



Safety Data Sheet

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

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

1.1. Product identifier

3M 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.
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E Mail: tox.uk@mmm.com
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1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

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

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 ³	
Glass, oxide, chemicals	65997-17-3	UK HSC	TWA(as fiber):5 mg/m ³ (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/m³;TWA(as non-fibrous,
inhalable fraction)(8 hours):10
mg/m³
TWA(as respirable dust):2.4
mg/m³;TWA(as inhalable
dust):6 mg/m³

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

Polymer laminate

Thickness (mm)

No data available

Breakthrough Time

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	No data available.
Melting point/freezing point	Not applicable.
Boiling point/boiling range	No data available.
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Flash point	No data available.
Autoignition temperature	No data available.
Decomposition temperature	No data available.
pH	substance/mixture is non-soluble (in water)
Kinematic Viscosity	No data available.
Water solubility	No data available.
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Vapour pressure	Not applicable.
Density	No data available.
Relative density	1.07 - 1.13 [Ref Std: WATER=1]
Relative Vapour Density	Not applicable.

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	No data available.
Evaporation rate	Not applicable.
Molecular weight	Not applicable.
Percent volatile	1 %

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

Stable.

10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.4 Conditions to avoid

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

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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)methyl]phenol	71074-89-0	N/A	Data not available or insufficient for	N/A	N/A	NA

			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-METHYLETHYLDENE)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

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)methyl]phenol	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

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN3077	UN3077	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(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))
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	M7	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

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

SECTION 15: Regulatory information

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

Carcinogenicity

<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: Biocumulative 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

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