Safety Data Sheet

Document group:	09-4231-8	**Version number:**	15.00
Revision date:	03/06/2013	**Supersedes date:**	21/12/2012

Transportation version number: 1.01 (17/11/2011)

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™ Panel Bonding Adhesive, P.N. 08115

Product identification numbers
FS-9100-3423-0

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

1.3. Details of the supplier of the substance or mixture

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

E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

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

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

09-4229-2, 09-4230-0

TRANSPORTATION INFORMATION

FS-9100-3423-0

Component 1
ADR/RID: UN3267, CORROSIVE LIQUID, BAISC, ORGANIC, N.O.S., LIMITEDQUANTITY, (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL ANDPOLYMERIC DIAMIDE), 8., II , (E), ADR Classification Code: C7.
IMDG-CODE: UN3267, CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S., (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL ANDPOLYMERIC DIAMIDE), 8., II , IMDG-Code segregation code: 18- ALKALIS, LIMITED

QUANTITY, EMS: FA,SB.
ICAO/IATA: UN3267, CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S., (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL ANDPOLYMERIC DIAMIDE), 8., II , LIMITED QUANTITY.

Component 2
ADR/RID: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID,N.O.S.LIMITED QUANTITY, (LIQUID EPOXY RESIN), 9., III, (E), ADR Classification Code: M6.
IMDG-CODE: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID, N.O.S., (LIQUID EPOXY RESIN), 9., III, LIMITED QUANTITY, Marine Pollutant, (LIQUID EPOXY RESIN), EMS: FA,SF.
ICAO/IATA: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID,N.O.S., (LIQUID EPOXY RESIN), 9., III, fish and tree marking may be required (> 5kg/l).

KIT LABEL

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
DANGER!

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

Pictograms

HAZARD STATEMENTS:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H360D	May damage the unborn child.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280D	Wear protective gloves, protective clothing, and eye/face protection.
P273	Avoid release to the environment.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

SUPPLEMENTAL INFORMATION

Supplemental Hazard Statements:

EUH205	Contains epoxy constituents. May produce an allergic reaction.

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Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)

Toxic

Dangerous for the environment

Contains:
Consult the component labels for disclosable ingredients.

Risk phrases

R61	May cause harm to the unborn child.
R34	Causes burns.
R43	May cause sensitisation by skin contact.
R51/53	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Safety phrases

S53	Avoid exposure - obtain special instructions before use.
S22	Do not breathe dust.
S23A	Do not breathe vapour.
S36/37/39B	Wear suitable protective clothing, gloves, and eye and face protection.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28C	After contact with skin, wash immediately with plenty of water for 15 minutes.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Special provisions concerning the labelling of certain substances

Contains epoxy resins. See information supplied by manufacturer.
Restricted to professional users.

Revision information:
Revision Changes:
Section 1: Product name was modified.
Kit: Component document group number(s) was modified.
Page Heading: Product name was modified.
Copyright was modified.
Label: CLP Precautionary - Response was modified.

Safety Data Sheet

Document group:	09-4229-2	**Version number:**	18.00
Revision date:	20/05/2013	**Supersedes date:**	21/12/2012

Transportation version number: 1.00 (20/04/2011)

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

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

1.1. Product identifier
3M Panel Bonding Adhesive - Accelerator, P.N. 08115

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

Identified uses
Automotive.

1.3. Details of the supplier of the substance or mixture

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

E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

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

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Corrosion/Irritation, Category 1B - Skin Corr. 1B; H314
Skin Sensitization, Category 1B - Skin Sens. 1B; H317
Reproductive Toxicity, Category 1B - Repr. 1B; H360

For full text of H phrases, see Section 16.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive
Indication of danger
Toxic for reproduction; Repr. Cat. 2; R61
Corrosive; C; R34
Sensitizing; R43

For full text of R phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
DANGER!

Symbols:
GHS05 (Corrosion) | GHS07 (Exclamation mark) | GHS08 (Health Hazard) |

Pictograms

Ingredient	CAS Nbr	% by Wt
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1	15 - 40
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	7 - 13
Imidazole	288-32-4	1 - 5
2-Piperazin-1-ylethylamine	140-31-8	0.1 - 1.5

HAZARD STATEMENTS:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H360D	May damage the unborn child.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280D	Wear protective gloves, protective clothing, 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.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER or doctor/physician.

SUPPLEMENTAL INFORMATION

Supplemental Precautionary Statements:
Restricted to professional users.

35.76% of the mixture consists of components of unknown acute oral toxicity.
36.98% of the mixture consists of components of unknown acute dermal toxicity.

Contains 36.98% of components with unknown hazards to the aquatic environment.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)

Toxic

Contains:
Imidazole; 3,3'-Oxybis(ethyleneoxy)bis(propylamine); Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine); 2-Piperazin-1-ylethylamine

Risk phrases

R61	May cause harm to the unborn child.
R34	Causes burns.
R43	May cause sensitisation by skin contact.

Safety phrases

S53	Avoid exposure - obtain special instructions before use.
S22	Do not breathe dust.
S23A	Do not breathe vapour.
S36/37/39B	Wear suitable protective clothing, gloves, and eye and face protection.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28C	After contact with skin, wash immediately with plenty of water for 15 minutes.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Special provisions concerning the labelling of certain substances

Restricted to professional users.

2.3. Other hazards

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines. May cause chemical gastrointestinal burns.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1		15 - 40	Xi:R38-41; R43 (Self Classified) Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1, H317 (Self Classified)
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4		9 - 30	
Silica, vitreous	60676-86-0	EINECS 262-373-8	10 - 30	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	EINECS 224-207-2	7 - 13	C:R34; R52/53 (Self Classified) Skin Corr. 1B, H314; Aquatic Chronic 3, H412 (Self

				Classified)
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	EINECS 202-013-9	5 - 10	Xn:R22; Xi:R36-38 (EU) Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319 (CLP)
Inorganic Salt	Trade Secret		1 - 5	
Dimethyl siloxane, reaction product with silica	67762-90-7		1 - 5	
Imidazole	288-32-4	EINECS 206-019-2	1 - 5	Repr.Cat.2:R61; C:R34 (Vendor) Xn:R21-22 (Self Classified) Skin Corr. 1C, H314; Repr. 1B, H360D (Vendor) Acute Tox. 3, H311; Acute Tox. 4, H302 (Self Classified)
Bis[(dimethylamino)methyl]phenol	71074-89-0	EINECS 275-162-0	0.1 - 1.5	C:R34 (Vendor) Xn:R22 (Self Classified) Skin Corr. 1B, H314 (Vendor) Acute Tox. 4, H302 (Self Classified)
2-Piperazin-1-ylethylamine	140-31-8	EINECS 205-411-0	0.1 - 1.5	C:R34; Xn:R21-22; R43; R52/53 (EU) Acute Tox. 3, H311; Acute Tox. 4, H302; Skin Corr. 1B, H314; Skin Sens. 1B, H317; Aquatic Chronic 3, H412 (CLP)
Toluene	108-88-3	EINECS 203-625-9	<= 0.5	Repr.Cat.3:R63; F:R11; Xn:R48/20; Xn:R65; Xi:R38; R67 - Nota 4 (EU) Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; Repr. 2, H361d; STOT SE 3, H336; STOT RE 1, H372 (CLP)
Quartz	14808-60-7	EINECS 238-878-4	<= 0.03	Xn:R48/20 (Vendor) STOT RE 1, H372 (Self Classified)
Acrylonitrile	107-13-1	EINECS 203-466-5	< 0.002	Carc.Cat.2:R45; F:R11; T:R23-24-25; Xi:R37-38-41; N:R51/53; R43 - Nota D,E (EU) Flam. Liq. 2, H225; Acute Tox. 3, H331; Acute Tox. 3, H311; Acute Tox. 3, H301; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1B, H317; Carc. 1B, H350; STOT SE 3, H335; Aquatic Chronic 2, H411 - Nota D (CLP)

Please see section 16 for the full text of any R phrases and H statements referred to in this section
Please refer to section 15 for the any applicable Notas that have been applied to the above components

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1 Information on toxicological effects

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

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

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Advice for fire-fighters
No unusual fire or explosion hazards are anticipated.

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. Warning: A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. 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
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Place in a metal container approved for use in transportation

by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Clean up residue 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
Do not use in a confined area or areas with little or no air movement. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store away from acids. Store away from oxidising agents. Store away from areas where product may come into contact with food or pharmaceuticals.

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Acrylonitrile	107-13-1	Health and Safety Comm. (UK)	TWA:4.4 mg/m3(2 ppm)	Skin Notation
Toluene	108-88-3	Health and Safety Comm. (UK)	TWA: 191 mg/m³ (50 ppm); STEL: 384 mg/m³ (100 ppm)	Skin Notation
Silica, crystalline (airborne particles of respirable size)	14808-60-7	Health and Safety Comm. (UK)	TWA(respirable):0.1 mg/m3	
Silica, vitreous	60676-86-0	Health and Safety Comm. (UK)	TWA(as respirable dust):0.08 mg/m³	
Silica, amorphous	60676-86-0	Health and Safety Comm. (UK)	TWA(as inhalable dust):6 mg/m3	
Silica, amorphous	67762-90-7	Health and Safety Comm. (UK)	TWA(as inhalable dust):6 mg/m3;TWA(as respirable dust):2.4 mg/m3	

Health and Safety Comm. (UK) : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
ppm: parts per million
mg/m³: milligrams per cubic metre
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Wear eye/face protection.
The following eye protection(s) are recommended: Full face shield.
Safety glasses with side shields.
Indirect vented goggles.

Skin/hand protection

Wear protective gloves.
Gloves made from the following material(s) are recommended: Polymer laminate

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Appearance/Odour	Tan liquid, slight amine odour.
Odour threshold	*No data available.*
pH	*Not applicable.*
Boiling point/boiling range	>=110 ºC
Melting point	*Not applicable.*
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	110 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	< 26,664.4 Pa [@ 20 ºC]
Relative density	± 1.2 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*

Evaporation rate	< 1 [*Ref Std:*BUOAC=1]
Vapour density	*No data available.*
Decomposition temperature	*No data available.*
Viscosity	> 200 mm²/sec
Density	1.2 g/ml

9.2. Other information

Hazardous air pollutants	0.42 % weight [*Test Method:*Calculated]
Volatile organic compounds (VOC)	5 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*EU VOC]
Volatile organic compounds (VOC)	5 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Volatile organic compounds (VOC)	0.5 % weight [*Test Method:*calculated per CARB title 2]
Percent volatile	0.5 % weight
VOC less H2O & exempt solvents	5 g/l [*Test Method:*calculated SCAQMD rule 443.1]

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
None known.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
Carbon monoxide.	Not specified.
Carbon dioxide.	Not specified.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

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

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

Ingestion
May be harmful if swallowed.
Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause target organ effects after ingestion.

Target Organ Effects:

Single exposure may cause:
Methemoglobinemia: Signs/symptoms may include headache, dizziness, nausea, difficulty breathing, and generalised weakness.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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

Toxicological Data

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		Data not available or insufficient for classification; calculated ATE2,032.3 mg/kg
Overall product	Ingestion		Data not available or insufficient for classification; calculated ATE3,667.2 mg/kg
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification
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
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Dermal	Rabbit	LD50 > 3,000 mg/kg
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Ingestion	Rat	LD50 > 15,300 mg/kg

3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,500 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 3,160 mg/kg
2,4,6-Tris(dimethylaminomethyl)phenol	Dermal	Rat	LD50 1,280 mg/kg
2,4,6-Tris(dimethylaminomethyl)phenol	Ingestion	Rat	LD50 1,000 mg/kg
Dimethyl siloxane, reaction product with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dimethyl siloxane, reaction product with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Dimethyl siloxane, reaction product with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Imidazole	Dermal		LD50 estimated to be 200 - 1,000 mg/kg
Imidazole	Ingestion	Rat	LD50 970 mg/kg
Inorganic Salt	Dermal	Rat	LD50 estimated to be > 5,000 mg/kg
Inorganic Salt	Ingestion	Rat	LD50 9,285 mg/kg
Bis[(dimethylamino)methyl]phenol	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
2-Piperazin-1-ylethylamine	Dermal	Rabbit	LD50 865 mg/kg
2-Piperazin-1-ylethylamine	Ingestion	Rat	LD50 1,470 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 2,600 mg/kg
Quartz	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz	Ingestion		LD50 estimated to be > 5,000 mg/kg
Acrylonitrile	Dermal	Rabbit	LD50 226 mg/kg
Acrylonitrile	Inhalation-Vapor (4 hours)	Rat	LC50 0.47 mg/l
Acrylonitrile	Ingestion	Rat	LD50 93 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	Rabbit	Corrosive
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Irritant
Silica, vitreous	Rabbit	No significant irritation
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated		Data not available or insufficient for classification
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
2,4,6-Tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Dimethyl siloxane, reaction product with silica	Rabbit	No significant irritation
Imidazole		Data not available or insufficient for classification
Inorganic Salt		Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol		Data not available or insufficient for classification
2-Piperazin-1-ylethylamine	Rabbit	Corrosive
Toluene	Rabbit	Irritant
Quartz		No significant irritation
Acrylonitrile		Irritant

Serious Eye Damage/Irritation

Name	Species	Value

Overall product	similar health hazards	Corrosive
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	similar health hazards	Corrosive
Silica, vitreous	Rabbit	No significant irritation
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated		Data not available or insufficient for classification
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	similar health hazards	Corrosive
2,4,6-Tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Dimethyl siloxane, reaction product with silica	Rabbit	No significant irritation
Imidazole		Data not available or insufficient for classification
Inorganic Salt		Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol		Data not available or insufficient for classification
2-Piperazin-1-ylethylamine	Rabbit	Corrosive
Toluene	Rabbit	Moderate irritant
Quartz		Data not available or insufficient for classification
Acrylonitrile		Corrosive

Skin Sensitisation

Name	Species	Value
Overall product	Guinea pig	Sensitising
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Guinea pig	Sensitising
Silica, vitreous	Human and animal	Not sensitizing
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Guinea pig	Some positive data exist, but the data are not sufficient for classification
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification
2,4,6-Tris(dimethylaminomethyl)phenol	Guinea pig	Some positive data exist, but the data are not sufficient for classification
Dimethyl siloxane, reaction product with silica	Human and animal	Not sensitizing
Imidazole		Data not available or insufficient for classification
Inorganic Salt		Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol		Data not available or insufficient for classification
2-Piperazin-1-ylethylamine	Guinea pig	Sensitising
Toluene	Guinea pig	Not sensitizing
Quartz		Data not available or insufficient for classification
Acrylonitrile		Sensitising

Respiratory Sensitisation

Name	Species	Value
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification
Silica, vitreous		Data not available or insufficient for classification
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated		Data not available or insufficient for classification
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification
2,4,6-Tris(dimethylaminomethyl)phenol		Data not available or insufficient for

		classification
Dimethyl siloxane, reaction product with silica		Data not available or insufficient for classification
Imidazole		Data not available or insufficient for classification
Inorganic Salt		Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol		Data not available or insufficient for classification
2-Piperazin-1-ylethylamine		Data not available or insufficient for classification
Toluene		Data not available or insufficient for classification
Quartz		Data not available or insufficient for classification
Acrylonitrile		Data not available or insufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification
Silica, vitreous	In Vitro	Not mutagenic
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated		Data not available or insufficient for classification
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification
2,4,6-Tris(dimethylaminomethyl)phenol	In Vitro	Not mutagenic
Dimethyl siloxane, reaction product with silica	In Vitro	Not mutagenic
Imidazole		Data not available or insufficient for classification
Inorganic Salt		Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol		Data not available or insufficient for classification
2-Piperazin-1-ylethylamine	In vivo	Not mutagenic
2-Piperazin-1-ylethylamine	In Vitro	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Quartz	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification
Acrylonitrile	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification
Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated			Data not available or insufficient for classification

3,3'-Oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification
2,4,6-Tris(dimethylaminomethyl)phenol			Data not available or insufficient for classification
Dimethyl siloxane, reaction product with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Imidazole			Data not available or insufficient for classification
Inorganic Salt			Data not available or insufficient for classification
Bis[(dimethylamino)methyl]phenol			Data not available or insufficient for classification
2-Piperazin-1-ylethylamine			Data not available or insufficient for classification
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Quartz	Inhalation	Human and animal	Carcinogenic.
Acrylonitrile	Not specified.		Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification			
Silica, vitreous	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated		Data not available or insufficient for classification			
3,3'-Oxybis(ethyleneoxy)bis(propylamine)		Data not available or insufficient for classification			
2,4,6-Tris(dimethylaminomethyl)phenol		Data not available or insufficient for classification			
Dimethyl siloxane, reaction product with silica	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Dimethyl siloxane, reaction product with silica	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Dimethyl siloxane, reaction product with	Ingestion	Not toxic to development	Rat	NOAEL 1,350	during organogenesis

silica				mg/kg/day	
Imidazole		Data not available or insufficient for classification			
Inorganic Salt		Data not available or insufficient for classification			
Bis[(dimethylamino) methyl]phenol		Data not available or insufficient for classification			
2-Piperazin-1-ylethylamine	Ingestion	Not toxic to female reproduction	Rat	NOAEL 598 mg/kg/day	premating & during gestation
2-Piperazin-1-ylethylamine	Ingestion	Not toxic to male reproduction	Rat	NOAEL 409 mg/kg/day	32 days
2-Piperazin-1-ylethylamine	Ingestion	Not toxic to development	Rat	NOAEL 899 mg/kg/day	premating & during gestation
Toluene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Quartz		Data not available or insufficient for classification			
Acrylonitrile	Ingestion	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOEL 10 mg/kg/day	
Acrylonitrile	Inhalation	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOEL 0.086 mg/l	

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification			
Silica,			Data not available			

vitreous			or insufficient for classification			
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated			Data not available or insufficient for classification			
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
2,4,6-Tris(dimethylaminomethyl)phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Dimethyl siloxane, reaction product with silica			Data not available or insufficient for classification			
Imidazole			Data not available or insufficient for classification			
Inorganic Salt			Data not available or insufficient for classification			
Bis[(dimethylamino)methyl]phenol			Data not available or insufficient for classification			
2-Piperazin-1-ylethylamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Quartz			Data not available or insufficient for classification			

Acrylonitrile	Dermal	nervous system	Causes damage to organs		NOAEL N/A	
Acrylonitrile	Inhalation	nervous system	Causes damage to organs		NOAEL N/A	
Acrylonitrile	Inhalation	liver	May cause damage to organs		NOAEL N/A	
Acrylonitrile	Inhalation	respiratory irritation	May cause respiratory irritation		Irritation Positive	
Acrylonitrile	Inhalation	heart | blood	Some positive data exist, but the data are not sufficient for classification		NOEL N/A	
Acrylonitrile	Ingestion	nervous system	Causes damage to organs		LOAEL 20 mg/kg	
Acrylonitrile	Ingestion	endocrine system	May cause damage to organs		NOAEL N/A	
Acrylonitrile	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification		NOEL N/A	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification			
Silica, vitreous	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated			Data not available or insufficient for classification			
3,3'-Oxybis(ethyleneoxy)bis(propylamine)			Data not available or insufficient for classification			
2,4,6-Tris(dimethylaminomethyl)phenol	Dermal	skin | liver | nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 125 mg/kg/day	28 days
2,4,6-Tris(dimethylaminomethyl)	Dermal	auditory system | hematopoietic system | eyes	All data are negative	Rat	NOAEL 125 mg/kg/day	28 days

phenol						
Dimethyl siloxane, reaction product with silica	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
Imidazole			Data not available or insufficient for classification			
Inorganic Salt			Data not available or insufficient for classification			
Bis[(dimethyl amino)methyl]phenol			Data not available or insufficient for classification			
2-Piperazin-1-ylethylamine	Ingestion	heart | endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	All data are negative	Rat	NOAEL 598 mg/kg/day	28 days
Toluene	Inhalation	auditory system | nervous system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart | liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system | vascular system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks

Toluene	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	4 weeks
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Acrylonitrile	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure		LOAEL 0.045 mg/l	
Acrylonitrile	Inhalation	respiratory system	May cause damage to organs though prolonged or repeated exposure		LOAEL 0.045 mg/l	
Acrylonitrile	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification		LOAEL 0.045 mg/l	
Acrylonitrile	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification		NOAEL N/A	
Acrylonitrile	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification		NOEL N/A	
Acrylonitrile	Inhalation	heart	Some positive data exist, but the data are not sufficient for classification		NOEL 0.045 mg/l	
Acrylonitrile	Inhalation	blood	Some positive data exist, but the data are not		LOEL 0.045 mg/l	

			sufficient for classification			
Acrylonitrile	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure		NOAEL 25 mg/kg/day	
Acrylonitrile	Ingestion	endocrine system	May cause damage to organs though prolonged or repeated exposure		NOAEL 14 mg/kg/day	
Acrylonitrile	Ingestion	heart | blood	Some positive data exist, but the data are not sufficient for classification		LOEL 14 mg/kg/day	
Acrylonitrile	Ingestion	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification		LOEL 10 mg/kg/day	
Acrylonitrile	Ingestion	respiratory system	All data are negative		NOAEL 25 mg/kg/day	

Aspiration Hazard

Name	Value
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	Not an aspiration hazard
Silica, vitreous	Not an aspiration hazard
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Not an aspiration hazard
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Not an aspiration hazard
2,4,6-Tris(dimethylaminomethyl)phenol	Not an aspiration hazard
Dimethyl siloxane, reaction product with silica	Not an aspiration hazard
Imidazole	Not an aspiration hazard
Inorganic Salt	Not an aspiration hazard
Bis[(dimethylamino)methyl]phenol	Not an aspiration hazard
2-Piperazin-1-ylethylamine	Not an aspiration hazard
Toluene	Aspiration hazard
Quartz	Not an aspiration hazard
Acrylonitrile	Not an aspiration hazard

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

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Imidazole	288-32-4	Water flea	Experimental	48 hours	EC50	341.5 mg/l
Imidazole	288-32-4	Green algae	Experimental	72 hours	EC50	133 mg/l
Acrylonitrile	107-13-1	Green algae	Experimental	72 hours	EC50	>7.1 mg/l
Acrylonitrile	107-13-1	Water flea	Experimental	48 hours	EC50	7.38 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Water flea	Laboratory	48 hours	EC50	220 mg/l
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Common Carp	Laboratory	96 hours	LC50	175 mg/l
2-Piperazin-1-ylethylamine	140-31-8	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
2-Piperazin-1-ylethylamine	140-31-8	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
2-Piperazin-1-ylethylamine	140-31-8	Water flea	Experimental	48 hours	EC50	32 mg/l
Imidazole	288-32-4	Green algae	Experimental	72 hours	NOEC	25 mg/l
Acrylonitrile	107-13-1	Water flea	Experimental	21 days	NOEC	0.5 mg/l
Acrylonitrile	107-13-1	Green algae	Experimental	72 hours	NOEC	0.8 mg/kg (Wet Weight)
2-Piperazin-1-ylethylamine	140-31-8	Green algae	Experimental	72 hours	NOEC	31 mg/l
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4		Data not available or insufficient for classification			
Bis[(dimethylamino)methyl]phenol	71074-89-0		Data not available or insufficient for classification			
Dimethyl siloxane, reaction product with silica	67762-90-7		Data not available or insufficient for classification			
Fatty acids, C18-unsaturated, dimers, polymers with	68911-25-1		Data not available or insufficient for classification			

3,3'-oxybis(ethyleneoxy)bis(propylamine)						
Quartz	14808-60-7		Data not available or insufficient for classification			
Toluene	108-88-3	Green algae	Laboratory	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Water flea	Laboratory	48 hours	LC50	3.78 mg/l
Toluene	108-88-3	Sheepshead Minnow	Laboratory	28 days	NOEC	3.2 mg/l
Imidazole	288-32-4	Golden Orfe	Experimental	48 hours	LC50	283.6 mg/l
Acrylonitrile	107-13-1	Grass Carp	Experimental	96 hours	LC50	4.96 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Algae	Experimental	72 hours	EC50	69 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	220 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Crustacea	Experimental	48 hours	EC50	220 mg/l
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Grass Shrimp	Laboratory	96 hours	LC50	718 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	LC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Sheepshead Minnow	Experimental	28 days	NOEC	3.2 mg/l

12.2. Persistence and degradability

Material	**CAS Nbr**	**Test type**	**Duration**	**Study Type**	**Test result**	**Protocol**
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propylamine)	68911-25-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

piperazinyl)ethyl]amino]butyl-terminated						
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Calculated Biodegradation	28 days	BOD	12.6 % weight	OECD 301C - MITI test (I)
Dimethyl siloxane, reaction product with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Bis[(dimethylamino)methyl]phenol	71074-89-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Piperazin-1-ylethylamine	140-31-8	Modeled Photolysis		Photolytic half-life (in air)	1.8 hours (t 1/2)	Other methods
2-Piperazin-1-ylethylamine	140-31-8	Experimental Biodegradation	28 days	BOD	0 % weight	OECD 301C - MITI test (I)
Imidazole	288-32-4	Modeled Photolysis		Photolytic half-life (in air)	10.7 hours (t 1/2)	Other methods
Imidazole	288-32-4	Experimental Biodegradation	18 days	Dissolv. Organic Carbon Deplet	98 % weight	OECD 301A - DOC Die Away Test
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Calculated Photolysis		Photolytic half-life (in air)	1.53 hours (t 1/2)	Other methods
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Laboratory Biodegradation	28 days	BOD	4 % weight	OECD 301D - Closed bottle test
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Toluene	108-88-3	Laboratory Biodegradation	14 days	BOD	100 % weight	OECD 301C - MITI test (I)
Acrylonitrile	107-13-1	Modeled Photolysis		Photolytic half-life (in air)	7.41 days (t 1/2)	Other methods
Acrylonitrile	107-13-1	Experimental Biodegradation	28 days	BOD	14.7 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Fatty acids, C18-unsaturated, dimers, polymers with 3,3'-oxybis(ethyleneoxy)bis(propy	68911-25-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

lamine)						
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Calculated Bioaccumulation		Log Kow	-1.46	Other methods
Dimethyl siloxane, reaction product with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Bis[(dimethylamino)methyl]phenol	71074-89-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Piperazin-1-ylethylamine	140-31-8	Experimental Bioconcentration		Log Kow	0.3	Other methods
Imidazole	288-32-4	Experimental Bioconcentration		Log Kow	-0.08	Other methods
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Laboratory Bioconcentration		Log Kow	-0.66	Other methods
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Toluene	108-88-3	Laboratory Bioaccumulation		Log Kow	2.73	Other methods
Acrylonitrile	107-13-1	Experimental BCF - Bluegill	28 days	Bioaccumulation factor	48	Other methods
Acrylonitrile	107-13-1	Experimental Bioaccumulation		Log Kow	0.25	Other methods

12.4. Mobility in soil
Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations

Dispose of completely cured (or polymerised) 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

ADR: UN3267; CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND POLYMERIC DIAMIDE); 8; II, C7
IMDG: UN3267; CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND POLYMERIC DIAMIDE); 8; II; EmS FA,SB.
IATA: UN3267; CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND POLYMERIC DIAMIDE); 8; II

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
Acrylonitrile	107-13-1	Carc. 1B	Regulation (EC) No. 1272/2008, Table 3.1
Acrylonitrile	107-13-1	Carc.Cat.2	Regulation (EC) No. 1272/2008, Table 3.2
Acrylonitrile	107-13-1	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Quartz	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Toluene	108-88-3	Gr. 3: Not classifiable	International Agency for Research on Cancer

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this

material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA.

15.2. Chemical Safety Assessment
Not applicable

SECTION 16: Other information

List of relevant H statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H360D	May damage the unborn child.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

List of relevant R-phrases

R11	Highly flammable.
R21	Harmful in contact with skin.
R22	Harmful if swallowed.
R23	Toxic by inhalation.
R24	Toxic in contact with skin.
R25	Toxic if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R37	Irritating to respiratory system.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R45	May cause cancer.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R51/53	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R61	May cause harm to the unborn child.
R63	Possible risk of harm to the unborn child.
R65	Harmful: May cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.

Revision information:
Revision Changes:
Section 1: Product name was modified.
Page Heading: Product name was modified.
Section 3: Composition/ Information of ingredients table was modified.
Section 12: Component ecotoxicity information was modified.
Section 12: Persistence and Degradability information was modified.
Section 12:Bioccumulative potential information was modified.
Section 14: Transportation classification was modified.
Section 16: Regulations - Inventories - EU ONLY was modified.
Copyright was modified.
Label: CLP Classification was modified.
Section 8: Occupational exposure limit table was modified.
Section 11: Acute Toxicity table was modified.
Carcinogenicity Table was modified.
Serious Eye Damage/Irritation Table was modified.
Germ Cell Mutagenicity Table was modified.
Skin Sensitisation Table was modified.
Respiratory Sensitisation Table was modified.
Reproductive Toxicity Table was modified.
Skin Corrosion/Irritation Table was modified.
Target Organs - Repeated Table was modified.
Target Organs - Single Table was modified.
Section 6: Accidental release clean-up information was modified.
Section 9: Odour Threshold was added.
Section 9: Solubility (non-water) was added.
Section 09: Decomposition Temperature was added.
Section 11: Single exposure may cause: heading was added.
Section 11: Single exposure may cause standard phrases was added.
Section 2: H phrase reference was added.
Section 11: Health Effects - Other 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.

3M United Kingdom MSDSs are available at www.3M.com/uk

Safety Data Sheet

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Transportation version number: 1.00 (20/04/2011)

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

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

1.1. Product identifier
3M Panel Bonding Adhesive - Base, P.N. 08115

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

Identified uses
Automotive.

1.3. Details of the supplier of the substance or mixture

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

E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

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

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
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.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive
Indication of danger
Irritant; Xi; R36/38
Sensitizing; R43
Dangerous for the environment; N; R51/53

For full text of R phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
WARNING!

Symbols:
GHS07 (Exclamation mark) |GHS09 (Environment) |

Pictograms

Ingredient	CAS Nbr	% by Wt
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	30 - 60
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	7 - 13

HAZARD STATEMENTS:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS
General:

P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.

Prevention:

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

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.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

SUPPLEMENTAL INFORMATION

Supplemental Hazard Statements:

EUH205	Contains epoxy constituents. May produce an allergic reaction.

Contains 1% of components with unknown hazards to the aquatic environment.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)


Irritant


Dangerous for the environment

Contains:
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane

Risk phrases

R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R51/53	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Safety phrases

S24	Avoid contact with skin.
S37	Wear suitable gloves.
S46	If swallowed, seek medical advice immediately and show this container or label.
S29	Do not empty into drains.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.
S2	Keep out of the reach of children.

Special provisions concerning the labelling of certain substances

Contains epoxy resins. See information supplied by manufacturer.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	NLP 500-033-5	30 - 60	Xi:R36-38; N:R51/53; R43 (EU) Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 2, H411 (CLP)
Glass, oxide, chemicals	65997-17-3	EINECS 266-046-0	10 - 30	
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	EINECS 238-098-4	7 - 13	R43; R52/53 (Self Classified) Skin Sens. 1, H317; Aquatic Chronic 3, H412 (Self Classified)
Silica, vitreous	60676-86-0	EINECS 262-373-8	7 - 13	
Methyl methacrylate - butadiene - styrene	25053-09-2		5 - 10	

polymer				
Silicon dioxide	7631-86-9	EINECS 231-545-4	1 - 5	
Dimethyl siloxane, reaction product with silica	67762-90-7		0.5 - 1.5	
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	EINECS 219-784-2	0.5 - 1.5	Xi:R41 (Self Classified) Eye Dam. 1, H318 (Self Classified)
Carbon black	1333-86-4	EINECS 215-609-9	<= 0.47	
2,6-Di-tert-butyl-p-cresol	128-37-0	EINECS 204-881-4	<= 0.1786	STOT RE 2, H373; Aquatic Chronic 2, H411 (Self Classified)
Allyl Glycidyl Ether	106-92-3	EINECS 203-442-4	<= 0.0149	Carc.Cat.3:R40; Muta.Cat.3:R68; Repr.Cat.3:R62; Xn:R20-22; Xi:R37-38-41; R43; R10; R52/53 (EU) Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1, H317; Muta. 2, H341; Carc. 2, H351; Repr. 2, H361f; STOT SE 3, H335; Aquatic Chronic 3, H412 (CLP) Aquatic Chronic 3, H412 (Self Classified)
Quartz	14808-60-7	EINECS 238-878-4	<= 0.01192	Xn:R48/20 (Vendor) STOT RE 1, H372 (Self Classified)

Please see section 16 for the full text of any R phrases and H statements referred to in this section
Please refer to section 15 for the any applicable Notas that have been applied to the above components

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1 Information on toxicological effects

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

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

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Advice for fire-fighters
No unusual fire or explosion hazards are anticipated.

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. Warning: A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. 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
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. 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
Do not use in a confined area or areas with little or no air movement. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. gloves, respirators…) as required.

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
2,6-Di-tert-butyl-p-cresol	128-37-0	Health and Safety Comm. (UK)	TWA:10 mg/m³	
Carbon black	1333-86-4	Health and Safety Comm. (UK)	TWA: 3.5 mg/m³; STEL: 7 mg/m³	
Silica, crystalline (airborne particles of respirable size)	14808-60-7	Health and Safety Comm. (UK)	TWA(respirable):0.1 mg/m3	
Silica, vitreous	60676-86-0	Health and Safety Comm. (UK)	TWA(as respirable dust):0.08 mg/m³	
Silica, amorphous	60676-86-0	Health and Safety Comm. (UK)	TWA(as inhalable dust):6 mg/m3	
Glass filaments	65997-17-3	Health and Safety Comm. (UK)	TWA(as fiber):5 mg/m3(1 fibers/ml)	
Glass, oxide, chemicals	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m3	
Silica, amorphous	67762-90-7	Health and Safety Comm. (UK)	TWA(as inhalable dust):6 mg/m3;TWA(as respirable dust):2.4 mg/m3	
Silica, amorphous	7631-86-9	Health and Safety Comm. (UK)	TWA(as inhalable dust):6 mg/m3;TWA(as respirable dust):2.4 mg/m3	

Health and Safety Comm. (UK) : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
ppm: parts per million
mg/m³: milligrams per cubic metre
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Wear eye/face protection.
The following eye protection(s) are recommended: Safety glasses with side shields.
Indirect vented goggles.

Skin/hand protection

Wear protective gloves.
Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment.
Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Neoprene.
Nitrile rubber.

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 particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Appearance/Odour	Black, viscous liquid.
Odour threshold	*No data available.*
pH	*Not applicable.*
Boiling point/boiling range	>=35 ºC
Melting point	*Not applicable.*
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	> 104 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	< 666.6 Pa [@ 20 ºC]
Relative density	± 1.2 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Evaporation rate	< 1 [*Ref Std:*BUOAC=1]
Vapour density	*No data available.*
Decomposition temperature	*No data available.*
Viscosity	> 200 mm²/sec
Density	1.2 g/ml

9.2. Other information

Hazardous air pollutants	0.000299 % weight [*Test Method:*Calculated]
Volatile organic compounds (VOC)	18 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Volatile organic compounds (VOC)	1.5 % weight [*Test Method:*calculated per CARB title 2]
Percent volatile	Negligible
VOC less H2O & exempt solvents	18 g/l [*Test Method:*calculated SCAQMD rule 443.1]

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
Sparks and/or flames.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

Substance	Condition
Aldehydes.	Not specified.
Carbon monoxide.	Not specified.
Carbon dioxide.	Not specified.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

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. Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, nose and throat pain.

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

Eye contact
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision. Dust created by cutting, grinding, sanding, or machining may cause 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.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Toxicological Data

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		Data not available or insufficient for classification; calculated ATE >5,000 mg/kg
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Rat	LD50 > 1,000 mg/kg
Glass, oxide, chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass, oxide, chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Dermal	Rabbit	LD50 2,500 mg/kg
Silica, vitreous	Dermal	Rabbit	LD50 > 5,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Rat	LD50 2,450 mg/kg
Silica, vitreous	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica, vitreous	Ingestion	Rat	LD50 > 5,110 mg/kg
Methyl methacrylate - butadiene - styrene polymer	Dermal	Rabbit	LD50 >= 5,000 mg/kg
Methyl methacrylate - butadiene - styrene polymer	Ingestion	Rat	LD50 >= 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
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Rabbit	LD50 4,000 mg/kg
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Rat	LD50 7,010 mg/kg
Dimethyl siloxane, reaction product with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dimethyl siloxane, reaction product with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Dimethyl siloxane, reaction product with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
2,6-Di-tert-butyl-p-cresol	Dermal	Rat	LD50 > 2,000 mg/kg
2,6-Di-tert-butyl-p-cresol	Ingestion	Rat	LD50 > 2,930 mg/kg
Allyl Glycidyl Ether			Data not available or insufficient for classification
Quartz	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane		Mild irritant

Glass, oxide, chemicals		Data not available or insufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane		Mild irritant
Silica, vitreous	Rabbit	No significant irritation
Methyl methacrylate - butadiene - styrene polymer		Minimal irritation
Silicon dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Mild irritant
Dimethyl siloxane, reaction product with silica	Rabbit	No significant irritation
Carbon black		No significant irritation
2,6-Di-tert-butyl-p-cresol		Minimal irritation
Allyl Glycidyl Ether		Data not available or insufficient for classification
Quartz		No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane		Moderate irritant
Glass, oxide, chemicals		Data not available or insufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane		Mild irritant
Silica, vitreous	Rabbit	No significant irritation
Methyl methacrylate - butadiene - styrene polymer		Mild irritant
Silicon dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Corrosive
Dimethyl siloxane, reaction product with silica	Rabbit	No significant irritation
Carbon black		Data not available or insufficient for classification
2,6-Di-tert-butyl-p-cresol		Moderate irritant
Allyl Glycidyl Ether		Data not available or insufficient for classification
Quartz		Data not available or insufficient for classification

Skin Sensitisation

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane		Sensitising
Glass, oxide, chemicals		Data not available or insufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	similar compounds	Sensitising
Silica, vitreous	Human and animal	Not sensitizing
Methyl methacrylate - butadiene - styrene polymer		Data not available or insufficient for classification
Silicon dioxide	Human and animal	Not sensitizing
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Guinea pig	Some positive data exist, but the data are not sufficient for classification
Dimethyl siloxane, reaction product with silica	Human and animal	Not sensitizing
Carbon black		Data not available or insufficient for classification
2,6-Di-tert-butyl-p-cresol		Some positive data exist, but the data are not sufficient for classification
Allyl Glycidyl Ether		Data not available or insufficient for classification
Quartz		Data not available or insufficient for classification

Respiratory Sensitisation

Name	Species	Value

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Human	Some positive data exist, but the data are not sufficient for classification
Glass, oxide, chemicals		Data not available or insufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane		Data not available or insufficient for classification
Silica, vitreous		Data not available or insufficient for classification
Methyl methacrylate - butadiene - styrene polymer		Data not available or insufficient for classification
Silicon dioxide		Data not available or insufficient for classification
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane		Data not available or insufficient for classification
Dimethyl siloxane, reaction product with silica		Data not available or insufficient for classification
Carbon black		Data not available or insufficient for classification
2,6-Di-tert-butyl-p-cresol		Data not available or insufficient for classification
Allyl Glycidyl Ether		Data not available or insufficient for classification
Quartz		Data not available or insufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Glass, oxide, chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane		Data not available or insufficient for classification
Silica, vitreous	In Vitro	Not mutagenic
Methyl methacrylate - butadiene - styrene polymer		Data not available or insufficient for classification
Silicon dioxide	In Vitro	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In vivo	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dimethyl siloxane, reaction product with silica	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
2,6-Di-tert-butyl-p-cresol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Allyl Glycidyl Ether		Data not available or insufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Glass, oxide, chemicals	Inhalation		Carcinogenic.
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane			Data not available or insufficient for classification

Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl methacrylate - butadiene - styrene polymer			Data not available or insufficient for classification
Silicon dioxide	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Mouse	Not carcinogenic
Dimethyl siloxane, reaction product with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal		Not carcinogenic
Carbon black	Ingestion		Not carcinogenic
Carbon black	Inhalation		Carcinogenic.
2,6-Di-tert-butyl-p-cresol	Dermal		Not carcinogenic
2,6-Di-tert-butyl-p-cresol	Ingestion		Some positive data exist, but the data are not sufficient for classification
Allyl Glycidyl Ether			Data not available or insufficient for classification
Quartz	Inhalation		Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation
Glass, oxide, chemicals		Data not available or insufficient for classification			
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane		Data not available or insufficient for classification			
Silica, vitreous	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

Methyl methacrylate - butadiene - styrene polymer		Data not available or insufficient for classification			
Silicon dioxide	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 3,000 mg/kg/day	during organogenesis
Dimethyl siloxane, reaction product with silica	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Dimethyl siloxane, reaction product with silica	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Dimethyl siloxane, reaction product with silica	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Carbon black		Data not available or insufficient for classification			
2,6-Di-tert-butyl-p-cresol	Ingestion	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOAEL 25 mg/kg/day	
Allyl Glycidyl Ether		Data not available or insufficient for classification			
Quartz		Data not available or insufficient for classification			

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Glass, oxide, chemicals	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		Irritation Positive	
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Silica, vitreous			Data not available or insufficient for classification			
Methyl methacrylate - butadiene - styrene polymer			Data not available or insufficient for classification			
Silicon dioxide			Data not available or insufficient for classification			
Dimethyl siloxane, reaction product with silica			Data not available or insufficient for classification			
Carbon black	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		Irritation Positive	
2,6-Di-tert-butyl-p-cresol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		Irritation Positive	
Allyl Glycidyl Ether			Data not available or insufficient for classification			
Quartz	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		Irritation Positive	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days

epoxypropane		and/or bladder				
Glass, oxide, chemicals	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification		NOEL N/A	
Silica, vitreous	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane			Data not available or insufficient for classification			
Methyl methacrylate - butadiene - styrene polymer			Data not available or insufficient for classification			
Silicon dioxide	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
Dimethyl siloxane, reaction product with silica	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
Carbon black	Inhalation	heart	Some positive data exist, but the data are not sufficient for classification		NOEL N/A	
Carbon black	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification		NOAEL N/A	
2,6-Di-tert-butyl-p-cresol	Dermal	respiratory system	Some positive data exist, but the data are not sufficient for classification		NOAEL N/A	
2,6-Di-tert-butyl-p-cresol	Ingestion	liver	May cause damage to organs though prolonged or repeated exposure		NOAEL 25 mg/kg/day	
2,6-Di-tert-butyl-p-cresol	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification		LOAEL 526 mg/kg/day	

2,6-Di-tert-butyl-p-cresol	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification		NOEL 3,480 mg/kg/day	
2,6-Di-tert-butyl-p-cresol	Ingestion	endocrine system | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification		NOAEL 25 mg/kg/day	
Allyl Glycidyl Ether			Data not available or insufficient for classification			
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure		NOAEL N/A	

Aspiration Hazard

Name	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Not an aspiration hazard
Glass, oxide, chemicals	Not an aspiration hazard
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Not an aspiration hazard
Silica, vitreous	Not an aspiration hazard
Methyl methacrylate - butadiene - styrene polymer	Not an aspiration hazard
Silicon dioxide	Not an aspiration hazard
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Not an aspiration hazard
Dimethyl siloxane, reaction product with silica	Not an aspiration hazard
Carbon black	Not an aspiration hazard
2,6-Di-tert-butyl-p-cresol	Not an aspiration hazard
Allyl Glycidyl Ether	Not an aspiration hazard
Quartz	Not an aspiration hazard

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

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life with long lasting effects.

Chronic aquatic hazard:
GHS Chronic 3: Harmful to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
4,4'-	25068-38-6	Ricefish	Laboratory	96 hours	LC50	1.41 mg/l

Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane						
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Water flea	Laboratory	21 days	NOEC	0.3 mg/l
Glass, oxide, chemicals	65997-17-3		Data not available or insufficient for classification			
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Ricefish	Analogous Compound	96 hours	LC50	13 mg/l
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Water flea	Analogous Compound	48 hours	EC50	22 mg/l
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Green algae	Analogous Compound	72 hours	EC50	>93 mg/l
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Green algae	Analogous Compound	72 hours	NOEC	29 mg/l
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Methyl methacrylate - butadiene - styrene polymer	25053-09-2		Data not available or insufficient for classification			
Silicon dioxide	7631-86-9		Data not available or insufficient for classification			
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	EC50	350 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l

[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Water flea	Experimental	48 hours	EC50	473 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	>=100 mg/l
Carbon black	1333-86-4		Data not available or insufficient for classification			
Allyl Glycidyl Ether	106-92-3	Goldfish	Laboratory	96 hours	LC50	=30 mg/l
Dimethyl siloxane, reaction product with silica	67762-90-7		Data not available or insufficient for classification			
Quartz	14808-60-7		Data not available or insufficient for classification			
2,6-Di-tert-butyl-p-cresol	128-37-0		Data not available or insufficient for classification			
Allyl Glycidyl Ether	106-92-3	Goldfish	Experimental	96 hours	LC50	=30 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Calculated Photolysis		Photolytic half-life (in air)	7 hours (t 1/2)	Other methods
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Modeled Photolysis		Photolytic half-life (in air)	1.2 days (t 1/2)	Other methods
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Calculated Hydrolysis		Hydrolytic half-life	7 days (t 1/2)	Other methods
[3-(2,3-Epoxypropoxy	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Other methods

)propyl] trimethoxysilane						
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Laboratory Hydrolysis		Hydrolytic half-life	<2 days (t 1/2)	Other methods
Methyl methacrylate - butadiene - styrene polymer	25053-09-2	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
Dimethyl siloxane, reaction product with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Laboratory Biodegradation	28 days	BOD	0 % weight	OECD 301C - MITI test (I)
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Calculated Biodegradation	28 days	BOD	4 % weight	OECD 301C - MITI test (I)
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Other methods
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Glass, oxide,	65997-17-3	Data not	N/A	N/A	N/A	N/A

chemicals		available or insufficient for classification				
Allyl Glycidyl Ether	106-92-3	Modeled Photolysis		Photolytic half-life (in air)	9.75 hours (t 1/2)	Other methods
2,6-Di-tert-butyl-p-cresol	128-37-0	Laboratory Biodegradation	28 days	BOD	4.5 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Dimethyl siloxane, reaction product with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	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
Glass, oxide, chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2,6-Di-tert-butyl-p-cresol	128-37-0	Laboratory BCF - Other	56 days	Bioaccumulation factor	1276	OECD 305E - Bioaccumulation flow-through fish test
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Calculated BCF - Other		Bioaccumulation factor	3	Estimated: Bioconcentration factor
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Laboratory BCF - Other	28 days	Bioaccumulation factor	<42	Other methods
Methyl methacrylate - butadiene -	25053-09-2	Data not available or insufficient for	N/A	N/A	N/A	N/A

styrene polymer		classification				
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Allyl Glycidyl Ether	106-92-3	Modeled BCF - Other		Bioaccumulation factor	2.9	Estimated: Bioconcentration factor
Allyl Glycidyl Ether	106-92-3	Experimental Bioconcentration		Log Kow	0.34	Other methods

12.4. Mobility in soil
Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations

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. As a disposal alternative, utilize an acceptable permitted waste disposal facility. 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

ADR: UN3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID, N.O.S (Epoxy Resin).; 9; III, M6.
IMDG: UN3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID, N.O.S (Epoxy Resin).; 9; III; EmS FA,SF.
IATA: UN3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE,LIQUID, N.O.S (Epoxy Resin).; 9; III.

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
Allyl Glycidyl Ether	106-92-3	Carc. 2	Regulation (EC) No. 1272/2008, Table 3.1
Allyl Glycidyl Ether	106-92-3	Carc.Cat.3	Regulation (EC) No. 1272/2008, Table 3.2
2,6-Di-tert-butyl-p-cresol	128-37-0	Gr. 3: Not classifiable	International Agency for Research on Cancer
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Quartz	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Silicon dioxide	7631-86-9	Gr. 3: Not classifiable	International Agency for Research on Cancer

Global inventory status

Contact 3M for more information. The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA.

15.2. Chemical Safety Assessment

Not applicable

SECTION 16: Other information

List of relevant H statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

List of relevant R-phrases

R10	Flammable.
R20	Harmful by inhalation.
R22	Harmful if swallowed.

R36	Irritating to eyes.
R36/38	Irritating to eyes and skin.
R37	Irritating to respiratory system.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R51/53	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.
R68	Possible risks of irreversible effects.

Revision information:
Revision Changes:
Section 1: Product name was modified.
Page Heading: Product name was modified.
Section 16: List of relevant R phrase information was modified.
Section 3: Composition/ Information of ingredients table was modified.
Section 9: Flammability (solid, gas) information was modified.
Section 16: Regulations - Inventories - EU ONLY was modified.
Copyright was modified.
Section 8: Occupational exposure limit table was modified.
Section 11: Acute Toxicity table was modified.
Carcinogenicity Table was modified.
Serious Eye Damage/Irritation Table was modified.
Germ Cell Mutagenicity Table was modified.
Skin Sensitisation Table was modified.
Respiratory Sensitisation Table was modified.
Reproductive Toxicity Table was modified.
Skin Corrosion/Irritation Table was modified.
Target Organs - Repeated Table was modified.
Target Organs - Single Table was modified.
Section 11: Health Effects - Eye information was modified.
Section 11: Health Effects - Inhalation information was modified.
Section 5: Fire - Extinguishing media information was modified.
Section 6: Accidental release clean-up information was modified.
Section 10: Hazardous decomposition or by-products table was modified.
Section 13: Standard Phrase Category Waste GHS was modified.
Section 8: Skin protection - protective clothing text was added.
Section 12: Component ecotoxicity information was added.
Section 12: Persistence and Degradability information was added.
Section 12:Bioccumulative potential information was added.
Section 12: Component Ecotoxicity table Material column header was added.
Section 12: Component Ecotoxicity table CAS No column header was added.
Section 12: Component Ecotoxicity table Organism column header was added.
Section 12: Component Ecotoxicity table Type column header was added.
Section 12: Component Ecotoxicity table Exposure column header was added.
Section 12: Component Ecotoxicity table End point column header was added.
Section 12: Component Ecotoxicity table Result column header was added.
Section 12: Persistence and degradability table Material column header was added.
Section 12: Persistence and degradability table CAS No column header was added.
Section 12: Persistence and degradability table Test Type column header was added.
Section 12: Persistence and degradability table Duration column header was added.
Section 12: Persistence and degradability table Test Result column header was added.
Section 12: Persistence and degradability table Protocol column header was added.

Section 12:Bioccumulative potential table Material column header was added.
Section 12:Bioccumulative potential table CAS No column header was added.
Section 12:Bioccumulative potential table CAS No column header was added.
Section 12:Bioccumulative potential table Test Result column header was added.
Section 12:Bioccumulative potential table Protocol column header was added.
Section 12:Bioccumulative potential table Test Type column header was added.
Label: Signal Word - Header was added.
Label: Signal Word was added.
Label: CLP Classification - Header was added.
Label: CLP Classification was added.
Label: CLP Classification was added.
Label: CLP Classification - Header was added.
Label: CLP Percent Unknown was added.
Label: CLP Environmental Hazard Statements was added.
Label: Graphic was added.
Label: Graphic was added.
Label: Symbol was added.
Label: Symbol was added.
Label: CLP Precautionary - Disposal was added.
Label: CLP Precautionary - Disposal - Header was added.
Label: CLP Precautionary - General was added.
Label: CLP Precautionary - General - Header was added.
Label: CLP Precautionary - Prevention was added.
Label: CLP Precautionary - Prevention - Header was added.
Label: CLP Precautionary - Response was added.
Label: CLP Precautionary - Response - Header was added.
Label: Precautionary Statement - Header was added.
CLP: Ingredient table was added.
Label: CLP Supplemental Hazard Statements was added.
Label: CLP Supplemental Hazard Statements - Header was added.
Label: CLP Supplemental Information - Header was added.
Section 2: 2.2 & 2.3. CLP REGULATION heading was added.
Label: CLP Ingredients table Ingredient heading was added.
Label: CLP Ingredients table CAS No heading was added.
Label: CLP Ingredients table Percent by Wt heading was added.
Section 12: Persistence and degradability table Study Type column header was added.
Section 12:Bioccumulative potential table Test Type column header was added.
Label: Graphic Text was added.
Section 9: Odour Threshold was added.
Section 9: Solubility (non-water) was added.
Section 09: Decomposition Temperature was added.
Section 2: H phrase reference was added.
Label: Graphic was added.
Label: Graphic was added.
Label: Graphic Text was added.
Section 9: Flammability (solid, gas) information was added.
Section 2: Symbol was deleted.
Section 2: Symbols heading was deleted.
Prints No Data if Component ecotoxicity information is not present was deleted.
Prints No Data if Persistence and Degradability information is not present was deleted.
Prints No Data if Bioccumulative potential information is not present was deleted.
Section 8: 8.1. Derived no effect level (DNEL) table heading was deleted.
Section 8: 8.1. Predicted no effect concentrations (PNEC) table heading was deleted.
Section 8: 8.1. Derived no effect level (DNEL) table ingredient column heading was deleted.
Section 8: 8.1. Derived no effect level (DNEL) table population column heading was deleted.
Section 8: 8.1. Derived no effect level (DNEL) table human exposure pattern column heading was deleted.

Section 8: 8.1. Derived no effect level (DNEL) table DNEL column heading was deleted.
Section 8: DNEL table row was deleted.
Section 8: 8.1. Predicted no effect concentrations (PNEC) table ingredient column heading was deleted.
Section 8: 8.1. Predicted no effect concentrations (PNEC) table compartment column heading was deleted.
Section 8: 8.1. Predicted no effect concentrations (PNEC) table PNEC column heading was deleted.
Section 8: PNEC table row was deleted.
Section 8: Personal Protection - Respiratory Information was deleted.
Section 8: 8.1. Derived no effect level (DNEL) table Degradation Product column heading was deleted.
Section 8: 8.1. Predicted no effect concentrations (PNEC) table Degradation Product column heading was deleted.

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