Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

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

1.1. Product identifier
3M Scotch-Weld™ EC-3450 FST

Product Identification Numbers
FS-9100-4409-8 FS-9100-5128-3

7000080273 7000080151

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

Identified uses
Low Density Void Filler

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
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1.4. Emergency telephone number
+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

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 1 - Eye Dam. 1; H318
Respiratory Sensitization, Category 1 - Resp. Sens. 1; H334
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
Reproductive Toxicity, Category 2 - Repr. 2; H361fd
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
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

SIGNAL WORD
DANGER.

Symbols
GHS05 (Corrosion) |GHS08 (Health Hazard) |GHS09 (Environment) |

Pictograms



Ingredient	CAS Nbr	EC No.	% by Wt
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	246-644-8	10 - 30
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	240-260-4	7 - 13
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4		5 - 10
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	826-62-0	212-557-9	1 - 5
Boric acid, zinc salt	1332-07-6	215-566-6	1 - 5
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	216-823-5	< 3
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	252-200-4	< 1
maleic anhydride	108-31-6	203-571-6	< 0.5

HAZARD STATEMENTS:

H315	Causes skin irritation.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P261B	Avoid breathing dust.
P280B	Wear protective gloves and eye/face protection.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

Contains 4% 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], as amended for GB
Oxide glass chemicals	(CAS-No.) 65997-17-3 (EC-No.) 266-046-0	10 - 30	Substance with a national occupational exposure limit
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	(CAS-No.) 25134-21-8 (EC-No.) 246-644-8	10 - 30	Acute Tox. 3, H331 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317
Aluminium hydroxide	(CAS-No.) 21645-51-2 (EC-No.) 244-492-7	10 - 30	Substance with a national occupational exposure limit
1,6-Bis(2,3-epoxypropoxy)hexane	(CAS-No.) 16096-31-4 (EC-No.) 240-260-4	7 - 13	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 Aquatic Chronic 3, H412
Phenol-formaldehyde polymer, glycidyl ether	(CAS-No.) 28064-14-4	5 - 10	Skin Sens. 1, H317 Aquatic Chronic 2, H411
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	(CAS-No.) 826-62-0 (EC-No.) 212-557-9	1 - 5	Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 Nota C Acute Tox. 4, H302
Boric acid, zinc salt	(CAS-No.) 1332-07-6 (EC-No.) 215-566-6	1 - 5	Eye Irrit. 2, H319 Muta. 2, H341 Repr. 2, H361df Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
red phosphorus	(CAS-No.) 7723-14-0 (EC-No.) 231-768-7	< 3	Flam. Sol. 1, H228 Aquatic Chronic 3, H412

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	< 3	Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10
bis-[4-(2,3-epoxipropoxi)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	< 3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Trichloro(N,N-dimethyloctylamine)boron	(CAS-No.) 34762-90-8 (EC-No.) 252-200-4	< 1	Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1 Skin Sens. 1B, H317 Repr. 2, H361df
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	< 0.5	EUH071 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372

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
bis-[4-(2,3-epoxipropoxi)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	(C >= 0.001%) Skin Sens. 1A, H317

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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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 GB CLP classification include:
Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of 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

Substance	Condition
Aldehydes.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	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. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

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

For industrial/occupational use only. Not for consumer sale or use. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Avoid breathing 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 heat. 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
maleic anhydride	108-31-6	UK HSE	TWA: 1 mg/m³; STEL: 3 mg/m³	Respiratory Sensitizer
DUST, INERT OR NUISANCE	21645-51-2	UK HSE	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3	
DUST, INERT OR NUISANCE	65997-17-3	UK HSE	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	
red phosphorus	7723-14-0	UK HSE	TWA: 0.1 mg/m³; STEL: 0.3 mg/m³	

UK HSE : 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.

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. Provide appropriate local exhaust when product is heated.

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:

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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

Respiratory protection

In case of inadequate ventilation wear 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 or acid gases and particulates
Half facepiece or full facepiece supplied-air respirator

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Brown paste, low odour
Colour	Light Brown
Odor	Light Acrid
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	*Not applicable.*
Flammability	Not applicable.
Flammable Limits(LEL)	*Not applicable.*

Flammable Limits(UEL)	*Not applicable.*
Flash point	>=100 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	*No data available.*
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	*Not applicable.*
Density	0.5 - 0.7 g/ml
Relative density	0.5 - 0.7 [*Ref Std:*WATER=1]
Relative Vapour Density	*Not applicable.*
Particle Characteristics	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*Not applicable.*
Percent volatile	<=1 %

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.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	**Condition**
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 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 3M assessments.

11.1. Information on hazard classes as defined in the retained CLP Regulation (EU) No 1272/2008, as amended for

Great Britain.

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. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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
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 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.

Genotoxicity:
Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

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	Ingestion		No data available; calculated ATE >2,000 - =5,000 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
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Dermal	Rat	LD50 4,920 mg/kg
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Inhalation-Dust/Mist (4 hours)	Rat	LC50 < 0.75 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Ingestion	Rat	LD50 958 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
1,6-Bis(2,3-epoxypropoxy)hexane	Dermal	Rat	LD50 > 2,000 mg/kg
1,6-Bis(2,3-epoxypropoxy)hexane	Ingestion	Rat	LD50 3,741 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Dermal	Rabbit	LD50 > 6,000 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Inhalation-	Rat	LC50 > 1.7 mg/l

	Dust/Mist (4 hours)		
Phenol-formaldehyde polymer, glycidyl ether	Ingestion	Rat	LD50 > 4,000 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
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	Ingestion	Professional judgement	LD50 estimated to be 300 - 2,000 mg/kg
red phosphorus	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	Rat	LD50 > 1,600 mg/kg
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Rat	LD50 > 1,000 mg/kg
red phosphorus	Ingestion	Rat	LD50 > 15,000 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
Trichloro(N,N-dimethyloctylamine)boron	Dermal	Rat	LD50 > 2,870 mg/kg
Trichloro(N,N-dimethyloctylamine)boron	Ingestion	Rat	LD50 > 5,000 mg/kg
maleic anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
maleic anhydride	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Oxide glass chemicals	Professional judgement	No significant irritation
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Rabbit	Irritant
Aluminium hydroxide	Rabbit	No significant irritation
1,6-Bis(2,3-epoxypropoxy)hexane	Rabbit	Irritant
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Minimal irritation
Boric acid, zinc salt	Rabbit	No significant irritation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Rabbit	Mild irritant
red phosphorus	Rabbit	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
Trichloro(N,N-dimethyloctylamine)boron	Rabbit	No significant irritation
maleic anhydride	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Oxide glass chemicals	Professional judgement	No significant irritation

1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Rabbit	Corrosive
Aluminium hydroxide	Rabbit	No significant irritation
1,6-Bis(2,3-epoxypropoxy)hexane	Rabbit	Severe irritant
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Mild irritant
Boric acid, zinc salt	Rabbit	Severe irritant
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	official classification	Corrosive
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Rabbit	Moderate irritant
red phosphorus	Rabbit	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
Trichloro(N,N-dimethyloctylamine)boron	Rabbit	No significant irritation
maleic anhydride	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Human	Sensitising
Aluminium hydroxide	Guinea pig	Not classified
1,6-Bis(2,3-epoxypropoxy)hexane	Multiple animal species	Sensitising
Phenol-formaldehyde polymer, glycidyl ether	Human and animal	Sensitising
Boric acid, zinc salt	Guinea pig	Not classified
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	official classification	Sensitising
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Human and animal	Sensitising
red phosphorus	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-alkandiylbis[12-hydroxyoctadecanamide]	Mouse	Not classified
Trichloro(N,N-dimethyloctylamine)boron	Mouse	Sensitising
maleic anhydride	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	similar compounds	Sensitising
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	official classification	Sensitising
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Human	Not classified
maleic anhydride	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phenol-formaldehyde polymer, glycidyl ether	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
Boric acid, zinc salt	In vivo	Mutagenic
bis-[4-(2,3-epoxipropoxi)phenyl]propane	In vivo	Not mutagenic
bis-[4-(2,3-epoxipropoxi)phenyl]propane	In Vitro	Some positive data exist, but the data are not sufficient for classification
red phosphorus	In Vitro	Not mutagenic
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]	In Vitro	Not mutagenic
Trichloro(N,N-dimethyloctylamine)boron	In Vitro	Not mutagenic
maleic anhydride	In vivo	Not mutagenic
maleic anhydride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Aluminium hydroxide	Not specified.	Multiple animal species	Not carcinogenic
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	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
Aluminium hydroxide	Ingestion	Not classified for development	Rat	NOAEL 768 mg/kg/day	during organogenesis
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
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
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	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating 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-alkandiylbis[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-alkandiylbis[12-hydroxyoctadecanamide]	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Trichloro(N,N-dimethyloctylamine)boron	Ingestion	Toxic to female reproduction	Rat	NOAEL 300 mg/kg/day	premating into lactation

Trichloro(N,N-dimethyloctylamine)boron	Ingestion	Toxic to male reproduction	Rat	NOAEL 300 mg/kg/day	43 days
Trichloro(N,N-dimethyloctylamine)boron	Ingestion	Toxic to development	Rat	NOAEL 300 mg/kg/day	premating into lactation
maleic anhydride	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
maleic anhydride	Ingestion	Not classified for male reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
maleic anhydride	Ingestion	Not classified for development	Rat	NOAEL 140 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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	
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
maleic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
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
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
bis-[4-(2,3-epoxipropoxi)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
Trichloro(N,N-dimethyloctylamine)boron	Ingestion	endocrine system | liver | heart | skin | gastrointestinal tract | bone, teeth, nails,	Not classified	Rat	NOAEL 1,000 mg/kg/day	43 days

		and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system				
maleic anhydride	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.0011 mg/l	6 months
maleic anhydride	Inhalation	endocrine system | hematopoietic system | nervous system | kidney and/or bladder | heart | liver | eyes	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
maleic anhydride	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 55 mg/kg/day	80 days
maleic anhydride	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 250 mg/kg/day	183 days
maleic anhydride	Ingestion	heart | nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
maleic anhydride	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
maleic anhydride	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 60 mg/kg/day	90 days
maleic anhydride	Ingestion	skin | endocrine system | immune system | eyes | respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

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 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
Aluminium hydroxide	21645-51-2	Fish	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

1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Green algae	Experimental	72 hours	EC50	>100 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Water flea	Experimental	48 hours	EC50	>100 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Water flea	Analogous Compound	21 days	NOEC	20 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Green algae	Experimental	72 hours	NOEC	66.7 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Activated sludge	Experimental	3 hours	EC50	311.82 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
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Activated sludge	Experimental	3 hours	IC50	>100 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Rainbow trout	Experimental	96 hours	LC50	30 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Green algae	Analogous Compound	72 hours	EbC50	1.8 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Rainbow trout	Analogous Compound	96 hours	LC50	2 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Water flea	Analogous Compound	48 hours	EC50	1.6 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Water flea	Analogous Compound	21 days	NOEC	0.3 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	826-62-0	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
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	Green algae	Estimated	72 hours	NOEC	0.011 mg/l
Boric acid, zinc salt	1332-07-6	Invertebrate	Estimated	24 days	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
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	ErC50	>11 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 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	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-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Activated sludge	Experimental	3 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-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
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
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Bacteria	Experimental	16 hours	EC10	>10,000 mg/l
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Common Carp	Experimental	96 hours	LC50	>100 mg/l
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Green algae	Experimental	72 hours	ErC50	0.13 mg/l
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Water flea	Experimental	48 hours	EC50	>0.75 mg/l
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Green algae	Experimental	72 hours	NOEC	0.022 mg/l
maleic anhydride	108-31-6	Bacteria	Experimental	18 hours	EC10	44.6 mg/l

maleic anhydride	108-31-6	Rainbow trout	Experimental	96 hours	LC50	75 mg/l
maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC50	74.4 mg/l
maleic anhydride	108-31-6	Water flea	Hydrolysis Product	48 hours	EC50	93.8 mg/l
maleic anhydride	108-31-6	Water flea	Experimental	21 days	NOEC	10 mg/l
maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC10	11.8 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Aluminium hydroxide	21645-51-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	1 %removal of DOC	OECD 303A - Simulated Aerobic
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	OECD 111 Hydrolysis func of pH
Oxide glass chemicals	65997-17-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Experimental Biodegradation	28 days	BOD	47 %BOD/ThOD	OECD 301D - Closed bottle test
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Estimated Hydrolysis		Hydrolytic half-life	6.87 days (t 1/2)	
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Analogous Compound Biodegradation	28 days	CO2 evolution	16 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Analogous Compound Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	826-62-0	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Boric acid, zinc salt	1332-07-6	Data not availbl-insufficient	N/A	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Reaction mass of 12-hydroxy-N-[2-[(1-oxodecyl)amino]alkyl]octadecanamide, 12-hydroxy-N-[2-[(1-oxooctyl)amino]alk	484-050-2	Experimental Biodegradation	28 days	CO2 evolution	7 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2

yl]octadecanamide and N,N'-1,2-alkandiylbis[12-hydroxyoctadecanamide]						
red phosphorus	7723-14-0	Experimental Hydrolysis		Hydrolytic half-life	8.3 years (t 1/2)	
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Experimental Biodegradation	28 days	CO2 evolution	≤25 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Experimental Aquatic Inherent Biodegrad.	28 days	BOD	42 %BOD/ThOD	OECD 302C - Modified MITI (II)
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	10.3 hours (t 1/2)	OECD 111 Hydrolysis func of pH
maleic anhydride	108-31-6	Hydrolysis product Biodegradation	25 days	CO2 evolution	>90 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
maleic anhydride	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	0.37 minutes (t 1/2)	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Aluminium hydroxide	21645-51-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Hydrolysis product BCF - Fish	14 days	Bioaccumulation factor	4.7	OECD305-Bioconcentration
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Bioconcentration		Log Kow	1.7	830.7570 Part. Coef by LC
Oxide glass chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Estimated Bioconcentration		Bioaccumulation factor	2.9	
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Analogous Compound Bioconcentration		Log Kow	3.6	OECD 117 log Kow HPLC method
1,2,3,6-tetrahydro-3,6-methanophthalic anhydride	826-62-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Boric acid, zinc salt	1332-07-6	Estimated BCF - Fish	56 days	Bioaccumulation factor	242	OECD305-Bioconcentration
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Bioconcentration		Log Kow	3.242	OECD 117 log Kow HPLC method
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-	484-050-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

alkandiylbis[12-hydroxyoctadecanamide]						
red phosphorus	7723-14-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Trichloro(N,N-dimethyloctylamine)boron	34762-90-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
maleic anhydride	108-31-6	Experimental Bioconcentration		Log Kow	-2.61	OECD 107 log Kow shke flsk mtd

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Modeled Mobility in Soil	Koc	10 l/kg	Episuite™
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Analogous Compound Mobility in Soil	Koc	4,460 l/kg	OECD 121 Estim. of Koc by HPLC
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Modeled Mobility in Soil	Koc	450 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-alkandiylbis[12-hydroxyoctadecanamide]	484-050-2	Experimental Mobility in Soil	Koc	>430000 l/kg	OECD 121 Estim. of Koc by HPLC

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. Other adverse effects

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

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. If no other disposal options are available, waste product that has been completely cured or polymerised may be placed in a landfill properly designed for industrial waste. 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

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN3077	UN3077	UN3077
14.2 UN proper shipping name	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)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	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.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	M7	Not applicable.	Not applicable.
IMDG Segregation Code	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

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

Global inventory status
Contact 3M for more information.

COMAH Regulation, SI 2015/483
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E2 Hazardous to the Aquatic environment	200	500

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012, as amended for GB
No chemicals listed

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended for GB.

SECTION 16: Other information

List of relevant H statements

EUH071	Corrosive to the respiratory tract.
H228	Flammable solid.
H302	Harmful if swallowed.
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.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
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.
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:
Section 08: Personal Protection - Apron Statement information was added.

Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Skin protection - protective clothing information information was deleted.

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