Safety Data Sheet

Document group:	29-8287-4	**Version number:**	4.02
Revision date:	03/02/2017	**Supersedes date:**	16/05/2016

Transportation version number: 2.00 (03/02/2017)

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™ ESPE™ Scotchbond™ Universal

Product Identification Numbers
70-2011-3903-0

7000055178

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

Identified uses
Dental Product

Restrictions on Use
For use only by dental professionals.

1.3. Details of the supplier of the safety data sheet
Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone: +44 (0)1344 858 000
E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

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

SECTION 2: Hazard identification

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

This product is a medical device as defined in Directive 93/42/EEC (MDD), which is invasive or used in direct physical contact with the human body, and therefore is exempt from the requirements of classification and labelling according to Regulation (EC) No. 1272/2008 (CLP; Article 1, paragraph 5). Although not required, the classification and label information, as applicable, is provided below.

CLASSIFICATION:
Flammable Liquid, Category 3 - Flam. Liq. 3; H226
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1B - Skin Sens. 1B; H317

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

Symbols:
GHS02 (Flame) |GHS05 (Corrosion) | GHS07 (Exclamation mark) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	% by Wt
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	15 - 25
2-Hydroxyethyl methacrylate	868-77-9	15 - 25
1,10-decanediyl bismethacrylate	6701-13-9	5 - 15
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)	1207736-18-2	1 - 10

HAZARD STATEMENTS:

H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS

Prevention:

P210A	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280B	Wear protective gloves and eye/face protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Contains 43% of components with unknown hazards to the aquatic environment.

Notes on labelling

H315 not applied based on test data.

2.3. Other hazards

For information on hazards and safe use, please consider the corresponding sections of this document.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	216-367-7	15 - 25	Skin Sens. 1B, H317 (Self Classified)
2-Hydroxyethyl methacrylate (REACH Reg. No.:01-2119490169-29)	868-77-9	212-782-2	15 - 25	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 - Nota D (CLP)
1,10-decanediyl bismethacrylate	6701-13-9	229-745-1	5 - 15	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 (Self Classified)
Non hazardous ingredients	Mixture		10 - 15	Substance not classified as hazardous
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	122334-95-6	310-178-4	5 - 15	Substance not classified as hazardous
Ethanol (REACH Reg. No.:01-2119457610-43)	64-17-5	200-578-6	10 - 15	Flam. Liq. 2, H225 (CLP) Eye Irrit. 2, H319 (Self Classified)
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)	1207736-18-2		1 - 10	Eye Dam. 1, H318; Skin Sens. 1, H317; STOT SE 3, H335 (Self Classified)
2-Propenoic acid, polymer with methylenebutanedioic acid	25948-33-8		1 - 5	Substance not classified as hazardous
dl-bornane-2,3-dione	10373-78-1	233-814-1	< 2	Substance not classified as hazardous
Ethyl 4-dimethylaminobenzoate	10287-53-3	233-634-3	< 2	Substance not classified as hazardous
(Dimethylamino)Ethyl Methacrylate	2867-47-2	220-688-8	< 2	Acute Tox. 4, H312; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 - Nota D (CLP) Aquatic Chronic 3, H412 (Self Classified)
2,6-Di-tert-butyl-p-cresol (REACH Reg. No.:01-2119565113-46)	128-37-0	204-881-4	< 0.5	Aquatic Acute 1, H400,M=1; Aquatic Chronic 1, H410,M=1 (Vendor)

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. 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 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
Formaldehyde	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.

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.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR-AFFF type foam is recommended. 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 detergent and water. 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
A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. Acrylates may penetrate commonly-used gloves. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. 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.) Do not get in eyes.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed. 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
2,6-Di-tert-butyl-p-cresol	128-37-0	UK HSC	TWA:10 mg/m³	
Ethanol	64-17-5	UK HSC	TWA:1920 mg/m³(1000 ppm)	

UK HSC : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

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

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		Agricultural soil	0.476 mg/kg d.w.

methacrylate			
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

8.2. Exposure controls

In addition, refer to the annex for more information.

8.2.1. Engineering controls
Use in a well-ventilated area.

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:
Safety glasses with side shields.

Skin/hand protection
See Section 7.1 for additional information on skin protection.

Respiratory protection
None required.

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:	Viscous Liquid
Appearance/Odour	Characteristic odour, yellow liquid
Odour threshold	*No data available.*
pH	*Not applicable.*
Boiling point/boiling range	>= 78 ºC
Melting point	*No data available.*
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	30.5 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Flammable Limits(LEL)	*No data available.*

Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Relative density	1 - 1.2 [*Ref Std:*WATER=1]
Water solubility	Appreciable
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Evaporation rate	*No data available.*
Vapour density	*No data available.*
Decomposition temperature	*No data available.*
Viscosity	*Not applicable.*
Density	1 - 1.2 g/cm3

9.2. Other information

Molecular weight	*No data available.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

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
None known.

10.6 Hazardous decomposition products

Substance	**Condition**
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the 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 3M assessments.

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
Contact with the skin during product use is not expected to result in significant irritation. 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
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Additional information:
This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer, developmental toxicity, or liver toxicity.

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
2-Hydroxyethyl methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-Hydroxyethyl methacrylate	Ingestion	Rat	LD50 5,564 mg/kg
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Ethanol	Dermal	Rabbit	LD50 > 15,800 mg/kg
Ethanol	Inhalation-Vapour (4 hours)	Rat	LC50 124.7 mg/l
Ethanol	Ingestion	Rat	LD50 17,800 mg/kg
1,10-decanediyl bismethacrylate	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
1,10-decanediyl bismethacrylate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Ingestion	Rat	LD50 > 5,110 mg/kg
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)	Ingestion	Rat	LD50 > 1,380 mg/kg
2-Propenoic acid, polymer with methylenebutanedioic acid	Ingestion	Rat	LD50 > 5,000 mg/kg
2-Propenoic acid, polymer with methylenebutanedioic acid	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg

dl-bornane-2,3-dione	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
dl-bornane-2,3-dione	Ingestion	Rat	LD50 > 2,000 mg/kg
Ethyl 4-dimethylaminobenzoate	Dermal	Rat	LD50 > 2,000 mg/kg
Ethyl 4-dimethylaminobenzoate	Ingestion	Rat	LD50 > 2,000 mg/kg
(Dimethylamino)Ethyl Methacrylate	Dermal	Rat	LD50 > 2,000 mg/kg
(Dimethylamino)Ethyl Methacrylate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.436 mg/l
(Dimethylamino)Ethyl Methacrylate	Ingestion	Rat	LD50 > 2,000 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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	Rabbit	No significant irritation
2-Hydroxyethyl methacrylate	Rabbit	Minimal irritation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Not available	Minimal irritation
Ethanol	Rabbit	No significant irritation
1,10-decanediyl bismethacrylate	Professional judgement	Irritant
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Rabbit	No significant irritation
Ethyl 4-dimethylaminobenzoate	Rabbit	No significant irritation
2,6-Di-tert-butyl-p-cresol	Human and animal	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Overall product	In vitro data	Corrosive
2-Hydroxyethyl methacrylate	Rabbit	Moderate irritant
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Not available	Moderate irritant
Ethanol	Rabbit	Severe irritant
1,10-decanediyl bismethacrylate	Professional judgement	Severe irritant
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Rabbit	No significant irritation
Ethyl 4-dimethylaminobenzoate	Rabbit	Mild irritant
2,6-Di-tert-butyl-p-cresol	Rabbit	Mild irritant

Skin Sensitisation

Name	Species	Value
2-Hydroxyethyl methacrylate	Human and animal	Sensitising
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Guinea pig	Sensitising
Ethanol	Human	Some positive data exist, but the data are not sufficient for classification
1,10-decanediyl bismethacrylate		Sensitising

2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Human and animal	Not sensitising
2,6-Di-tert-butyl-p-cresol	Human	Some positive data exist, but the data are not sufficient for classification

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
2-Hydroxyethyl methacrylate	In vivo	Not mutagenic
2-Hydroxyethyl methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethanol	In vivo	Some positive data exist, but the data are not sufficient for classification
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	In Vitro	Not mutagenic
2,6-Di-tert-butyl-p-cresol	In Vitro	Not mutagenic
2,6-Di-tert-butyl-p-cresol	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Ethanol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
2,6-Di-tert-butyl-p-cresol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
2-Hydroxyethyl methacrylate	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-Hydroxyethyl methacrylate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-Hydroxyethyl methacrylate	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Not toxic to female reproduction	Mouse	NOAEL 0.8 mg/kg/day	premating & during gestation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Not toxic to male reproduction	Mouse	NOAEL 0.8 mg/kg/day	premating & during gestation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Not toxic to development	Mouse	NOAEL 0.8 mg/kg/day	premating & during gestation
Ethanol	Inhalation	Not toxic to development	Rat	NOAEL 38 mg/l	during gestation
Ethanol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 5,200 mg/kg/day	premating & during gestation

2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2,6-Di-tert-butyl-p-cresol	Ingestion	Not toxic to female reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	Not toxic to male reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Ethanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	LOAEL 2.6 mg/l	30 minutes
Ethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
Ethanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL not available	
Ethanol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 3,000 mg/kg	
1,10-decanediyl bismethacrylate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
2-Propenoic acid, polymer with methylenebutanedioic acid	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,000 mg/kg	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	endocrine system | liver | nervous system | kidney and/or bladder	All data are negative	Mouse	NOAEL 0.8 mg/kg/day	premating & during gestation
Ethanol	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
Ethanol	Inhalation	hematopoietic system | immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 25 mg/l	14 days
Ethanol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
Ethanol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 3,000 mg/kg/day	7 days
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	Inhalation	respiratory system | silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
2-Propenoic acid, polymer with methylenebutanedioic	Ingestion	endocrine system | hematopoietic	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 200 mg/kg/day	28 days

acid		system | liver	classification			
2-Propenoic acid, polymer with methylenebutanedioic acid	Ingestion	heart | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	All data are negative	Rat	NOAEL 2,000 mg/kg/day	28 days
2,6-Di-tert-butyl-p-cresol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg/day	28 days
2,6-Di-tert-butyl-p-cresol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 420 mg/kg/day	40 days
2,6-Di-tert-butyl-p-cresol	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 25 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,480 mg/kg/day	10 weeks

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.

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 Nbr	Organism	Type	Exposure	Test endpoint	Test result
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Ricefish	Experimental	96 hours	LC50	19 mg/l
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Water flea	Experimental	48 hours	EC50	33 mg/l
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Green Algae	Experimental	72 hours	EC50	9 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Fathead minnow	Estimated	96 hours	LC50	1.1 mg/l

Ethanol	64-17-5	Water flea	Experimental	48 hours	EC50	5,012 mg/l
Ethanol	64-17-5	Green algae	Experimental	96 hours	EC50	1,000 mg/l
Ethanol	64-17-5	Rainbow trout	Experimental	96 hours	LC50	42 mg/l
2-Hydroxyethyl methacrylate	868-77-9	Water flea	Experimental	48 hours	EC50	380 mg/l
2-Hydroxyethyl methacrylate	868-77-9	Fathead minnow	Experimental	96 hours	LC50	227 mg/l
Ethyl 4-dimethylamino benzoate	10287-53-3	Fathead minnow	Estimated	96 hours	LC50	8.8 mg/l
2-Hydroxyethyl methacrylate	868-77-9	Green Algae	Experimental	72 hours	EC50	345 mg/l
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Green Algae	Experimental	72 hours	NOEC	1 mg/l
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Water flea	Experimental	21 days	NOEC	0.48 mg/l
Ethanol	64-17-5	Green algae	Experimental	96 hours	NOEC	<500 mg/l
Ethanol	64-17-5	Water flea	Experimental	11 days	NOEC	=9.6 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-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	122334-95-6		Data not available or insufficient for classification			
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)	1207736-18-2		Data not available or insufficient for classification			
2-Propenoic acid, polymer with methylenebutanedioic acid	25948-33-8		Data not available or insufficient for classification			
1,10-decanediyl bismethacrylate	6701-13-9		Data not available or insufficient for classification			
dl-bornane-2,3-	10373-78-1		Data not			

dione			available or insufficient for classification			
2,6-Di-tert-butyl-p-cresol	128-37-0	Green algae	Experimental	72 hours	NOEC	0.4 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2		Data not available or insufficient for classification			

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ethyl 4-dimethylamino benzoate	10287-53-3	Estimated Photolysis		Photolytic half-life (in air)	3.1 hours (t 1/2)	Other methods
1,10-decanediyl bismethacrylate	6701-13-9	Estimated Photolysis		Photolytic half-life (in air)	7.52 hours (t 1/2)	Other methods
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Estimated Photolysis		Photolytic half-life (in air)	3.88 hours (t 1/2)	Other methods
2-Hydroxyethyl methacrylate	868-77-9	Estimated Photolysis		Photolytic half-life (in air)	1.3 days (t 1/2)	Other methods
Ethanol	64-17-5	Experimental Photolysis		Photolytic half-life (in air)	9.41 days (t 1/2)	Other methods
dl-bornane-2,3-dione	10373-78-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Ethyl 4-dimethylamino benzoate	10287-53-3	Estimated Biodegradation	28 days	BOD	29 % weight	OECD 301C - MITI test (I)
1,10-decanediyl bismethacrylate	6701-13-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Experimental Hydrolysis		Hydrolytic half-life	4.54 days (t 1/2)	Other methods
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	95 % weight	OECD 301E - Modified OECD Scre
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Estimated Biodegradation	28 days	BOD	33 % weight	OECD 301C - MITI test (I)
2-Propenoic	1207736-18-2	Data not	N/A	N/A	N/A	N/A

acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus oxide (P2O5)		available or insufficient for classification				
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	122334-95-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Propenoic acid, polymer with methylenebutanedioic acid	25948-33-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Hydroxyethyl methacrylate	868-77-9	Experimental Biodegradation	14 days	BOD	95 % weight	OECD 301C - MITI test (I)
2-Hydroxyethyl methacrylate	868-77-9	Experimental Hydrolysis		Hydrolytic half-life	10.9 days (t 1/2)	Other methods
2,6-Di-tert-butyl-p-cresol	128-37-0	Experimental Biodegradation	28 days	BOD	4.5 % weight	OECD 301C - MITI test (I)
Ethanol	64-17-5	Experimental Biodegradation	14 days	BOD	89 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ethyl 4-dimethylamino benzoate	10287-53-3	Estimated Bioconcentration		Bioaccumulation factor	19	Estimated: Bioconcentration factor
1,10-decanediyl bismethacrylate	6701-13-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Propenoic acid, 2-methyl-, reaction products with 1,10-decanediol and phosphorus	1207736-18-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

oxide (P2O5)						
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with vitreous silica	122334-95-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Propenoic acid, polymer with methylenebutanedioic acid	25948-33-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Ethanol	64-17-5	Modeled BCF - Other	28 days	Bioaccumulation factor	3.16	Estimated: Bioconcentration factor
dl-bornane-2,3-dione	10373-78-1	Modeled Bioconcentration		Log Kow	1.52 mg/l	Estimated: Octanol-water partition coefficient
(Dimethylamino)Ethyl Methacrylate	2867-47-2	Experimental Bioconcentration		Log Kow	1.13	Other methods
2-Hydroxyethyl methacrylate	868-77-9	Experimental Bioconcentration		Log Kow	0.47	Other methods
Ethanol	64-17-5	Experimental Bioconcentration		Log Kow	-0.31	Other methods
2,6-Di-tert-butyl-p-cresol	128-37-0	Experimental BCF-Carp	56 days	Bioaccumulation factor	1276	OECD 305E - Bioaccumulation flow-through fish test
Ethanol	64-17-5	Estimated Bioconcentration	28 days	Bioaccumulation factor	3.16	Estimated: Bioconcentration factor

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
See Section 11.1 Information on toxicological effects

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. 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.

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)

180106* Chemicals consisting of or containing dangerous substances.

SECTION 14: Transportation information

70-2011-3903-0

ADR/RID: DANGEROUS GOODS IN EXCEPTED QUANTITIES, CLASS 3, III, (--).
IMDG-CODE: UN1133, ADHESIVES, 3, III, IMDG-Code segregation code: NONE, Dangerous Goods in excepted Quantities, EMS: FE,SD.
ICAO/IATA: DANGEROUS GOODS IN EXCEPTED QUANTITIES OF CLASS 3,UN1133, 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
2,6-Di-tert-butyl-p-cresol	128-37-0	Gr. 3: Not classifiable	International Agency for Research on Cancer

Global inventory status

Contact 3M for more information.

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out for the relevant substances in this material by the registrant in accordance with regulation REGULATION (EC) No 1907/2006

SECTION 16: Other information

List of relevant H statements

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Revision information:

Professional Mixing and Application: Section 16: Annex information was added.
Section 1: Product identification numbers information was added.

Section 01: SAP Material Numbers information was added.
CLP: Ingredient table information was modified.
Label: CLP Percent Unknown information was added.
Section 3: Composition/ Information of ingredients table information was modified.
Section 7: Precautions safe handling information 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.
BLV Reg Agency Desc information was deleted.
Section 8: BLV table information was deleted.
Section 8: BLV information was added.
Section 8: DNEL table row information was added.
Legend description information was deleted.
Section 8: Occupational exposure limit table information was modified.
Section 8: PNEC table row information was added.
Section 11: Acute Toxicity table information was modified.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 11: Target Organs - Single Table information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14: Transportation classification information was deleted.
Section 15: Carcinogenicity information information was added.
Section 15: Chemical Safety Assessment information was modified.
Annex: Prediction of exposure statement information was added.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was modified.

Annex

1. Title	
Substance identification	2-Hydroxyethyl methacrylate; EC No. 212-782-2; CAS Nbr 868-77-9;
Exposure Scenario Name	Hand-mixing of preparations, e.g. plasters, resins, two-component adhesives.
Identified uses	PROC 0, ERC 08c, SU 22 ;
Processes, tasks and activities covered	Application of substances/mixtures by dentist to patient's mouth on the dental hard tissue. Manual application of product.
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; Indoors with good general ventilation;
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Goggles - Chemical resistant;

	Protective Gloves - 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.

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