	EC50	>11 mg/l
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Green Algae	Experimental	72 hours	NOEC	4.2 mg/l
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Aluminium hydroxide	21645-51-2	Fish other	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Bacteria	Estimated	18 hours	EC50	10,264 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Green algae	Estimated	72 hours	EC50	26.7 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Rainbow trout	Estimated	96 hours	LC50	10.1 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Water flea	Estimated	48 hours	EC50	16.3 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Green algae	Estimated	72 hours	EC10	21.4 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Water flea	Estimated	21 days	NOEC	11.7 mg/l
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiybis[12-hydroxyoctadecanamide]	484-050-2	Water flea	Endpoint not reached	48 hours	EC50	>100 mg/l
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiybis[12-	484-050-2	Activated sludge	Experimental	3 hours	EC50	>100 mg/l

hydroxyoctadecanamide]						
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Common Carp	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Green Algae	Experimental	72 hours	EC50	0.025 mg/l
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Water flea	Endpoint not reached	21 days	NOEC	>100 mg/l
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Green Algae	Experimental	72 hours	NOEC	0.007 mg/l
Boric acid, zinc salt	1332-07-6	Activated sludge	Estimated	4 hours	NOEC	0.19 mg/l
Boric acid, zinc salt	1332-07-6	Green Algae	Estimated	72 hours	IC50	0.26 mg/l
Boric acid, zinc salt	1332-07-6	Rainbow trout	Estimated	96 hours	LC50	0.32 mg/l
Boric acid, zinc salt	1332-07-6	Water flea	Estimated	48 hours	EC50	0.19 mg/l
Boric acid, zinc salt	1332-07-6	Crustacea other	Estimated	24 days	NOEC	0.011 mg/l
Boric acid, zinc salt	1332-07-6	Green Algae	Estimated	72 hours	NOEC	0.011 mg/l
Boric acid, zinc salt	1332-07-6	Rainbow trout	Estimated	25 days	NOEC	0.048 mg/l
Boric acid, zinc salt	1332-07-6	Water flea	Estimated	21 days	NOEC	0.07 mg/l
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Green Algae	Experimental	72 hours	ErC50	>1.8 mg/l
Formaldehyde, oligomeric reaction	9003-36-5	Rainbow trout	Experimental	96 hours	LC50	0.55 mg/l

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products with 1-chloro-2,3-epoxypropane and phenol						
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Water flea	Experimental	48 hours	EC50	1.6 mg/l
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Water flea	Analogous Compound	21 days	NOEC	0.3 mg/l
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
red phosphorus	7723-14-0	Activated sludge	Estimated	3 hours	NOEC	1,000 mg/l
red phosphorus	7723-14-0	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
red phosphorus	7723-14-0	Green algae	Experimental	72 hours	EL50	18.3 mg/l
red phosphorus	7723-14-0	Water flea	Experimental	48 hours	EL50	10.5 mg/l
red phosphorus	7723-14-0	Zebra Fish	Experimental	96 hours	EL50	2.5 mg/l
red phosphorus	7723-14-0	Green algae	Experimental	72 hours	EL10	6.6 mg/l
boric acid	10043-35-3	Crustacea	Estimated	96 hours	LC50	366 mg/l
boric acid	10043-35-3	Fathead minnow	Estimated	96 hours	LC50	456 mg/l
boric acid	10043-35-3	Crustacea other	Experimental	48 hours	LC50	744 mg/l
boric acid	10043-35-3	Diatom	Experimental	96 hours	EC50	378 mg/l
boric acid	10043-35-3	Green algae	Experimental	72 hours	EC50	300 mg/l
boric acid	10043-35-3	Crustacea other	Experimental	42 days	NOEC	37.8 mg/l
boric acid	10043-35-3	Green Algae	Experimental	72 hours	NOEC	100 mg/l
boric acid	10043-35-3	Mysid Shrimp	Experimental	28 days	NOEC	95 mg/l
boric acid	10043-35-3	Zebra Fish	Experimental	34 days	EC10	39.5 mg/l
boric acid	10043-35-3		Experimental	14 days	LC50	2,705 mg/kg (Dry Weight)
boric acid	10043-35-3	Activated sludge	Experimental	3 hours	NOEC	100 mg/l
boric acid	10043-35-3	Bobwhite Quail	Experimental	5 days	LD50	>3,014 mg per kg of bodyweight
STANNOUS SULFATE	7488-55-3	Activated sludge	Experimental	3 hours	EC50	1,194 mg/l
STANNOUS SULFATE	7488-55-3	Diatom	Laboratory	72 hours	EC50	0.2 mg/l
STANNOUS SULFATE	7488-55-3	Water flea	Laboratory	48 hours	EC50	39.08 mg/l
STANNOUS SULFATE	7488-55-3	Zebra Fish	Laboratory	120 hours	NOEC	9.48 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Bacteria	Experimental	5 hours	EC10	1,520 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Crustacea other	Experimental	48 hours	LC50	324 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	EC50	350 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green Algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	>= 100 mg/l
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	Non-standard method
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
Aluminium hydroxide	21645-51-2	Data not available - insufficient			N/A	
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Estimated Biodegradation	28 days	Dissolv. Organic Carbon Deplet	16.6 %removal of DOC	OECD 301F - Manometric respirometry
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandylbis[12-hydroxyoctadecanamide]	484-050-2	Experimental Biodegradation	28 days	CO2 evolution	7 %CO2 evolution/THC O2 evolution	OECD 301B - Modified sturm or CO2
Boric acid, zinc salt	1332-07-6	Data not available - insufficient			N/A	
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Analogous Compound Hydrolysis		Hydrolytic half-life (pH 7)	86 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	EC C.4.E Closed Bottle Test
red phosphorus	7723-14-0	Experimental Hydrolysis		Hydrolytic half-life	8.3 years (t 1/2)	Non-standard method
boric acid	10043-35-3	Data not available - insufficient			N/A	
STANNOUS SULFATE	7488-55-3	Data not available - insufficient			N/A	
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Non-standard method
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Non-standard method

Oxide glass chemicals	65997-17-3	Data not available or insufficient			N/A	
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**12.3 : Bioaccumulative potential**

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Experimental Bioconcentration		Log Kow	3.242	Non-standard method
Aluminium hydroxide	21645-51-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Estimated Bioconcentration		Bioaccumulation factor	3	Estimated: Bioconcentration factor
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandylbis[12-hydroxyoctadecanamide]	484-050-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Boric acid, zinc salt	1332-07-6	Estimated BCF-Carp	56 days	Bioaccumulation factor	242	OECD 305E - Bioaccumulation flow-through fish test
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Experimental Bioconcentration		Log Kow	≤3.6	OECD 117 log Kow HPLC method
red phosphorus	7723-14-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
boric acid	10043-35-3	Experimental BCF - Salmon	60 days	Bioaccumulation factor	<0.1	
boric acid	10043-35-3	Experimental Bioconcentration		Log Kow	0.18	
STANNOUS SULFATE	7488-55-3	Estimated BCF - Other	1 days	Bioaccumulation factor	3000	Non-standard method
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Oxide glass chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

**12.4. Mobility in soil**

Material	Cas No.	Test type	Study Type	Test result	Protocol
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Estimated Mobility in Soil	Koc	57 l/kg	Episuite™
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alkyl]octadecanamide and N,N'-1,2-alkandylbis[12-hydroxyoctadecanamide]	484-050-2	Experimental Mobility in Soil	Koc	>430000 l/kg	OECD 121 Estim. of Koc by HPLC
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	Experimental Mobility in Soil	Koc	4,460 l/kg	OECD 121 Estim. of Koc by HPLC

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Estimated Mobility in Soil	Koc	58 l/kg	Episuite™
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**12.5. Results of the PBT and vPvB assessment**

This material does not contain any substances that are assessed to be a PBT or vPvB

**12.6. Endocrine disrupting properties**

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

**12.7. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

**EU waste code (product as sold)**

- 08 04 09\* Waste adhesives and sealants containing organic solvents or other dangerous substances
- 20 01 27\* Paint, inks, adhesives and resins containing dangerous substances

**SECTION 14: Transportation information**

	<b>Ground Transport (ADR)</b>	<b>Air Transport (IATA)</b>	<b>Marine Transport (IMDG)</b>
<b>14.1 UN number</b>	UN3077	UN3077	UN3077
<b>14.2 UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC BORATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC BORATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC BORATE)
<b>14.3 Transport hazard class(es)</b>	9	9	9

<b>14.4 Packing group</b>	III	III	III
<b>14.5 Environmental hazards</b>	Environmentally Hazardous	Not applicable	Marine Pollutant
<b>14.6 Special precautions for user</b>	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
<b>14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code</b>	No data available.	No data available.	No data available.
<b>Control Temperature</b>	No data available.	No data available.	No data available.
<b>Emergency Temperature</b>	No data available.	No data available.	No data available.
<b>ADR Classification Code</b>	M7	Not applicable.	Not applicable.
<b>IMDG Segregation Code</b>	Not applicable.	Not applicable.	NONE

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

## SECTION 15: Regulatory information

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

#### Carcinogenicity

<u>Ingredient</u>	<u>CAS Nbr</u>	<u>Classification</u>	<u>Regulation</u>
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Gr. 3: Not classifiable	International Agency for Research on Cancer

#### Restrictions on the manufacture, placing on the market and use:

The following substance(s) contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product are required to comply with the restrictions placed upon it by the aforementioned provision.

<u>Ingredient</u>	<u>CAS Nbr</u>
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3

Restriction status: listed in REACH Annex XVII

Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 for Conditions of Restriction

#### Authorization status under REACH:

The following substance/s contained in this product might be or is/are subject to authorization in accordance with REACH:

<u>Ingredient</u>	<u>CAS Nbr</u>
boric acid	10043-35-3

Authorization status: listed in the Candidate List of Substances of Very High Concern for Authorization

**Global inventory status**

Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA.

**DIRECTIVE 2012/18/EU**

Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E1 Hazardous to the Aquatic environment	100	200

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
red phosphorus	7723-14-0	50	200

**15.2. Chemical Safety Assessment**

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

**SECTION 16: Other information****List of relevant H statements**

H228	Flammable solid.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
H361df	Suspected of damaging fertility. Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
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.

**Revision information:**

No revision information

**DISCLAIMER:** The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

**3M United Kingdom MSDSs are available at [www.3M.com/uk](http://www.3M.com/uk)**



## Safety Data Sheet

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<b>Document group:</b>	27-6389-4	<b>Version number:</b>	15.00
<b>Revision date:</b>	23/04/2021	<b>Supersedes date:</b>	19/10/2020

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

#### 1.1. Product identifier

3M™ Scotch-Weld™ EC-9300 B/A FST Part A

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

##### Identified uses

Adhesive

#### 1.3. Details of the supplier of the safety data sheet

**Address:** 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.  
**Telephone:** +44 (0)1344 858 000  
**E Mail:** tox.uk@mmm.com  
**Website:** www.3M.com/uk

#### 1.4. Emergency telephone number

+44 (0)1344 858 000

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

##### CLASSIFICATION:

Substance or Mixture Corrosive to Metals, Category 1 - Met. Corr. 1; H290  
Skin Corrosion/ Irritation, Category 1C - Skin Corr. 1C; H314  
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318  
Skin Sensitization, Category 1A - Skin Sens. 1A; H317  
Reproductive Toxicity, Category 2 - Repr. 2; H361  
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

## 2.2. Label elements

### CLP REGULATION (EC) No 1272/2008

#### SIGNAL WORD

DANGER.

#### Symbols

GHS05 (Corrosion) |GHS07 (Exclamation mark) |GHS08 (Health Hazard) |GHS09 (Environment) |

#### Pictograms



#### Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
Poly(oxypropylene)diamine	9046-10-0	618-561-0	20 - 30
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4		5 - 20
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1		< 19
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	202-013-9	1 - 10
Boric acid, zinc salt	1332-07-6	215-566-6	< 7
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	224-207-2	1 - 5
2-piperazin-1-ylethylamine	140-31-8	205-411-0	0.1 - 1

#### HAZARD STATEMENTS:

H290	May be corrosive to metals.
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.
H411	Toxic to aquatic life with long lasting effects.

#### PRECAUTIONARY STATEMENTS

##### Prevention:

P260G	Do not breathe vapours or dust.
P273	Avoid release to the environment.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

##### Response:

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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 CENTRE or doctor/physician.

1% of the mixture consists of components of unknown acute dermal toxicity.

Contains 5% of components with unknown hazards to the aquatic environment.

### 2.3. Other hazards

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Poly(oxypropylene)diamine	(CAS-No.) 9046-10-0 (EC-No.) 618-561-0 (REACH-No.) 01-2119557899-12	20 - 30	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412
Aluminium hydroxide	(CAS-No.) 21645-51-2 (EC-No.) 244-492-7	15 - 25	Substance with a national occupational exposure limit
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	(CAS-No.) 68683-29-4	5 - 20	Skin Irrit. 2, H315 Skin Sens. 1A, H317
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	(CAS-No.) 68911-25-1	< 19	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 STOT SE 3, H336 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
2,4,6-tris(dimethylaminomethyl)phenol	(CAS-No.) 90-72-2 (EC-No.) 202-013-9 (REACH-No.) 01-2119560597-27	1 - 10	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318
Boric acid, zinc salt	(CAS-No.) 1332-07-6 (EC-No.) 215-566-6	< 7	Eye Irrit. 2, H319 Repr. 2, H361df Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	(CAS-No.) 4246-51-9 (EC-No.) 224-207-2	1 - 5	Skin Sens. 1, H317 Skin Corr. 1B, H314
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	1 - 5	Substance with a national occupational exposure limit
2-piperazin-1-ylethylamine	(CAS-No.) 140-31-8 (EC-No.) 205-411-0	0.1 - 1	Acute Tox. 3, H311 Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 Repr. 2, H361d STOT RE 1, H372

toluene	(CAS-No.) 108-88-3 (EC-No.) 203-625-9	< 1	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Aquatic Chronic 3, H412
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Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.

Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation

Remove person to fresh air. If you feel unwell, get medical attention.

#### Skin contact

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

#### Eye contact

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

#### If swallowed

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

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

No critical symptoms or effects. See Section 11.1, information on toxicological effects.

### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

### Hazardous Decomposition or By-Products

#### Substance

Carbon monoxide

Carbon dioxide.

Oxides of nitrogen.

#### Condition

During combustion.

During combustion.

During combustion.

### 5.3. Advice for fire-fighters

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Clean up residue. Cover, but do not seal for 48 hours. Dispose of collected material as soon as possible.

### 6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

### 7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Store away from heat. Keep only in original container. Store in a corrosive resistant container with a resistant inner liner. Store away from acids. Store away from strong bases. Store away from oxidising agents.

### 7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
toluene	108-88-3	UK HSC	TWA: 191 mg/m <sup>3</sup> (50 ppm); STEL: 384 mg/m <sup>3</sup> (100 ppm)	SKIN
DUST, INERT OR NUISANCE	21645-51-2	UK HSC	TWA(as respirable dust):4 mg/m <sup>3</sup> ;TWA(as inhalable dust):10 mg/m <sup>3</sup>	
Silicon dioxide	67762-90-7	UK HSC	TWA(as respirable dust):2.4 mg/m <sup>3</sup> ;TWA(as inhalable dust):6 mg/m <sup>3</sup>	

UK HSC : UK Health and Safety Commission

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

### Biological limit values

No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

### Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL
Poly(oxypropylene)diamine		Worker	Dermal, Long-term exposure (8 hours), Local effects	0.623 mg/cm <sup>2</sup>
Poly(oxypropylene)diamine		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	2.5 mg/kg bw/d

### Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
Poly(oxypropylene)diamine		Agricultural soil	0.0176 mg/kg d.w.
Poly(oxypropylene)diamine		Concentration in freshwater fish for secondary poisoning	6.93 mg/kg w.w.
Poly(oxypropylene)diamine		Concentration in marine fish for secondary poisoning	6.93 mg/kg w.w.
Poly(oxypropylene)diamine		Freshwater	0.015 mg/l
Poly(oxypropylene)diamine		Freshwater sediments	0.132 mg/kg d.w.
Poly(oxypropylene)diamine		Intermittent releases to water	0.15 mg/l
Poly(oxypropylene)diamine		Marine water	0.0143 mg/l
Poly(oxypropylene)diamine		Marine water sediments	0.125 mg/kg d.w.
Poly(oxypropylene)diamine		Sewage Treatment Plant	7.5 mg/l

**Recommended monitoring procedures:** Information on recommended monitoring procedures can be obtained from UK HSC

## 8.2. Exposure controls

In addition, refer to the annex for more information.

### 8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Full face shield.

Indirect vented goggles.

*Applicable Norms/Standards*

Use eye/face protection conforming to EN 166

**Skin/hand protection**

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended:

<b>Material</b>	<b>Thickness (mm)</b>	<b>Breakthrough Time</b>
Polymer laminate	No data available	No data available

*Applicable Norms/Standards*

Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

**Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

*Applicable Norms/Standards*

Use a respirator conforming to EN 140 or EN 136: filter types A & P

**8.2.3. Environmental exposure controls**

Refer to Annex

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

<b>Physical state</b>	Solid.
<b>Specific Physical Form:</b>	Paste
<b>Colour</b>	White
<b>Odor</b>	Amine
<b>Odour threshold</b>	No data available.
<b>Melting point/freezing point</b>	No data available.
<b>Boiling point/boiling range</b>	No data available.
<b>Flammability (solid, gas)</b>	Not classified
<b>Flammable Limits(LEL)</b>	No data available.
<b>Flammable Limits(UEL)</b>	No data available.
<b>Flash point</b>	>=100 °C [Test Method:Closed Cup]
<b>Autoignition temperature</b>	No data available.
<b>Decomposition temperature</b>	No data available.
<b>pH</b>	substance/mixture is non-soluble (in water)

<b>Kinematic Viscosity</b>	<i>No data available.</i>
<b>Water solubility</b>	Nil
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>No data available.</i>
<b>Density</b>	<i>No data available.</i>
<b>Relative density</b>	1.1 - 1.3 [ <i>Ref Std:WATER=1</i> ]
<b>Relative Vapor Density</b>	<i>No data available.</i>

## 9.2. Other information

### 9.2.2 Other safety characteristics

<b>EU Volatile Organic Compounds</b>	<i>No data available.</i>
<b>Evaporation rate</b>	<i>No data available.</i>
<b>Percent volatile</b>	approximately 0 %

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is considered to be non reactive under normal use conditions

### 10.2 Chemical stability

Stable.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

### 10.4 Conditions to avoid

Avoid curing large quantities of material to prevent a premature reaction (exotherm) with production of intense heat and smoke.

Heat.

### 10.5 Incompatible materials

Strong acids.

Strong bases.

Strong oxidising agents.

### 10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

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

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation**

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

**Skin contact**

May be harmful in contact with skin. Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye contact**

Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Ingestion**

May be harmful if swallowed.

Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

**Additional Health Effects:****Reproductive/Developmental Toxicity:**

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Additional information:**

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE <sub>2,000</sub> - 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE <sub>2,000</sub> - 5,000 mg/kg
Poly(oxypropylene)diamine	Dermal	Rabbit	LD <sub>50</sub> 2,980 mg/kg
Poly(oxypropylene)diamine	Ingestion	Rat	LD <sub>50</sub> 2,885 mg/kg
Aluminium hydroxide	Dermal		LD <sub>50</sub> estimated to be > 5,000 mg/kg
Aluminium hydroxide	Ingestion	Rat	LD <sub>50</sub> > 5,000 mg/kg
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rat	LD <sub>50</sub> > 2,000 mg/kg
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD <sub>50</sub> > 2,000 mg/kg
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Dermal	Rabbit	LD <sub>50</sub> > 3,000 mg/kg
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Ingestion	Rat	LD <sub>50</sub> > 15,300 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Dermal	Rat	LD <sub>50</sub> 1,280 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Ingestion	Rat	LD <sub>50</sub> 1,000 mg/kg
Boric acid, zinc salt	Dermal	Rabbit	LD <sub>50</sub> > 5,000 mg/kg
Boric acid, zinc salt	Inhalation-Dust/Mist	Rat	LC <sub>50</sub> > 4.95 mg/l
Boric acid, zinc salt	Ingestion	Rat	LD <sub>50</sub> > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD <sub>50</sub> > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC <sub>50</sub> > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD <sub>50</sub> > 5,110 mg/kg

3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,500 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 3,160 mg/kg
2-piperazin-1-ylethylamine	Dermal	Rabbit	LD50 865 mg/kg
2-piperazin-1-ylethylamine	Ingestion	Rat	LD50 1,470 mg/kg
toluene	Dermal	Rat	LD50 12,000 mg/kg
toluene	Inhalation-Vapour (4 hours)	Rat	LC50 30 mg/l
toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Poly(oxypropylene)diamine	Rabbit	Corrosive
Aluminium hydroxide	Rabbit	No significant irritation
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Rat	Irritant
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Rabbit	Irritant
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Boric acid, zinc salt	Rabbit	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
2-piperazin-1-ylethylamine	Rabbit	Corrosive
toluene	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
Poly(oxypropylene)diamine	Rabbit	Corrosive
Aluminium hydroxide	Rabbit	No significant irritation
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	In vitro data	Severe irritant
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Rabbit	Mild irritant
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Boric acid, zinc salt	Rabbit	Severe irritant
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	similar health hazards	Corrosive
2-piperazin-1-ylethylamine	Rabbit	Corrosive
toluene	Rabbit	Moderate irritant

**Skin Sensitisation**

Name	Species	Value
Poly(oxypropylene)diamine	Guinea pig	Not classified
Aluminium hydroxide	Guinea pig	Not classified
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Guinea pig	Sensitising
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Guinea pig	Sensitising
2,4,6-tris(dimethylaminomethyl)phenol	Guinea pig	Not classified
Boric acid, zinc salt	Guinea pig	Not classified
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified

2-piperazin-1-ylethylamine	Guinea pig	Sensitising
toluene	Guinea pig	Not classified

### Respiratory Sensitisation

For the component/components, either no data is currently available or the data is not sufficient for classification.

### Germ Cell Mutagenicity

Name	Route	Value
Poly(oxypropylene)diamine	In Vitro	Not mutagenic
Poly(oxypropylene)diamine	In vivo	Not mutagenic
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	In Vitro	Not mutagenic
2,4,6-tris(dimethylaminomethyl)phenol	In Vitro	Not mutagenic
Boric acid, zinc salt	In Vitro	Some positive data exist, but the data are not sufficient for classification
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
2-piperazin-1-ylethylamine	In vivo	Not mutagenic
2-piperazin-1-ylethylamine	In Vitro	Some positive data exist, but the data are not sufficient for classification
toluene	In Vitro	Not mutagenic
toluene	In vivo	Not mutagenic

### Carcinogenicity

Name	Route	Species	Value
Aluminium hydroxide	Not specified.	Multiple animal species	Not carcinogenic
Siloxanes and Silicones, di-Me, reaction products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Poly(oxypropylene)diamine	Dermal	Not classified for female reproduction	Rat	NOAEL 30 mg/kg/day	prematuring & during gestation
Poly(oxypropylene)diamine	Dermal	Not classified for male reproduction	Rat	NOAEL 30 mg/kg/day	prematuring & during gestation
Poly(oxypropylene)diamine	Dermal	Not classified for development	Rat	NOAEL 30 mg/kg/day	prematuring & during gestation
Aluminium hydroxide	Ingestion	Not classified for development	Rat	NOAEL 768 mg/kg/day	during organogenesis
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring into lactation
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	29 days
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	prematuring into lactation

Boric acid, zinc salt	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	92 days
Boric acid, zinc salt	Ingestion	Toxic to development	Rat	LOAEL 100 mg/kg/day	during gestation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2-piperazin-1-ylethylamine	Ingestion	Not classified for female reproduction	Rat	NOAEL 598 mg/kg/day	prematuring & during gestation
2-piperazin-1-ylethylamine	Ingestion	Not classified for male reproduction	Rat	NOAEL 409 mg/kg/day	32 days
2-piperazin-1-ylethylamine	Ingestion	Toxic to development	Rabbit	NOAEL 75 mg/kg/day	during gestation
toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Poly(oxypropylene)diamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
2,4,6-tris(dimethylaminomethyl)phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Boric acid, zinc salt	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
2-piperazin-1-ylethylamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	Human	NOAEL Not available	

			classification			
toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Ingestion	heart   skin   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
2,4,6-tris(dimethylaminomethyl)phenol	Dermal	skin   liver   nervous system   auditory system   hematopoietic system   eyes	Not classified	Rat	NOAEL 125 mg/kg/day	28 days
Boric acid, zinc salt	Inhalation	immune system   respiratory system   heart   endocrine system   hematopoietic system   liver   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 0.15 mg/l	2 weeks
Boric acid, zinc salt	Ingestion	endocrine system   liver   kidney and/or bladder   heart   skin   bone, teeth, nails, and/or hair   hematopoietic system   immune system   nervous system   eyes   respiratory system   vascular system	Not classified	Rat	NOAEL 375 mg/kg/day	92 days
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
2-piperazin-1-ylethylamine	Dermal	skin	Not classified	Rat	NOAEL 100 mg/kg/day	29 days
2-piperazin-1-ylethylamine	Dermal	hematopoietic system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
2-piperazin-1-ylethylamine	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.2 mg/m <sup>3</sup>	13 weeks
2-piperazin-1-ylethylamine	Inhalation	hematopoietic system   eyes   kidney and/or bladder	Not classified	Rat	NOAEL 53.8 mg/m <sup>3</sup>	13 weeks
2-piperazin-1-ylethylamine	Ingestion	heart   endocrine system   hematopoietic system   liver   nervous system	Not classified	Rat	NOAEL 598 mg/kg/day	28 days

		kidney and/or bladder				
toluene	Inhalation	auditory system   eyes   olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
toluene	Inhalation	heart   liver   kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
toluene	Inhalation	hematopoietic system   vascular system	Not classified	Human	NOAEL Not available	occupational exposure
toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
toluene	Ingestion	liver   kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

### Aspiration Hazard

Name	Value
Poly(oxypropylene)diamine	Some positive data exist, but the data are not sufficient for classification
toluene	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

### 11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

## SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

### 12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
Poly(oxypropylene)di amine	9046-10-0	Copepods	Experimental	48 hours	LC50	418.34 mg/l
Poly(oxypropylene)di amine	9046-10-0	Diatom	Experimental	72 hours	EC50	142 mg/l
Poly(oxypropylene)di amine	9046-10-0	Green algae	Experimental	72 hours	EC50	15 mg/l
Poly(oxypropylene)di amine	9046-10-0	Rainbow trout	Experimental	96 hours	LC50	>15 mg/l
Poly(oxypropylene)di amine	9046-10-0	Sheepshead Minnow	Experimental	96 hours	LC50	772.14 mg/l
Poly(oxypropylene)di amine	9046-10-0	Water flea	Experimental	48 hours	EC50	80 mg/l
Poly(oxypropylene)di amine	9046-10-0	Diatom	Experimental	72 hours	EC10	33 mg/l
Poly(oxypropylene)di amine	9046-10-0	Green algae	Experimental	72 hours	EC10	1.4 mg/l
Aluminium hydroxide	21645-51-2	Fish other	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
2-Propenenitrile, polymer with 1,3- butadiene, 1-cyano-1- methyl-4-oxo-4-[[2-(1- piperazinyl)ethyl]amino ]butyl-terminated	68683-29-4		Data not available or insufficient for classification			N/A
Fatty acids, C18- unsaturated, dimers, polymers with 3,3'- oxybis(ethyleneoxy)bis (propylamine)	68911-25-1	Activated sludge	Experimental	3 hours	EC50	410.3 mg/l
Fatty acids, C18- unsaturated, dimers, polymers with 3,3'- oxybis(ethyleneoxy)bis (propylamine)	68911-25-1	Fathead minnow	Experimental	96 hours	LL50	2.16 mg/l
Fatty acids, C18- unsaturated, dimers, polymers with 3,3'- oxybis(ethyleneoxy)bis (propylamine)	68911-25-1	Green algae	Experimental	72 hours	EL50	0.43 mg/l
Fatty acids, C18- unsaturated, dimers, polymers with 3,3'- oxybis(ethyleneoxy)bis (propylamine)	68911-25-1	Water flea	Experimental	48 hours	EL50	0.57 mg/l
Fatty acids, C18- unsaturated, dimers, polymers with 3,3'- oxybis(ethyleneoxy)bis (propylamine)	68911-25-1	Green algae	Experimental	72 hours	NOEL	0.28 mg/l
2,4,6- tris(dimethylaminometh yl)phenol	90-72-2		Experimental	96 hours	LC50	718 mg/l
2,4,6- tris(dimethylaminometh yl)phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	>100 mg/l
2,4,6- tris(dimethylaminometh yl)phenol	90-72-2	Green algae	Experimental	72 hours	EC50	46.7 mg/l

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2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.44 mg/l
Boric acid, zinc salt	1332-07-6	Activated sludge	Estimated	4 hours	NOEC	0.19 mg/l
Boric acid, zinc salt	1332-07-6	Green Algae	Estimated	72 hours	IC50	0.26 mg/l
Boric acid, zinc salt	1332-07-6	Rainbow trout	Estimated	96 hours	LC50	0.32 mg/l
Boric acid, zinc salt	1332-07-6	Water flea	Estimated	48 hours	EC50	0.19 mg/l
Boric acid, zinc salt	1332-07-6	Crustacea other	Estimated	24 days	NOEC	0.011 mg/l
Boric acid, zinc salt	1332-07-6	Green Algae	Estimated	72 hours	NOEC	0.011 mg/l
Boric acid, zinc salt	1332-07-6	Rainbow trout	Estimated	25 days	NOEC	0.048 mg/l
Boric acid, zinc salt	1332-07-6	Water flea	Estimated	21 days	NOEC	0.07 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	EC50	>500 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	EC10	5.4 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7		Data not available or insufficient for classification			N/A
2-piperazin-1-ylethylamine	140-31-8	Bacteria	Experimental	17 hours	EC10	100 mg/l
2-piperazin-1-ylethylamine	140-31-8	Golden Orfe	Experimental	96 hours	LC50	368 mg/l
2-piperazin-1-ylethylamine	140-31-8	Green Algae	Experimental	72 hours	EC50	>1,000 mg/l
2-piperazin-1-ylethylamine	140-31-8	Water flea	Experimental	48 hours	EC50	58 mg/l
2-piperazin-1-ylethylamine	140-31-8	Green Algae	Experimental	72 hours	NOEC	31 mg/l
toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 mg/l
toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l
toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l

toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight
toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)

## 12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Poly(oxypropylene)diamine	9046-10-0	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THC O2 evolution	OECD 301B - Modified sturm or CO2
Aluminium hydroxide	21645-51-2	Data not available/insufficient			N/A	
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4	Data not available/insufficient			N/A	
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1	Experimental Aquatic Biodegrad. - Aerobic	28 days	BOD	0 % BOD/ThBOD	OECD 301F - Manometric respirometry
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	Experimental Biodegradation	28 days	BOD	4 % BOD/ThBOD	OECD 301D - Closed bottle test
Boric acid, zinc salt	1332-07-6	Data not available/insufficient			N/A	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	Non-standard method
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THC O2 evolution	OECD 301B - Modified sturm or CO2
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available/insufficient			N/A	
2-piperazin-1-ylethylamine	140-31-8	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	OECD 301C - MITI test (I)
toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	
toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 % BOD/ThBOD	APHA Std Meth Water/Wastewater

## 12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Poly(oxypropylene)diamine	9046-10-0	Experimental Bioconcentration		Log Kow	1.34	OECD 117 log Kow HPLC method
Aluminium hydroxide	21645-51-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]bu	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

tyl-terminated						
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1	Estimated Bioconcentration		Bioaccumulation factor	42	Non-standard method
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	830.7550 Part.Coef Shake Flask
Boric acid, zinc salt	1332-07-6	Estimated BCF-Carp	56 days	Bioaccumulation factor	242	OECD 305E - Bioaccumulation flow-through fish test
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	Non-standard method
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-piperazin-1-ylethylamine	140-31-8	Experimental Bioconcentration		Log Kow	0.3	Non-standard method
toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation factor	90	
toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	

#### 12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Modeled Mobility in Soil	Koc	ERROR: Length cannot be greater than the length of the string.	ACD/Labs ChemSketch™
toluene	108-88-3	Experimental Mobility in Soil	Koc	37 l/kg	

#### 12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

#### 12.6. Endocrine disrupting properties

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

#### 12.7. Other adverse effects

No information available.

## SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC

and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

#### EU waste code (product as sold)

08 04 09\* Waste adhesives and sealants containing organic solvents or other dangerous substances  
20 01 27\* Paint, inks, adhesives and resins containing dangerous substances

## SECTION 14: Transportation information

IMDG: UN3259; AMINES, SOLID, CORROSIVE, N.O.S (POLY(OXYPROPYLENE)DIAMINE, ZINC BORATE); 8; III; Marine Pollutant (ZINC BORATE); EMS: FA, SB.

ADR: UN3259; Amines, solid, corrosive, n.o.s. (Poly(oxypropylene)diamine); 8; III; (E); C8.

IATA: UN3259; AMINES, SOLID, CORROSIVE, N.O.S. (POLY(OXYPROPYLENE)DIAMINE); 8; III.

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

## SECTION 15: Regulatory information

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

#### Carcinogenicity

<u>Ingredient</u>	<u>CAS Nbr</u>	<u>Classification</u>	<u>Regulation</u>
toluene	108-88-3	Gr. 3: Not classifiable	International Agency for Research on Cancer

#### Restrictions on the manufacture, placing on the market and use:

The following substance(s) contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product are required to comply with the restrictions placed upon it by the aforementioned provision.

<u>Ingredient</u>	<u>CAS Nbr</u>
toluene	108-88-3

Restriction status: listed in REACH Annex XVII

Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 for Conditions of Restriction

### 15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

## SECTION 16: Other information

### List of relevant H statements

H225	Highly flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic 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.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H361df	Suspected of damaging fertility. Suspected of damaging 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.

**Revision information:**

EU Section 09: pH information information was added.  
Industrial Mixing and Application: Section 16: Annex information was modified.  
Industrial Packaging/Repackaging: Section 16: Annex information was modified.  
CLP: Ingredient table information was modified.  
Label: CLP Classification information was modified.  
Label: CLP Precautionary - Disposal information was deleted.  
Label: CLP Precautionary - Prevention information was modified.  
Label: CLP Precautionary - Response information was modified.  
Section 03: Composition table % Column heading information was added.  
Section 3: Composition/ Information of ingredients table information was modified.  
Section 03: Substance not applicable information was added.  
Section 04: Information on toxicological effects information was modified.  
Section 8: DNEL table row information was modified.  
Section 8: Occupational exposure limit table information was modified.  
Section 8: PNEC table row information was modified.  
Section 9: Evaporation Rate information information was deleted.  
Section 9: Explosive properties information information was deleted.  
Section 09: Kinematic Viscosity information information was added.  
Section 9: Melting point information information was modified.  
Section 9: Oxidising properties information information was deleted.  
Section 9: pH information information was deleted.  
Section 9: Property description for optional properties information was modified.  
Section 9: Vapour density value information was added.  
Section 9: Vapour density value information was deleted.  
Section 9: Viscosity information information was deleted.  
Section 11: Acute Toxicity table information was modified.  
Section 11: Aspiration Hazard Table information was modified.  
Section 11: Germ Cell Mutagenicity Table information was modified.  
Section 11: No endocrine disruptor information available warning information was added.  
Section 11: Reproductive Toxicity Table information was modified.  
Section 11: Serious Eye Damage/Irritation Table information was modified.  
Section 11: Skin Corrosion/Irritation Table information was modified.  
Section 11: Skin Sensitization Table information was modified.  
Section 11: Target Organs - Single Table information was modified.  
Section 12: 12.6. Endocrine Disrupting Properties information was added.  
Section 12: 12.7. Other adverse effects information was modified.  
Section 12: Component ecotoxicity information information was modified.  
Section 12: Contact manufacturer for more detail. information was deleted.  
Section 12: Mobility in soil information information was added.  
Section 12: No endocrine disruptor information available warning information was added.  
Section 12: Persistence and Degradability information information was modified.  
Section 12: Bioaccumulative potential information information was modified.

Section 14 Classification Code – Main Heading information was added.  
 Section 14 Classification Code – Regulation Data information was added.  
 Section 14 Control Temperature – Main Heading information was added.  
 Section 14 Control Temperature – Regulation Data information was added.  
 Section 14 Disclaimer Information information was added.  
 Section 14 Emergency Temperature – Main Heading information was added.  
 Section 14 Emergency Temperature – Regulation Data information was added.  
 Section 14 Hazard Class + Sub Risk – Main Heading information was added.  
 Section 14 Hazard Class + Sub Risk – Regulation Data information was added.  
 Section 14 Hazardous/Not Hazardous for Transportation information was added.  
 Section 14 Multiplier – Main Heading information was added.  
 Section 14 Multiplier – Regulation Data information was added.  
 Section 14 Other Dangerous Goods – Main Heading information was added.  
 Section 14 Other Dangerous Goods – Regulation Data information was added.  
 Section 14 Packing Group – Main Heading information was added.  
 Section 14 Packing Group – Regulation Data information was added.  
 Section 14 Proper Shipping Name information was added.  
 Section 14 Regulations – Main Headings information was added.  
 Section 14 Segregation – Regulation Data information was added.  
 Section 14 Segregation Code – Main Heading information was added.  
 Section 14 Special Precautions – Main Heading information was added.  
 Section 14 Special Precautions – Regulation Data information was added.  
 Section 14 Transport Category – Main Heading information was added.  
 Section 14 Transport Category – Regulation Data information was added.  
 Section 14 Transport in bulk – Regulation Data information was added.  
 Section 14 Transport in bulk according to Annex II of Marpol and the IBC Code – Main Heading information was added.  
 Section 14 Transport Not Permitted – Main Heading information was added.  
 Section 14 Transport Not Permitted – Regulation Data information was added.  
 Section 14 Tunnel Code – Main Heading information was added.  
 Section 14 Tunnel Code – Regulation Data information was added.  
 Section 14 UN Number Column data information was added.  
 Section 14 UN Number information was added.  
 Section 14: Transportation classification information was modified.  
 Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was modified.

## Annex

<b>1. Title</b>	
<b>Substance identification</b>	Poly(oxypropylene)diamine; EC No. 618-561-0; CAS Nbr 9046-10-0;
<b>Exposure Scenario Name</b>	Industrial Mixing and Application
<b>Lifecycle Stage</b>	Use at industrial sites
<b>Contributing activities</b>	PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 13 -Treatment of articles by dipping and pouring ERC 06b -Use of reactive processing aid at industrial site (no inclusion into or onto article)
<b>Processes, tasks and activities covered</b>	Application of product through a mixing nozzle Transfer of substance/mixture with dedicated engineering controls.
<b>2. Operational conditions and risk management measures</b>	
<b>Operating Conditions</b>	<b>Physical state:</b> Liquid. <b>General operating conditions:</b> Closed process;

	Duration of exposure per day at workplace [for one worker]: 4 hours/day; Emission days per year: 300 days per year; Frequency of exposure at workplace [for one worker]: 240 days per year; Indoor use with Local Exhaust Ventilation; Processing Temperature:: 20 degree Celsius;
<b>Risk management measures</b>	Under the operational conditions described above the following risk management measures apply: <b>General risk management measures:</b> <b>Human health:</b> Local exhaust ventilation; <b>Environmental:</b> None needed;
<b>Waste management measures</b>	Do not release to waterways or sewers;
<b>3. Prediction of exposure</b>	
<b>Prediction of exposure</b>	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

<b>1. Title</b>	
<b>Substance identification</b>	Poly(oxypropylene)diamine; EC No. 618-561-0; CAS Nbr 9046-10-0;
<b>Exposure Scenario Name</b>	Industrial Packaging/Repackaging
<b>Lifecycle Stage</b>	Use at industrial sites
<b>Contributing activities</b>	PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities ERC 02 -Formulation into mixture
<b>Processes, tasks and activities covered</b>	Transfer of substance/mixture with dedicated engineering controls.
<b>2. Operational conditions and risk management measures</b>	
<b>Operating Conditions</b>	<b>Physical state:</b> Liquid. <b>General operating conditions:</b> Closed process; Duration of exposure per day at workplace [for one worker]: 4 hours/day; Emission days per year: 300 days per year; Frequency of exposure at workplace [for one worker]: 240 days per year; Indoor use with Local Exhaust Ventilation; Processing Temperature:: 20 degree Celsius;
<b>Risk management measures</b>	Under the operational conditions described above the following risk management measures apply: <b>General risk management measures:</b> <b>Human health:</b> Local exhaust ventilation; <b>Environmental:</b> None needed;
<b>Waste management measures</b>	Do not release to waterways or sewers;
<b>3. Prediction of exposure</b>	
<b>Prediction of exposure</b>	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

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