Safety Data Sheet

Document group:	28-2535-4	**Version number:**	9.00
Revision date:	19/07/2023	**Supersedes date:**	03/02/2022
Transportation version number:			

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

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

1.1. Product identifier
3M™ Scotch-Weld™ Structural Plastic Adhesive DP8005, Black

Product Identification Numbers
62-2779-1445-3 62-2779-3630-8

7100089476 7100089475

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

Identified uses
Adhesive

1.3. Details of the supplier of the safety data sheet

Address: 3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone: +353 1 280 3555
E Mail: tox.uk@mmm.com

Website: www.3M.com

1.4. Emergency telephone number
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

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:

18-8243-0, 28-2531-3

TRANSPORTATION INFORMATION

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

KIT LABEL

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

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Respiratory Sensitization, Category 1 - Resp. Sens. 1; H334
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
Reproductive Toxicity, Category 1B - Repr. 1B; H360D
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

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

Pictograms

Contains:
Tetrahydrofurfuryl methacrylate.; succinic anhydride; methyl methacrylate; maleic anhydride; [2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate; Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-; 2-hydroxyethyl methacrylate; 2-Ethylhexyl methacrylate; 2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)

HAZARD STATEMENTS:

H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H360D	May damage the unborn child.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P261A	Avoid breathing vapours.
P280B	Wear protective gloves and eye/face protection.

Response:

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

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

<=125 ml Hazard statements

H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H360D	May damage the unborn child.

<=125 ml Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P261A	Avoid breathing vapours.
P280B	Wear protective gloves and eye/face protection.

Response:

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

SUPPLEMENTAL INFORMATION:

Supplemental Precautionary Statements:
Restricted to professional users.

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

Revision information:
Label: CLP Ingredients - kit components information was modified.
Section 2: <125ml Hazard - Environmental information was deleted.
Section 2: <125ml Precautionary - Prevention information was modified.
Label: CLP Classification information was modified.
Label: CLP Environmental Hazard Statements information was modified.
Label: CLP Precautionary - Prevention information was modified.
Label: Graphic information was modified.

Safety Data Sheet

Document group:	28-2531-3	**Version number:**	14.00
Revision date:	07/06/2023	**Supersedes date:**	07/02/2023

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

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

1.1. Product identifier
3M Scotch-Weld™ Structural Plastic Adhesive DP8005 Black, Part B

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

Identified uses
Adhesive

Only for industrial use.

1.3. Details of the supplier of the safety data sheet

Address:	3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone:	+353 1 280 3555
E Mail:	tox.uk@mmm.com
Website:	www.3M.com

1.4. Emergency telephone number
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

SECTION 2: Hazard identification

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

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

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Reproductive Toxicity, Category 1B - Repr. 1B; H360D
Hazardous to the Aquatic Environment (Chronic), Category 3 - Aquatic Chronic 3; H412

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

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

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
Tetrahydrofurfuryl methacrylate	2455-24-5	219-529-5	30 - 70
2-Ethylhexyl methacrylate	688-84-6	211-708-6	10 - 24
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	244-096-4	1 - 9
succinic anhydride	108-30-5	203-570-0	< 0.7
2-hydroxyethyl methacrylate	868-77-9	212-782-2	< 0.3
methyl methacrylate	80-62-6	201-297-1	< 0.3
maleic anhydride	108-31-6	203-571-6	< 0.002

HAZARD STATEMENTS:

H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H360D	May damage the unborn child.
H412	Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P280I	Wear protective gloves, eye/face protection, and respiratory protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

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

<=125 ml Hazard statements

H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H360D	May damage the unborn child.

H412	Harmful to aquatic life with long lasting effects.

<=125 ml Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P280I	Wear protective gloves, eye/face protection, and respiratory protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

SUPPLEMENTAL INFORMATION:

Supplemental Precautionary Statements:
Restricted to professional users.

2% of the mixture consists of components of unknown acute oral toxicity.

Contains 2% of components with unknown hazards to the aquatic environment.

2.3. Other hazards

None known.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tetrahydrofurfuryl methacrylate	(CAS-No.) 2455-24-5 (EC-No.) 219-529-5 (REACH-No.) 01-2120748481-53	30 - 70	Skin Sens. 1, H317 Repr. 1B, H360D Aquatic Chronic 3, H412
Acrylate Polymer	Trade Secret	10 - 30	Substance not classified as hazardous
2-Ethylhexyl methacrylate	(CAS-No.) 688-84-6 (EC-No.) 211-708-6	10 - 24	Skin Sens. 1B, H317 Aquatic Chronic 3, H412
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	(CAS-No.) 21282-97-3 (EC-No.) 244-311-1	1 - 15	Substance not classified as hazardous
Glass Spheres	Trade Secret	1 - 10	Substance not classified as hazardous
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	(CAS-No.) 20882-04-6 (EC-No.) 244-096-4	1 - 9	Eye Dam. 1, H318 Skin Sens. 1, H317
succinic anhydride	(CAS-No.) 108-30-5 (EC-No.) 203-570-0	< 0.7	EUH071 Acute Tox. 4, H302

			Skin Corr. 1, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317
tetrahydro-2-furyl-methanol	(CAS-No.) 97-99-4 (EC-No.) 202-625-6	< 0.3	Eye Irrit. 2, H319 Repr. 1B, H360Df
Carbon black	(CAS-No.) 1333-86-4 (EC-No.) 215-609-9 (REACH-No.) 01-2119384822-32	<= 0.3	Substance with a national occupational exposure limit
methyl methacrylate	(CAS-No.) 80-62-6 (EC-No.) 201-297-1 (REACH-No.) 01-2119452498-28	< 0.3	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335 Nota D
2-hydroxyethyl methacrylate	(CAS-No.) 868-77-9 (EC-No.) 212-782-2 (REACH-No.) 01-2119490169-29	< 0.3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Nota D
styrene	(CAS-No.) 100-42-5 (EC-No.) 202-851-5	< 0.2	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT RE 1, H372 Nota D Aquatic Chronic 3, H412 Asp. Tox. 1, H304 STOT SE 3, H335
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	< 0.002	EUH071 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372

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

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	(C >= 0.001%) Skin Sens. 1A, H317

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the CLP classification include:
Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

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

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen cyanide.	During combustion.
Irritant vapours or gases.	During combustion.
Oxides of nitrogen.	During combustion.

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

SECTION 6: Accidental release measures

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

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

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 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
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
styrene	100-42-5	Ireland OELs	TWA(8 hours):85 mg/m3(20 ppm);STEL(15 minutes):170 mg/m3(40 ppm)	
maleic anhydride	108-31-6	Ireland OELs	TWA(inhalable fraction and vapour)(8 hours):0.01 ppm	
Carbon black	1333-86-4	Ireland OELs	TWA(inhalable fraction)(8 hours):3 mg/m3	
methyl methacrylate	80-62-6	Ireland OELs	TWA(8 hours):50 ppm;TWA(8 hours):50 ppm;STEL(15 minutes):100 ppm;STEL(15 minutes):100 ppm	Respiratory/Dermal Sensitizer

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

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

Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL

2-hydroxyethyl methacrylate		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	1.3 mg/kg bw/d
2-hydroxyethyl methacrylate		Worker	Inhalation, Long-term exposure (8 hours), Systemic effects	4.9 mg/m³

Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
2-hydroxyethyl methacrylate		Agricultural soil	0.476 mg/kg d.w.
2-hydroxyethyl methacrylate		Freshwater	0.482 mg/l
2-hydroxyethyl methacrylate		Freshwater sediments	3.79 mg/kg d.w.
2-hydroxyethyl methacrylate		Intermittent releases to water	1 mg/l
2-hydroxyethyl methacrylate		Marine water	0.482 mg/l
2-hydroxyethyl methacrylate		Marine water sediments	3.79 mg/kg d.w.
2-hydroxyethyl methacrylate		Sewage Treatment Plant	10 mg/l

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from Indust. Inspect./Ministry (IE)

8.2. Exposure controls

In addition, refer to the annex for more information.

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

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

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

Applicable Norms/Standards
Use gloves tested to EN 374

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

Respiratory protection

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

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

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter types A & P

8.2.3. Environmental exposure controls
Refer to Annex

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Colour	Black
Odor	Mild Acrylic
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	>=82.2 ºC
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	103.3 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	25,407 mm²/sec
Water solubility	Slight (less than 10%)
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	<=13.3 Pa [@ 20 ºC]
Density	0.984 g/ml
Relative density	0.984 [*Ref Std:*WATER=1]
Relative Vapour Density	*No data available.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*
Molecular weight	*No data available.*

SECTION 10: Stability and reactivity

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

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat.

10.5 Incompatible materials
Strong acids.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

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

Signs and Symptoms of Exposure

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

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

Skin contact
Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

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

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

Additional Health Effects:

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

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

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Tetrahydrofurfuryl methacrylate	Ingestion	Rat	LD50 4,000 mg/kg
Tetrahydrofurfuryl methacrylate	Dermal	similar health hazards	LD50 estimated to be 2,000 - 5,000 mg/kg
2-Ethylhexyl methacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
2-Ethylhexyl methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	Ingestion	Rat	LD50 > 2,000 mg/kg
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Dermal	Rat	LD50 > 2,000 mg/kg
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Rat	LD50 > 5,000 mg/kg
succinic anhydride	Dermal	Rat	LD50 > 2,000 mg/kg
succinic anhydride	Ingestion	Rat	LD50 1,510 mg/kg
tetrahydro-2-furyl-methanol	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
tetrahydro-2-furyl-methanol	Inhalation-Vapour (4 hours)	Rat	LC50 > 3.1 mg/l
tetrahydro-2-furyl-methanol	Ingestion	Rat	LD50 > 2,000 mg/kg
2-hydroxyethyl methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-hydroxyethyl methacrylate	Ingestion	Rat	LD50 5,564 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
methyl methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
methyl methacrylate	Inhalation-Vapour (4 hours)	Rat	LC50 29 mg/l
methyl methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
styrene	Dermal	Rat	LD50 > 2,000 mg/kg
styrene	Inhalation-Vapour (4 hours)	Rat	LC50 11.8 mg/l
styrene	Ingestion	Rat	LD50 5,000 mg/kg
maleic anhydride	Dermal	Rabbit	LD50 2,620 mg/kg

maleic anhydride	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Tetrahydrofurfuryl methacrylate	Rabbit	No significant irritation
2-Ethylhexyl methacrylate	Rabbit	Minimal irritation
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	Professional judgement	Mild irritant
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Rabbit	No significant irritation
succinic anhydride	In vitro data	Corrosive
tetrahydro-2-furyl-methanol	Rabbit	No significant irritation
2-hydroxyethyl methacrylate	Rabbit	Minimal irritation
Carbon black	Rabbit	No significant irritation
methyl methacrylate	Human and animal	Mild irritant
styrene	Professional judgement	Mild irritant
maleic anhydride	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Tetrahydrofurfuryl methacrylate	Rabbit	No significant irritation
2-Ethylhexyl methacrylate	Rabbit	No significant irritation
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	In vitro data	Corrosive
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Rabbit	No significant irritation
succinic anhydride	similar health hazards	Corrosive
tetrahydro-2-furyl-methanol	Rabbit	Severe irritant
2-hydroxyethyl methacrylate	Rabbit	Moderate irritant
Carbon black	Rabbit	No significant irritation
methyl methacrylate	Rabbit	Moderate irritant
styrene	Professional judgement	Moderate irritant
maleic anhydride	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
Tetrahydrofurfuryl methacrylate	In vitro data	Sensitising
2-Ethylhexyl methacrylate	Guinea pig	Sensitising
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	Professional judgement	Sensitising
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Mouse	Not classified
succinic anhydride	Mouse	Sensitising
tetrahydro-2-furyl-methanol	Mouse	Not classified

2-hydroxyethyl methacrylate	Human and animal	Sensitising
methyl methacrylate	Human and animal	Sensitising
styrene	Guinea pig	Not classified
maleic anhydride	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
succinic anhydride	similar compounds	Sensitising
methyl methacrylate	Human	Not classified
maleic anhydride	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Tetrahydrofurfuryl methacrylate	In Vitro	Not mutagenic
2-Ethylhexyl methacrylate	In Vitro	Not mutagenic
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	In Vitro	Not mutagenic
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	In vivo	Not mutagenic
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	In Vitro	Some positive data exist, but the data are not sufficient for classification
succinic anhydride	In Vitro	Not mutagenic
tetrahydro-2-furyl-methanol	In Vitro	Not mutagenic
2-hydroxyethyl methacrylate	In vivo	Not mutagenic
2-hydroxyethyl methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
methyl methacrylate	In vivo	Not mutagenic
methyl methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
styrene	In Vitro	Some positive data exist, but the data are not sufficient for classification
styrene	In vivo	Some positive data exist, but the data are not sufficient for classification
maleic anhydride	In vivo	Not mutagenic
maleic anhydride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
succinic anhydride	Ingestion	Multiple animal species	Not carcinogenic
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.
methyl methacrylate	Ingestion	Rat	Not carcinogenic
methyl methacrylate	Inhalation	Human and animal	Not carcinogenic
styrene	Ingestion	Mouse	Carcinogenic.
styrene	Inhalation	Human and	Carcinogenic.

		animal	

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Tetrahydrofurfuryl methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl methacrylate	Ingestion	Toxic to female reproduction	Rat	NOAEL 120 mg/kg/day	premating into lactation
Tetrahydrofurfuryl methacrylate	Ingestion	Toxic to development	Rat	NOAEL 120 mg/kg/day	premating into lactation
2-Ethylhexyl methacrylate	Ingestion	Not classified for male reproduction		NOAEL 1,000 mg/kg/day	49 days
2-Ethylhexyl methacrylate	Ingestion	Not classified for female reproduction		NOAEL 300 mg/kg/day	premating into lactation
2-Ethylhexyl methacrylate	Ingestion	Not classified for development		NOAEL 300 mg/kg/day	during gestation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for female reproduction	Rat	NOAEL 500 mg/kg/day	premating into lactation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	56 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
tetrahydro-2-furyl-methanol	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
tetrahydro-2-furyl-methanol	Dermal	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	13 weeks
tetrahydro-2-furyl-methanol	Ingestion	Toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	47 days
tetrahydro-2-furyl-methanol	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.6 mg/l	90 days
tetrahydro-2-furyl-methanol	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
2-hydroxyethyl methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-hydroxyethyl methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-hydroxyethyl methacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
methyl methacrylate	Inhalation	Not classified for male reproduction	Mouse	NOAEL 36.9 mg/l	
methyl methacrylate	Inhalation	Not classified for development	Rat	NOAEL 8.3 mg/l	during organogenesis
styrene	Ingestion	Not classified for female reproduction	Rat	NOAEL 21 mg/kg/day	3 generation
styrene	Inhalation	Not classified for female reproduction	Rat	NOAEL 2.1 mg/l	2 generation
styrene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.1 mg/l	2 generation
styrene	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	60 days
styrene	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during gestation
styrene	Inhalation	Not classified for development	Multiple animal species	NOAEL 2.1 mg/l	during gestation
maleic anhydride	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
maleic anhydride	Ingestion	Not classified for male reproduction	Rat	NOAEL 55	2 generation

				mg/kg/day	
maleic anhydride	Ingestion	Not classified for development	Rat	NOAEL 140 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
succinic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	NOAEL Not available	
tetrahydro-2-furyl-methanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
methyl methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
styrene	Inhalation	auditory system	Causes damage to organs	Multiple animal species	LOAEL 4.3 mg/l	not available
styrene	Inhalation	liver	Causes damage to organs	Mouse	LOAEL 2.1 mg/l	not available
styrene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	occupational exposure
styrene	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
styrene	Inhalation	endocrine system	Not classified	Rat	NOAEL Not available	not available
styrene	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2.1 mg/l	not available
maleic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Tetrahydrofurfuryl methacrylate	Ingestion	hematopoietic system | nervous system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
2-Ethylhexyl methacrylate	Ingestion	heart | endocrine system | hematopoietic system | liver | immune system | nervous system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	hematopoietic system | nervous system | eyes	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
succinic anhydride	Ingestion	heart | skin | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks

tetrahydro-2-furyl-methanol	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.2 mg/l	90 days
tetrahydro-2-furyl-methanol	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.6 mg/l	90 days
tetrahydro-2-furyl-methanol	Inhalation	eyes	Not classified	Rat	NOAEL 2.1 mg/l	90 days
tetrahydro-2-furyl-methanol	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 69 mg/kg/day	91 days
tetrahydro-2-furyl-methanol	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	28 days
tetrahydro-2-furyl-methanol	Ingestion	endocrine system | kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
tetrahydro-2-furyl-methanol	Ingestion	liver | eyes	Not classified	Rat	NOAEL 781 mg/kg/day	91 days
tetrahydro-2-furyl-methanol	Ingestion	heart | nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
methyl methacrylate	Dermal	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
methyl methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
methyl methacrylate	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	14 weeks
methyl methacrylate	Inhalation	liver	Not classified	Mouse	NOAEL 12.3 mg/l	14 weeks
methyl methacrylate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
styrene	Inhalation	auditory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL not available	occupational exposure
styrene	Inhalation	eyes	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
styrene	Inhalation	liver	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 0.85 mg/l	13 weeks
styrene	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	LOAEL 1.1 mg/l	not available
styrene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.85 mg/l	7 days
styrene	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.6 mg/l	10 days
styrene	Inhalation	respiratory system	Not classified	Multiple animal species	LOAEL 0.09 mg/l	not available
styrene	Inhalation	heart | gastrointestinal tract | bone, teeth, nails, and/or hair | muscles | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
styrene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 500 mg/kg/day	8 weeks
styrene	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	not available
styrene	Ingestion	liver | kidney and/or bladder	Not classified	Rat	NOAEL 677 mg/kg/day	6 months
styrene	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 600 mg/kg/day	470 days
styrene	Ingestion	heart | respiratory system	Not classified	Rat	NOAEL 35 mg/kg/day	105 weeks

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

Aspiration Hazard

Name	Value
styrene	Aspiration hazard

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

11.2. Information on other hazards

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

SECTION 12: Ecological information

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

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
Tetrahydrofurfuryl methacrylate	2455-24-5	Fathead minnow	Experimental	96 hours	LC50	34.7 mg/l
Tetrahydrofurfuryl methacrylate	2455-24-5	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Tetrahydrofurfuryl methacrylate	2455-24-5	Green algae	Experimental	72 hours	ErC10	100 mg/l
Tetrahydrofurfuryl methacrylate	2455-24-5	Water flea	Experimental	21 days	NOEC	37.2 mg/l
Acrylate Polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2-Ethylhexyl methacrylate	688-84-6	Green algae	Experimental	72 hours	ErC50	5.3 mg/l

2-Ethylhexyl methacrylate	688-84-6	Medaka	Experimental	96 hours	LC50	2.8 mg/l
2-Ethylhexyl methacrylate	688-84-6	Water flea	Experimental	48 hours	EC50	4.6 mg/l
2-Ethylhexyl methacrylate	688-84-6	Green algae	Experimental	72 hours	NOEC	0.81 mg/l
2-Ethylhexyl methacrylate	688-84-6	Water flea	Experimental	21 days	NOEC	0.105 mg/l
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Activated sludge	Experimental	3 hours	NOEC	320 mg/l
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Water flea	Experimental	48 hours	EL50	>100 mg/l
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Green algae	Experimental	72 hours	NOEC	11.1 mg/l
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Green algae	Experimental	72 hours	ErC50	>312 mg/l
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Water flea	Experimental	48 hours	EC50	>515.4 mg/l
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Green algae	Experimental	72 hours	ErC10	>=161 mg/l
succinic anhydride	108-30-5	Green algae	Analogous Compound	72 hours	ErC50	>100 mg/l
succinic anhydride	108-30-5	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
succinic anhydride	108-30-5	Zebra Fish	Analogous Compound	96 hours	LC50	>100 mg/l
succinic anhydride	108-30-5	Green algae	Analogous Compound	72 hours	NOEC	100 mg/l
2-hydroxyethyl methacrylate	868-77-9	Turbot	Analogous Compound	96 hours	LC50	833 mg/l
2-hydroxyethyl methacrylate	868-77-9	Fathead minnow	Experimental	96 hours	LC50	227 mg/l
2-hydroxyethyl methacrylate	868-77-9	Green algae	Experimental	72 hours	EC50	710 mg/l
2-hydroxyethyl methacrylate	868-77-9	Water flea	Experimental	48 hours	EC50	380 mg/l
2-hydroxyethyl methacrylate	868-77-9	Green algae	Experimental	72 hours	NOEC	160 mg/l
2-hydroxyethyl methacrylate	868-77-9	Water flea	Experimental	21 days	NOEC	24.1 mg/l
2-hydroxyethyl methacrylate	868-77-9	N/A	Experimental	16 hours	EC0	>3,000 mg/l
2-hydroxyethyl methacrylate	868-77-9	N/A	Experimental	18 hours	LD50	<98 mg per kg of bodyweight
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon black	1333-86-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
methyl methacrylate	80-62-6	Green algae	Experimental	72 hours	EC50	>110 mg/l

methyl methacrylate	80-62-6	Rainbow trout	Experimental	96 hours	LC50	>79 mg/l
methyl methacrylate	80-62-6	Water flea	Experimental	48 hours	EC50	69 mg/l
methyl methacrylate	80-62-6	Green algae	Experimental	72 hours	NOEC	110 mg/l
methyl methacrylate	80-62-6	Water flea	Experimental	21 days	NOEC	37 mg/l
methyl methacrylate	80-62-6	Activated sludge	Experimental	30 minutes	EC20	150 mg/l
methyl methacrylate	80-62-6	Soil microbes	Experimental	28 days	NOEC	>1,000 mg/kg (Dry Weight)
tetrahydro-2-furyl-methanol	97-99-4	Green algae	Experimental	72 hours	EC50	>100 mg/l
tetrahydro-2-furyl-methanol	97-99-4	Medaka	Experimental	96 hours	LC50	>100 mg/l
tetrahydro-2-furyl-methanol	97-99-4	Water flea	Experimental	48 hours	EC50	>100 mg/l
tetrahydro-2-furyl-methanol	97-99-4	Green algae	Experimental	72 hours	NOEC	>100 mg/l
tetrahydro-2-furyl-methanol	97-99-4	Water flea	Experimental	21 days	NOEC	>100 mg/l
maleic anhydride	108-31-6	Bacteria	Experimental	18 hours	EC10	44.6 mg/l
maleic anhydride	108-31-6	Rainbow trout	Experimental	96 hours	LC50	75 mg/l
maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC50	74.4 mg/l
maleic anhydride	108-31-6	Water flea	Hydrolysis Product	48 hours	EC50	93.8 mg/l
maleic anhydride	108-31-6	Water flea	Experimental	21 days	NOEC	10 mg/l
maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC10	11.8 mg/l
styrene	100-42-5	Activated sludge	Experimental	30 minutes	EC50	500 mg/l
styrene	100-42-5	Fathead minnow	Experimental	96 hours	LC50	4.02 mg/l
styrene	100-42-5	Green algae	Experimental	72 hours	EC50	4.9 mg/l
styrene	100-42-5	Water flea	Experimental	48 hours	EC50	4.7 mg/l
styrene	100-42-5	Green algae	Experimental	96 hours	EC10	0.28 mg/l
styrene	100-42-5	Water flea	Experimental	21 days	NOEC	1.01 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Tetrahydrofurfuryl methacrylate	2455-24-5	Experimental Biodegradation	28 days	BOD	75 %BOD/ThOD (< 10 day window)	OECD 301F - Manometric respirometry
Acrylate Polymer	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
2-Ethylhexyl methacrylate	688-84-6	Experimental Biodegradation	28 days	BOD	88 %BOD/ThOD	OECD 301C - MITI test (I)
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Experimental Biodegradation	28 days	BOD	64 %BOD/ThOD	OECD 301C - MITI test (I)
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	6.5 days (t 1/2)	OECD 111 Hydrolysis func of pH
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Experimental Biodegradation	28 days	BOD	≥80 %BOD/ThOD (< 10 day window)	OECD 301F - Manometric respirometry

[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
succinic anhydride	108-30-5	Hydrolysis product Biodegradation	28 days	Dissolv. Organic Carbon Deplet	96.55 %removal of DOC	OECD 301E - Modif. OECD Screen
succinic anhydride	108-30-5	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	4.3 minutes (t 1/2)	
2-hydroxyethyl methacrylate	868-77-9	Experimental Biodegradation	28 days	BOD	84 %BOD/COD	OECD 301D - Closed bottle test
2-hydroxyethyl methacrylate	868-77-9	Experimental Hydrolysis		Hydrolytic half-life basic pH	10.9 days (t 1/2)	OECD 111 Hydrolysis func of pH
Carbon black	1333-86-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
methyl methacrylate	80-62-6	Experimental Biodegradation	14 days	BOD	94 %BOD/ThOD	OECD 301C - MITI test (I)
tetrahydro-2-furyl-methanol	97-99-4	Experimental Biodegradation	28 days	BOD	92 %BOD/ThOD	OECD 301C - MITI test (I)
tetrahydro-2-furyl-methanol	97-99-4	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
maleic anhydride	108-31-6	Hydrolysis product Biodegradation	25 days	CO2 evolution	>90 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
maleic anhydride	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	0.37 minutes (t 1/2)	
styrene	100-42-5	Experimental Biodegradation	28 days	BOD	70.9 %BOD/ThOD	
styrene	100-42-5	Experimental Photolysis		Photolytic half-life (in air)	6.64 hours (t 1/2)	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Tetrahydrofurfuryl methacrylate	2455-24-5	Experimental Bioconcentration		Log Kow	1.76	OECD 117 log Kow HPLC method
Acrylate Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Ethylhexyl methacrylate	688-84-6	Experimental Bioconcentration	96 hours	Bioaccumulation factor	37	OECD305-Bioconcentration
2-Ethylhexyl methacrylate	688-84-6	Experimental Bioconcentration		Log Kow	4.95	similar to OECD 107
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Experimental Bioconcentration		Log Kow	0.9	OECD 107 log Kow shke flsk mtd
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Experimental Bioconcentration		Log Kow	0.782	EC A.8 Partition Coefficient
succinic anhydride	108-30-5	Experimental Bioconcentration		Log Kow	2.44	OECD 117 log Kow HPLC method
2-hydroxyethyl methacrylate	868-77-9	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flsk mtd
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
methyl methacrylate	80-62-6	Experimental Bioconcentration		Log Kow	1.38	OECD 107 log Kow shke flsk mtd
tetrahydro-2-furyl-methanol	97-99-4	Experimental Bioconcentration		Log Kow	-0.11	OECD 107 log Kow shke flsk mtd
maleic anhydride	108-31-6	Experimental Bioconcentration		Log Kow	-2.61	OECD 107 log Kow shke flsk mtd
styrene	100-42-5	Experimental Bioconcentration		Log Kow	2.96	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Tetrahydrofurfuryl methacrylate	2455-24-5	Modeled Mobility in Soil	Koc	25 l/kg	Episuite™
2-Ethylhexyl methacrylate	688-84-6	Modeled Mobility in Soil	Koc	2,348 l/kg	Episuite™
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	Experimental Mobility in Soil	Koc	51-129 l/kg	OECD 106 Adsp-Desb Batch Equil
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen succinate	20882-04-6	Modeled Mobility in Soil	Koc	1 l/kg	ACD/Labs ChemSketch™
2-hydroxyethyl methacrylate	868-77-9	Experimental Mobility in Soil	Koc	42.7 l/kg	
methyl methacrylate	80-62-6	Experimental Mobility in Soil	Koc	8.7-72 l/kg	
tetrahydro-2-furyl-methanol	97-99-4	Modeled Mobility in Soil	Koc	2 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. If no other disposal options are available, waste product that has been completely cured or polymerised may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

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

EU waste code (product as sold)

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

SECTION 14: Transportation information

Not hazardous for transportation.

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number or ID number	No data available.	No data available.	No data available.
14.2 UN proper shipping name	No data available.	No data available.	No data available.
14.3 Transport hazard class(es)	No data available.	No data available.	No data available.
14.4 Packing group	No data available.	No data available.	No data available.
14.5 Environmental hazards	No data available.	No data available.	No data available.
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	No data available.	No data available.	No data available.
IMDG Segregation Code	No data available.	No data available.	No data available.

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

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
methyl methacrylate	80-62-6	Gr. 3: Not classifiable	International Agency for Research on Cancer
styrene	100-42-5	Grp. 2A: Probable human carc.	International Agency for Research on Cancer
succinic anhydride	108-30-5	Gr. 3: Not classifiable	International Agency

for Research on Cancer

Global inventory status
Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

DIRECTIVE 2012/18/EU
Seveso hazard categories, Annex 1, Part 1
None

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
methyl methacrylate	80-62-6	50	200
styrene	100-42-5	10	50

Regulation (EU) No 649/2012
No chemicals listed

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

SECTION 16: Other information

List of relevant H statements

EUH071	Corrosive to the respiratory tract.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H360D	May damage the unborn child.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Revision information:
Industrial Use of Adhesives and Sealants: Section 16: Annex information was added.
Section 3: Composition/ Information of ingredients table information was modified.
Section 8: 8.2. Exposure controls information information was added.

Section 8: 8.2.3. Environmental exposure controls information information was added.
Section 8: DNEL table row information was added.
Section 8: PNEC table row information was added.
Section 11: Acute Toxicity table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Mobility in soil information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 15: Carcinogenicity information information was modified.
Annex: Prediction of exposure statement information was added.

Annex

1. Title	
Substance identification	2-hydroxyethyl methacrylate; EC No. 212-782-2; CAS Nbr 868-77-9;
Exposure Scenario Name	Industrial Use of Adhesives and Sealants
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 05 -Mixing or blending in batch processes PROC 13 -Treatment of articles by dipping and pouring ERC 05 -Use at industrial site leading to inclusion into/onto article
Processes, tasks and activities covered	Manual application of product. Mixing operations (open systems).
2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Duration of use: 8 hours/day; Frequency of exposure at workplace [for one worker]: 5 days/week; Indoor use;
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Goggles - Chemical resistant; **Environmental:** None needed;
Waste management measures	No use-specific waste management measures are required for this product. Refer to Section 13 of main SDS for disposal instructions:
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

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

3M Ireland MSDSs are available at www.3M.com

Safety Data Sheet

Document group:	18-8243-0	**Version number:**	8.07
Revision date:	16/05/2023	**Supersedes date:**	25/04/2023

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

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

1.1. Product identifier
3M™ Scotch-Weld™ Structural Plastic Adhesive DP8005 Black and Structural Plastic Adhesive 8005 Black, Part A

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

Identified uses
Structural adhesive.

1.3. Details of the supplier of the safety data sheet

Address:	3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone:	+353 1 280 3555
E Mail:	tox.uk@mmm.com
Website:	www.3M.com

1.4. Emergency telephone number
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

SECTION 2: Hazard identification

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

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

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Respiratory Sensitization, Category 1 - Resp. Sens. 1; H334
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

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

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	264-763-3	20 - 40
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	223674-50-8	426-100-8	5 - 20

HAZARD STATEMENTS:

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

PRECAUTIONARY STATEMENTS

Prevention:

P261A	Avoid breathing vapours.
P280B	Wear protective gloves and eye/face protection.

Response:

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

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

<=125 ml Hazard statements

H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.

<=125 ml Precautionary statements

Prevention:

P261A	Avoid breathing vapours.
P280B	Wear protective gloves and eye/face protection.

Response:

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

Contains 73% of components with unknown hazards to the aquatic environment.

Notes on labelling

Polyfunctional aziridine is classified as Acute Tox. 2 (H330) based on dust/mist (aerosol) data.
When incorporated into this product, this substance cannot become aerosolized.
Based on available toxicology data and this substance's very low vapour pressure, the saturated vapour of polyfunctional aziridine is not expected to be acutely toxic. Therefore, the classification is not applicable for this material when used as intended.

2.3. Other hazards

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Polyester Adipate	Trade Secret	40 - 70	Substance not classified as hazardous
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	(CAS-No.) 64265-57-2 (EC-No.) 264-763-3	20 - 40	Acute Tox. 2, H330 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Aquatic Chronic 2, H411
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	(CAS-No.) 223674-50-8 (EC-No.) ELINCS 426-100-8 (REACH-No.) 01-0000017250-82	5 - 20	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1, H317
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	0.5 - 1.5	Substance with a national occupational exposure limit
Titanium dioxide	(CAS-No.) 13463-67-7 (EC-No.) 236-675-5 (REACH-No.) 01-2119489379-17	<= 0.5	Carc. 2, H351 (inhalation)

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

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the CLP classification include:
Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.
Oxides of nitrogen.	During combustion.

5.3. Advice for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. 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. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam. 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 physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal 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
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Store away from heat. Store away from acids. Store away from oxidising agents.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Titanium dioxide	13463-67-7	Ireland OELs	TWA(Total inhalable dust)(8 hours):10 mg/m3;TWA(as respirable dust)(8 hours):4 mg/m3	
Silicon dioxide	67762-90-7	Ireland OELs	TWA(Total inhalable dust)(8 hours):6 mg/m3;TWA(as	

	respirable dust)(8 hours):2.4 mg/m3

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

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

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from Indust. Inspect./Ministry (IE)

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

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

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

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

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

Applicable Norms/Standards
Use gloves tested to EN 374

Respiratory protection

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

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

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter types A & P

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Colour	White
Odor	Mild Odor
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	>=82.2 ºC
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	82.2 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	46,096 mm²/sec
Water solubility	Slight (less than 10%)
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	<=13.3 Pa
Density	1.063 g/ml
Relative density	1.063 [*Ref Std:*WATER=1]
Relative Vapour Density	*No data available.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*
Molecular weight	*No data available.*
Percent volatile	5 - 10 % weight [*Test Method:*ACS]

SECTION 10: Stability and reactivity

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

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat.
Sparks and/or flames.

10.5 Incompatible materials
Strong acids.
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

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

Signs and Symptoms of Exposure

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

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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

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

Ingestion
May be harmful if swallowed.
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Additional Health Effects:

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

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

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Dermal	Rabbit	LD50 > 3,000 mg/kg
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.252 mg/l

2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Ingestion	Rat	LD50 3,038 mg/kg
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	Ingestion	Rat	LD50 693 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Rabbit	Mild irritant
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	Rabbit	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Rabbit	Corrosive
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	Professional judgement	Severe irritant
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Human and animal	Sensitising
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	Guinea pig	Sensitising
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
Titanium dioxide	Human and animal	Not classified

Respiratory Sensitisation

Name	Species	Value
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	In vivo	Mutagenic

Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	In Vitro	Not mutagenic
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic

Carcinogenicity

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

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	4 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

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

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

11.2. Information on other hazards

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

SECTION 12: Ecological information

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

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Algae or other aquatic plants	Experimental	72 hours	EC50	3.8 mg/l
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Fish	Experimental	96 hours	LC50	2.35 mg/l
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Invertebrate	Experimental	48 hours	EC50	6.96 mg/l
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	223674-50-8	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Experimental Biodegradation	28 days	CO2 evolution	<60 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	223674-50-8	Experimental Biodegradation	28 days	CO2 evolution	44 %CO2 evolution/THCO2 evolution	EC C.4.C. CO2 Evolution Test
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Data not availbl-	N/A	N/A	N/A	N/A

		insufficient				

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Modeled Bioconcentration		Log Kow	0.5	ACD/Labs ChemSketch™
Boron, hexaethyl[mu-(1,6-hexanediamine-kN1:kN6)]di-	223674-50-8	Experimental Bioconcentration		Log Kow	>5.99	EC A.8 Partition Coefficient
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation factor	9.6	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
2-ethyl-2-[[3-(2-methylaziridin-1-yl)propionyl]methyl]propane-1,3-diyl bis(2-methylaziridine-1-propionate)	64265-57-2	Modeled Mobility in Soil	Koc	19,000 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

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

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

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

EU waste code (product as sold)

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

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number or ID number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(POLYFUNCTIONAL AZIRIDINE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(POLYFUNCTIONAL AZIRIDINE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(POLYFUNCTIONAL AZIRIDINE)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	M6	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

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

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation

Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Global inventory status
Contact 3M for more information. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

DIRECTIVE 2012/18/EU
Seveso hazard categories, Annex 1, Part 1

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

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012
No chemicals listed

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

SECTION 16: Other information

List of relevant H statements

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H351i	Suspected of causing cancer by inhalation.
H411	Toxic to aquatic life with long lasting effects.

Revision information:
Section 3: Composition/ Information of ingredients table information was modified.

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

3M Ireland MSDSs are available at www.3M.com