



## Safety Data Sheet

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<b>Transportation version number:</b>	7.00 (06/07/2020)		

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 Structural Adhesive 9820

#### Product Identification Numbers

FS-9100-4524-4      FS-9100-5000-4

7000080192      7000080179

#### 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](http://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:

24-0281-6, 23-9981-4

### TRANSPORTATION INFORMATION

FS-9100-4524-4, FS-9100-5000-4

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

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

**ICAO/IATA:** UN3077, NOT RESTRICTED AS PER SPECIAL PROVISION A197, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXCEPTION, (EPOXY RESIN), III.

## KIT LABEL

### 2.1. Classification of the substance or mixture

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

##### CLASSIFICATION:

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315

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

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

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) |GHS09 (Environment) |

##### Pictograms



Contains:

1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane; bis-[4-(2,3-epoxypropoxy)phenyl]propane; Phenol-formaldehyde polymer, glycidyl ether; 3,3'-Oxybis(ethyleneoxy)bis(propylamine); Formaldehyde, oligomeric reaction products with phenol; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol; 2,4,6-tris(dimethylaminomethyl)phenol

##### HAZARD STATEMENTS:

H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

##### PRECAUTIONARY STATEMENTS

##### Prevention:

P273 Avoid release to the environment.  
P280B Wear protective gloves and eye/face protection.

**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.

P310

Immediately call a POISON CENTRE or doctor/physician.

P333 + P313

If skin irritation or rash occurs: Get medical advice/attention.

P391

Collect spillage.

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

**Revision information:**

Label: CLP Ingredients - kit components 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.



## Safety Data Sheet

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<b>Document group:</b>	23-9981-4	<b>Version number:</b>	18.01
<b>Revision date:</b>	10/03/2023	<b>Supersedes date:</b>	10/01/2022

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 Structural Adhesive 9820 (Part A)

#### Product Identification Numbers

FS-9100-4525-1

7000080180

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

##### Identified uses

Bonding

#### 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

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.

This material has been tested for skin corrosion/irritation and the test results are reflected in the assigned classification.

**CLASSIFICATION:**

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315  
 Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318  
 Skin Sensitization, Category 1 - Skin Sens. 1; H317  
 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) |GHS07 (Exclamation mark) |GHS09 (Environment) |

**Pictograms**

Ingredient	CAS Nbr	EC No.	% by Wt
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	224-207-2	25 - 60
Amine terminated adduct	Trade Secret		20 - 50
Silica, vitreous	60676-86-0	262-373-8	5 - 10
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7		5 - 10
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	202-013-9	5 - 10
Oxide glass chemicals	65997-17-3	266-046-0	1 - 5
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	500-230-6	1 - 5
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	500-005-2	0.5 - 2.5
Bis[(dimethylamino)methyl]phenol	71074-89-0	275-162-0	0.5 - 1.5

**HAZARD STATEMENTS:**

H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H317 May cause an allergic skin reaction.  
 H411 Toxic to aquatic life with long lasting effects.

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

P273 Avoid release to the environment.  
 P280B Wear protective gloves and eye/face protection.

**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.

P310 Immediately call a POISON CENTRE or doctor/physician.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P391 Collect spillage.

**For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:**

**<=125 ml Hazard statements**

H318 Causes serious eye damage.  
 H317 May cause an allergic skin reaction.

**<=125 ml Precautionary statements**

**Prevention:**

P280B Wear protective gloves and eye/face protection.

**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.  
 P310 Immediately call a POISON CENTRE or doctor/physician.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

45% of the mixture consists of components of unknown acute oral toxicity.

Contains 52% 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
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	(CAS-No.) 4246-51-9 (EC-No.) 224-207-2	25 - 60	Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317
Amine terminated adduct	Trade Secret	20 - 50	Substance not classified as hazardous
Silica, vitreous	(CAS-No.) 60676-86-0 (EC-No.) 262-373-8	5 - 10	Substance with a national occupational exposure limit
2,4,6-tris(dimethylaminomethyl)phenol	(CAS-No.) 90-72-2 (EC-No.) 202-013-9	5 - 10	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	5 - 10	Substance with a national occupational exposure limit
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-,	(CAS-No.) 68698-70-4 (EC-No.) 500-230-6	1 - 5	Acute Tox. 4, H302 Skin Irrit. 2, H315

POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE			Eye Irrit. 2, H319 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
Oxide glass chemicals	(CAS-No.) 65997-17-3 (EC-No.) 266-046-0	1 - 5	Substance with a national occupational exposure limit
Formaldehyde, oligomeric reaction products with phenol	(CAS-No.) 9003-35-4 (EC-No.) 500-005-2	0.5 - 2.5	Skin Sens. 1, H317
Bis[(dimethylamino)methyl]phenol	(CAS-No.) 71074-89-0 (EC-No.) 275-162-0	0.5 - 1.5	Acute Tox. 4, H302 Skin Corr. 1C, H314

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 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:

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**

Carbon monoxide  
Carbon dioxide.  
Irritant vapours or gases.

**Condition**

During combustion.  
During combustion.  
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**

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.

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

Keep container tightly closed. Store away from heat.

**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
Silica, vitreous	60676-86-0	UK HSC	TWA(as respirable dust):0.08 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	

Silicon dioxide

67762-90-7 UK HSC

mg/m<sup>3</sup>;TWA(as non-fibrous,  
inhalable fraction)(8 hours):10  
mg/m<sup>3</sup>  
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.

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

Provide appropriate local exhaust when product is heated. 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. Curing enclosures must be exhausted to outdoors or to a suitable emission control device.

**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

## SECTION 9: Physical and chemical properties

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

Physical state	Solid.
Specific Physical Form:	Paste
Colour	Red
Odor	Slight Amine
Odour threshold	<i>No data available.</i>
Melting point/freezing point	<i>Not applicable.</i>
Boiling point/boiling range	<i>No data available.</i>
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Flash point	<i>No data available.</i>
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
pH	<i>substance/mixture is non-soluble (in water)</i>
Kinematic Viscosity	<i>No data available.</i>
Water solubility	<i>No data available.</i>
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Vapour pressure	<i>Not applicable.</i>
Density	<i>No data available.</i>
Relative density	1.07 - 1.13 [Ref Std: WATER=1]
Relative Vapour Density	<i>Not applicable.</i>

### 9.2. Other information

#### 9.2.2 Other safety characteristics

EU Volatile Organic Compounds	<i>No data available.</i>
Evaporation rate	<i>Not applicable.</i>
Molecular weight	<i>Not applicable.</i>
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

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

smoke.  
Heat.  
Sparks and/or flames.

### 10.5 Incompatible materials

None known.

### 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.

#### Skin contact

Harmful in contact with skin. 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

Harmful if swallowed.

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

#### 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 >1,000 - =2,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,525 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 2,850 mg/kg
Amine terminated adduct	Dermal	Rabbit	LD50 2,525 mg/kg

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Amine terminated adduct	Dermal	Rat	LD50 > 1,600 mg/kg
Amine terminated adduct	Ingestion	Rat	LD50 > 1,000 mg/kg
Amine terminated adduct	Ingestion	Rat	LD50 2,850 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Dermal	Rat	LD50 1,280 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Ingestion	Rat	LD50 1,000 mg/kg
Silica, vitreous	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silica, vitreous	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica, vitreous	Ingestion	Rat	LD50 > 5,110 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	Ingestion	Rat	LD50 >300, <1000 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
Formaldehyde, oligomeric reaction products with phenol	Dermal	Rat	LD50 > 2,000 mg/kg
Formaldehyde, oligomeric reaction products with phenol	Ingestion	Rat	LD50 > 2,900 mg/kg
Bis[(dimethylamino)methyl]phenol	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Overall product	In vitro data	Irritant
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Amine terminated adduct	Rabbit	Mild irritant
Amine terminated adduct	Rabbit	Corrosive
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Silica, vitreous	Rabbit	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	Rabbit	Irritant
Oxide glass chemicals	Professional judgement	No significant irritation
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Mild irritant
Bis[(dimethylamino)methyl]phenol	similar compounds	Corrosive

**Serious Eye Damage/Irritation**

Name	Species	Value
Overall product	In vitro data	Corrosive
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Amine terminated adduct	Rabbit	Moderate irritant
Amine terminated adduct	Rabbit	Corrosive
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Silica, vitreous	Rabbit	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE	In vitro data	Severe irritant

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AND 1-PIPERAZINEETHANAMINE		
Oxide glass chemicals	Professional judgement	No significant irritation
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Moderate irritant
Bis[(dimethylamino)methyl]phenol	similar compounds	Corrosive

**Skin Sensitisation**

Name	Species	Value
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Professional judgement	Sensitising
Amine terminated adduct	Human and animal	Sensitising
Amine terminated adduct	Professional judgement	Sensitising
2,4,6-tris(dimethylaminomethyl)phenol	Guinea pig	Not classified
Silica, vitreous	Human and animal	Not classified
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Sensitising

**Respiratory Sensitisation**

Name	Species	Value
Amine terminated adduct	Human	Not classified
Formaldehyde, oligomeric reaction products with phenol	Human	Not classified

**Germ Cell Mutagenicity**

Name	Route	Value
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	In Vitro	Not mutagenic
Amine terminated adduct	In Vitro	Not mutagenic
Amine terminated adduct	In vivo	Not mutagenic
Amine terminated adduct	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,4,6-tris(dimethylaminomethyl)phenol	In Vitro	Not mutagenic
Silica, vitreous	In Vitro	Not mutagenic
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	In Vitro	Not mutagenic
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
Amine terminated adduct	Dermal	Mouse	Some positive data exist, but the data are not

			sufficient for classification
Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Siloxanes and Silicones, di-Me, reaction products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Oxide glass chemicals	Inhalation	Multiple animal species	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
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	premating into lactation
Amine terminated adduct	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Amine terminated adduct	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
Amine terminated adduct	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days
Amine terminated adduct	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Amine terminated adduct	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Amine terminated adduct	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Amine terminated adduct	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	premating into lactation
Silica, vitreous	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
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

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Amine terminated adduct	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	
PHENOL, 4,4'-(1-METHYLETHYLIDENE)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL not available	

BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE			classification	hazards		
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	gastrointestinal tract   heart   endocrine system   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 600 mg/kg/day	59 days
Amine terminated adduct	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Amine terminated adduct	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Amine terminated adduct	Ingestion	gastrointestinal tract   heart   endocrine system   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 600 mg/kg/day	59 days
Amine terminated adduct	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
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
Silica, vitreous	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

**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
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
Amine terminated adduct	Trade Secret	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
Amine terminated adduct	Trade Secret	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
Amine terminated adduct	Trade Secret	Water flea	Estimated	48 hours	EC50	1.8 mg/l
Amine terminated adduct	Trade Secret	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
Amine terminated adduct	Trade Secret	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
Amine terminated adduct	Trade Secret	Green algae	Experimental	72 hours	EC50	>500 mg/l
Amine terminated adduct	Trade Secret	Green algae	Experimental	72 hours	ErC50	>11 mg/l
Amine terminated adduct	Trade Secret	Water flea	Experimental	48 hours	EC50	218.16 mg/l
Amine terminated adduct	Trade Secret	Green algae	Experimental	72 hours	EC10	5.4 mg/l
Amine terminated adduct	Trade Secret	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
Amine terminated adduct	Trade Secret	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l

**3M Structural Adhesive 9820 (Part A)**

Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	N/A	Experimental	96 hours	LC50	718 mg/l
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	>100 mg/l
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Green algae	Experimental	72 hours	EC50	46.7 mg/l
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.44 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
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	Green algae	Experimental	72 hours	EC50	0.13 mg/l
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	Water flea	Experimental	48 hours	EC50	11.4 mg/l
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	Green algae	Experimental	72 hours	EC10	0.062 mg/l
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	N/A	Data not available or insufficient for classification	N/A	N/A	n/a
Bis(dimethylamino)methylphenol	71074-89-0	N/A	Data not available or insufficient for	N/A	N/A	NA

**3M Structural Adhesive 9820 (Part A)**

			classification		
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**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	
Amine terminated adduct	Trade Secret	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
Amine terminated adduct	Trade Secret	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Amine terminated adduct	Trade Secret	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	
Amine terminated adduct	Trade Secret	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Silica, vitreous	60676-86-0	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Experimental Biodegradation	28 days	BOD	4 %BOD/ThOD	OECD 301D - Closed bottle test
Oxide glass chemicals	65997-17-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	Experimental Biodegradation	28 days	CO2 evolution	8.3 %CO2 evolution/THCO2 evolution	OECD 301D - Closed bottle test
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Biodegradation	28 days	BOD	3 %BOD/ThOD	
Bis[(dimethylamino)methyl]phenol	71074-89-0	Modeled Biodegradation	28 days	BOD	41 %CO2 evolution/THCO2 evolution	Catalogic™

**12.3 : Bioaccumulative potential**

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	
Amine terminated adduct	Trade Secret	Experimental Bioconcentration		Log Kow	3.242	OECD 117 log Kow HPLC method
Amine terminated adduct	Trade Secret	Experimental Bioconcentration		Log Kow	-1.25	
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and	67762-90-7	Data not available	N/A	N/A	N/A	N/A

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Silicones, di-Me, reaction products with silica		or insufficient for classification				
2,4,6-tris(dimethylamino methyl)phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	830.7550 Part.Coef Shake Flask
Oxide glass chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
PHENOL, 4,4'-(1-METHYLETHYLDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE	68698-70-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Bioconcentration		Bioaccumulation factor	2.57	
Bis(dimethylamino)methylphenol	71074-89-0	Modeled Bioconcentration		Log Kow	-2.34	ACD/Labs ChemSketch™

**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	1 l/kg	ACD/Labs ChemSketch™
Amine terminated adduct	Trade Secret	Modeled Mobility in Soil	Koc	450 l/kg	Episuite™
Amine terminated adduct	Trade Secret	Modeled Mobility in Soil	Koc	1 l/kg	ACD/Labs ChemSketch™
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Experimental Mobility in Soil	Koc	637 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. 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.(PHENOL,4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PHENOL,4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PHENOL,4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE, N,N-DIETHYL-1,3-PROPANEDIAMINE AND 1-PIPERAZINEETHANAMINE))
<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>
Amine terminated adduct	Trade Secret	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

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.
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.

#### Revision information:

EU Section 09: pH information information was modified.

GB Section 02: CLP Ingredient table information was added.

GB Section 02: Other hazards phrase information was added.  
GB Section 04: First Aid - Symptoms and Effects (GB CLP) information was added.  
GB Section 04: Information on toxicological effects information was added.  
GB Section 12: Classification Warning information was added.  
GB Section 15: Carcinogenicity information information was added.  
GB Section 15: Chemical Safety Assessment information was added.  
GBSDS Section 14 Transport in bulk - Main Heading information was added.  
GBSDS Section 14 UN Number information was added.  
Industrial Transfer: Section 16: Annex information was deleted.  
Industrial Use of Adhesives: Section 16: Annex information was deleted.  
CLP: Ingredient table information was deleted.  
Label: CLP Percent Unknown information was deleted.  
Section 02: Label Elements: GB Percent Unknown information was added.  
Section 2: Other hazards phrase information was deleted.  
Section 3: Composition/ Information of ingredients table information was added.  
Section 3: Composition/ Information of ingredients table information was deleted.  
Section 04: Information on toxicological effects information was deleted.  
Section 5: Hazardous combustion products table information was modified.  
Section 7: Precautions safe handling information information was modified.  
Section 8: 8.2. Exposure controls information information was deleted.  
Section 8: 8.2.3. Environmental exposure controls information information was deleted.  
Section 8: DNEL table row information was deleted.  
Section 8: Personal Protection - Thermal hazards information information was deleted.  
Section 8: PNEC table row information was deleted.  
Section 9: Vapour density value information was modified.  
Section 11: Acute Toxicity table information was modified.  
Section 11: Classification disclaimer information was deleted.  
Section 11: GB Classification disclaimer information was added.  
Section 11: GB No endocrine disruptor information available warning information was added.  
Section 11: Germ Cell Mutagenicity Table information was modified.  
Section 11: No endocrine disruptor information available warning information was deleted.  
Section 11: Reproductive Toxicity Table information was modified.  
Section 11: Serious Eye Damage/Irritation Table information was modified.  
Section 11: Skin Sensitization Table information was modified.  
Section 11: Target Organs - Repeated Table information was modified.  
Section 11: Target Organs - Single Table information was modified.  
Section 12: 12.6. Endocrine Disrupting Properties information was deleted.  
Section 12: 12.6. Other adverse effects information was added.  
Section 12: 12.7. Other adverse effects information was deleted.  
Section 12: Classification Warning information was deleted.  
Section 12: Component ecotoxicity information information was modified.  
Section 12: Mobility in soil information information was modified.  
Prints No Data if Adverse effects information is not present information was deleted.  
Section 12: No endocrine disruptor information available warning information was added.  
Section 12: No endocrine disruptor information available warning information was deleted.  
Section 12: Persistence and Degradability information information was modified.  
Section 12: Bioaccumulative potential information information was modified.  
Section 13: Standard Phrase Category Waste GHS information was modified.  
Section 14 Classification Code – Regulation Data information was modified.  
Section 14 Hazard Class + Sub Risk – Regulation Data information was modified.  
Section 14 Hazardous/Not Hazardous for Transportation information was modified.  
Section 14 Other Dangerous Goods – Regulation Data information was modified.  
Section 14 Packing Group – Regulation Data information was modified.  
Section 14 Proper Shipping Name information was modified.  
Section 14 Segregation – Regulation Data information was modified.  
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was deleted.

Section 14 UN Number Column data information was modified.

Section 14 UN Number information was deleted.

Section 15: Carcinogenicity information information was deleted.

Section 15: Chemical Safety Assessment information was deleted.

Section 15: Seveso Hazard Category Text information was added.

Annex: Prediction of exposure statement information was deleted.

Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was added.

Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was deleted.

Section 16: Web address information was added.

Section 16: Web address information was deleted.

**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 SDSs for Great Britain are available at [www.3M.com/uk](http://www.3M.com/uk)**

For Northern Ireland documents, please contact your 3M representative to obtain a copy.



## Safety Data Sheet

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<b>Document group:</b>	24-0281-6	<b>Version number:</b>	11.00
<b>Revision date:</b>	08/03/2023	<b>Supersedes date:</b>	04/01/2023

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 Structural Adhesive 9820 (Part B)

#### Product Identification Numbers

FS-9100-4526-9      FS-9100-5217-4

7000080181      7000080303

#### 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

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 2 - Eye Irrit. 2; H319  
 Skin Sensitization, Category 1 - Skin Sens. 1; H317  
 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

WARNING.

#### Symbols

GHS07 (Exclamation mark) |GHS09 (Environment) |

#### Pictograms



Ingredient	CAS Nbr	EC No.	% by Wt
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	216-823-5	30 - 35
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane		701-263-0	8 - 15
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4		7 - 13
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	238-098-4	1 - 5

#### HAZARD STATEMENTS:

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H411	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.

7% of the mixture consists of components of unknown acute oral toxicity.

Contains 28% of components with unknown hazards to the aquatic environment.

### 2.3. Other hazards

May cause thermal burns.

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
bis-[4-(2,3-epoxypropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	30 - 35	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Acrylic copolymer	Trade Secret	10 - 30	Substance not classified as hazardous
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\} methyl)oxirane	(EC-No.) 701-263-0	8 - 15	Skin Irrit. 2, H315 Skin Sens. 1A, H317 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
Phenol-formaldehyde polymer, glycidyl ether	(CAS-No.) 28064-14-4	7 - 13	Skin Sens. 1, H317 Aquatic Chronic 2, H411
Polyester polyol	Trade Secret	3 - 7	Substance not classified as hazardous
Oxide glass chemicals	(CAS-No.) 65997-17-3 (EC-No.) 266-046-0	3 - 7	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	1 - 5	Aquatic Chronic 3, H412 Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Silica, vitreous	(CAS-No.) 60676-86-0 (EC-No.) 262-373-8	1 - 3	Substance with a national occupational exposure limit
Silicon dioxide	(CAS-No.) 7631-86-9 (EC-No.) 231-545-4	1 - 3	Substance with a national occupational exposure limit
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	(CAS-No.) 2602-34-8 (EC-No.) 220-011-6	1 - 2	Substance not classified as hazardous
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	1 - 2	Substance with a national occupational exposure limit

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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319

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 skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

**Eye contact**

Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate 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:

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****Substance**

Aldehydes.  
Carbon monoxide  
Carbon dioxide.  
Hydrogen Chloride

**Condition**

During combustion.  
During combustion.  
During combustion.  
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 with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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

Avoid skin contact with hot material. For industrial/occupational use only. Not for consumer sale or use. 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.)

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

Keep container tightly closed. 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
Silica, vitreous	60676-86-0	UK HSC	TWA(as respirable dust):0.08 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>	

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>
DUST, INERT OR NUISANCE	7631-86-9	UK HSC	TWA(as respirable dust):4 mg/m <sup>3</sup> ;TWA(as inhalable dust):10 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.

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Provide appropriate local exhaust when product is heated. 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. Curing enclosures must be exhausted to outdoors or to a suitable emission control device.

### 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 (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

**Thermal hazards**

Wear heat insulating gloves, indirect vented goggles, and a full face shield when handling hot material to prevent thermal burns.

*Applicable Norms/Standards*

Use gloves tested to EN 407

## SECTION 9: Physical and chemical properties

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

Physical state	Solid.
Specific Physical Form:	Paste
Colour	Yellow
Odor	Odourless
Odour threshold	<i>No data available.</i>
Melting point/freezing point	<i>Not applicable.</i>
Boiling point/boiling range	<i>No data available.</i>
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Flash point	<i>No data available.</i>
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
pH	<i>substance/mixture is non-soluble (in water)</i>
Kinematic Viscosity	<i>No data available.</i>
Water solubility	<i>No data available.</i>
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Vapour pressure	<i>Not applicable.</i>
Density	<i>No data available.</i>
Relative density	1.01 - 1.13 [Ref Std:WATER=1]
Relative Vapour Density	<i>Not applicable.</i>

### 9.2. Other information

#### 9.2.2 Other safety characteristics

EU Volatile Organic Compounds	<i>No data available.</i>
Evaporation rate	<i>Not applicable.</i>
Molecular weight	<i>Not applicable.</i>
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

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

### 10.5 Incompatible materials

Strong bases.

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.

#### Skin contact

Thermal burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction. 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

Thermal burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction. Moderate eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

#### Ingestion

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

#### 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

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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
Acrylic copolymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Acrylic copolymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\} methyl)oxirane	Dermal	Rat	LD50 > 2,000 mg/kg
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\} methyl)oxirane	Ingestion	Rat	LD50 > 5,000 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Dermal	Rabbit	LD50 > 6,000 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.7 mg/l
Phenol-formaldehyde polymer, glycidyl ether	Ingestion	Rat	LD50 > 4,000 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
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
Silicon dioxide	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silicon dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silicon dioxide	Ingestion	Rat	LD50 > 5,110 mg/kg
Silica, vitreous	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silica, vitreous	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica, vitreous	Ingestion	Rat	LD50 > 5,110 mg/kg
Silane, triethoxy[3-(oxiranylethoxy)propyl]-	Dermal	Rabbit	LD50 4,250 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silane, triethoxy[3-(oxiranylethoxy)propyl]-	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
Silane, triethoxy[3-(oxiranylethoxy)propyl]-	Ingestion	Rat	LD50 > 2,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Rabbit	Mild irritant
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\} methyl)oxirane	Rabbit	Irritant
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Minimal irritation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	Irritant
Oxide glass chemicals	Professional judgement	No significant irritation
Silicon dioxide	Rabbit	No significant irritation
Silica, vitreous	Rabbit	No significant irritation
Silane, triethoxy[3-(oxiranylethoxy)propyl]-	Rabbit	No significant irritation

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Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
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**Serious Eye Damage/Irritation**

Name	Species	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit	Moderate irritant
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	Rabbit	No significant irritation
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Mild irritant
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	No significant irritation
Oxide glass chemicals	Professional judgement	No significant irritation
Silicon dioxide	Rabbit	No significant irritation
Silica, vitreous	Rabbit	No significant irritation
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	Rabbit	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation

**Skin Sensitisation**

Name	Species	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Human and animal	Sensitising
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	Multiple animal species	Sensitising
Phenol-formaldehyde polymer, glycidyl ether	Human and animal	Sensitising
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Mouse	Sensitising
Silicon dioxide	Human and animal	Not classified
Silica, vitreous	Human and animal	Not classified
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	Guinea pig	Not classified
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified

**Respiratory Sensitisation**

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

**Germ Cell Mutagenicity**

Name	Route	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	In vivo	Not mutagenic
bis-[4-(2,3-epoxipropoxy)phenyl]propane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	In vivo	Not mutagenic
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	In Vitro	Some positive data exist, but the data are not sufficient for classification

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Phenol-formaldehyde polymer, glycidyl ether	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
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silicon dioxide	In Vitro	Not mutagenic
Silica, vitreous	In Vitro	Not mutagenic
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	In vivo	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

**Carcinogenicity**

Name	Route	Species	Value
bis-[4-(2,3-epoxypropoxy)phenyl]propane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Silicon dioxide	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	Dermal	Mouse	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

**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
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
Silicon dioxide	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Silica, vitreous	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation

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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

**Target Organ(s)**
**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
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	

**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
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	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
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
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Silicon dioxide	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Silica, vitreous	Inhalation	respiratory system	Not classified	Human	NOAEL Not	occupational

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		silicosis			available	exposure
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure

**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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	ErC50	>11 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Acrylic copolymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	701-263-0	Green algae	Experimental	72 hours	EC50	>1.8 mg/l
Reaction mass of 2,2'-	701-263-0	Rainbow trout	Experimental	96 hours	LC50	0.55 mg/l

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[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane						
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	701-263-0	Water flea	Experimental	48 hours	EC50	1.6 mg/l
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	701-263-0	Water flea	Analogous Compound	21 days	NOEC	0.3 mg/l
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy\}methyl)oxirane	701-263-0	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Golden Orfe	Experimental	96 hours	LC50	5.7 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Water flea	Experimental	48 hours	EC50	3.5 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

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Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 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
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Silicon dioxide	7631-86-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Green algae	Experimental	72 hours	EC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Water flea	Experimental	48 hours	EC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Green algae	Experimental	72 hours	NOEC	100 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

**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 Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Acrylic copolymer	Trade Secret	Data not available - insufficient	N/A	N/A	N/A	N/A
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-	701-263-0	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	EC C.4.E Closed Bottle Test

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ylmethoxy)benzyl]phenoxy)methyl)oxirane						
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	701-263-0	Analogous Compound Hydrolysis		Hydrolytic half-life (pH 7)	86 hours (t 1/2)	OECD 111 Hydrolysis function of pH
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Laboratory Biodegradation	28 days	CO2 evolution	10-16 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2
Oxide glass chemicals	65997-17-3	Data not available/insufficient	N/A	N/A	N/A	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
Silica, vitreous	60676-86-0	Data not available/insufficient	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not available/insufficient	N/A	N/A	N/A	N/A
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Experimental Biodegradation	28 days	BOD	53 %BOD/ThOD	OECD 301F - Manometric respirometry
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Experimental Hydrolysis		Hydrolytic half-life	36 hours (t 1/2)	
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available/insufficient	N/A	N/A	N/A	N/A

**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	OECD 117 log Kow HPLC method
Acrylic copolymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(\{2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	701-263-0	Experimental Bioconcentration		Log Kow	3.6	OECD 117 log Kow HPLC method
Phenol-formaldehyde	28064-14-4	Data not available or insufficient for	N/A	N/A	N/A	N/A

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polymer, glycidyl ether		classification				
Oxide glass chemicals	65997-17-3	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	
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Estimated Bioconcentration		Bioaccumulation factor	2.5	
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

**12.4. Mobility in soil**

Material	Cas No.	Test type	Study Type	Test result	Protocol
bis-[4-(2,3-epoxypropoxy)phenyl]propane	1675-54-3	Modeled Mobility in Soil	Koc	450 l/kg	Episuite™
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	701-263-0	Experimental Mobility in Soil	Koc	4,460 l/kg	OECD 121 Estim. of Koc by HPLC
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Estimated Mobility in Soil	Koc	57 l/kg	Episuite™
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Estimated Mobility in Soil	Koc	2,700 l/kg	Episuite™

**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. 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)
<b>14.1 UN number</b>	UN3077	UN3077	UN3077
<b>14.2 UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(EPOXY RESIN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(EPOXY RESIN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(EPOXY RESIN)
<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
Silicon dioxide	7631-86-9	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 to Annex XVII of regulation (EC) 1907/2006, as amended for GB, with regard to restrictions on the manufacture, placing on the market and use when present in certain dangerous conditions. 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 UK REACH Annex XVII

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

**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**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
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:**

GB Section 02: CLP Ingredient table information was added.  
GB Section 02: Other hazards phrase information was added.  
GB Section 04: First Aid - Symptoms and Effects (GB CLP) information was added.  
GB Section 04: Information on toxicological effects information was added.  
GB Section 12: Classification Warning information was added.  
GB Section 15: Carcinogenicity information information was added.  
GB Section 15: Chemical Safety Assessment information was added.  
GBSDS Section 14 Transport in bulk - Main Heading information was added.  
GBSDS Section 14 UN Number information was added.  
CLP: Ingredient table information was deleted.  
Label: CLP Percent Unknown information was deleted.  
Section 02: Label Elements: GB Percent Unknown information was added.  
Section 2: Other hazards phrase information was deleted.  
Section 3: Composition/ Information of ingredients table information was added.  
Section 3: Composition/ Information of ingredients table information was deleted.  
Section 03: SCL table information was added.  
Section 03: SCL table information was deleted.  
Section 04: First Aid - Symptoms and Effects (CLP) information was deleted.  
Section 04: Information on toxicological effects information was deleted.  
Section 8: Occupational exposure limit table information was modified.  
Section 8: Personal Protection - Thermal hazards information information was modified.  
Section 9: Vapour density value information was modified.  
Section 11: Classification disclaimer information was deleted.  
Section 11: GB Classification disclaimer information was added.  
Section 11: GB No endocrine disruptor information available warning information was added.  
Section 11: No endocrine disruptor information available warning information was deleted.  
Section 12: 12.6. Endocrine Disrupting Properties information was deleted.  
Section 12: 12.6. Other adverse effects information was added.  
Section 12: 12.7. Other adverse effects information was deleted.  
Section 12: Classification Warning information was deleted.  
Section 12: Component ecotoxicity information information was modified.  
Section 12: Mobility in soil information information was modified.  
Prints No Data if Adverse effects information is not present information was deleted.  
Section 12: No endocrine disruptor information available warning information was added.  
Section 12: No endocrine disruptor information available warning information was deleted.  
Section 12: Persistence and Degradability information information was modified.  
Section 12: Biocumulative potential information information was modified.  
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was deleted.  
Section 14 UN Number information was deleted.  
Section 15: Carcinogenicity information information was deleted.  
Section 15: Chemical Safety Assessment information was deleted.  
Section 15: Seveso Hazard Category Text information was added.  
Section 15: Seveso Hazard Category Text information was deleted.  
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material.

information was added.

Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was deleted.

Section 16: Web address information was added.

Section 16: Web address information was deleted.

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 SDSs for Great Britain are available at [www.3M.com/uk](http://www.3M.com/uk)**

For Northern Ireland documents, please contact your 3M representative to obtain a copy.