Safety Data Sheet

This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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SECTION 1: Identification

1.1. Product identifier
Single Bond Universal (41266, 41269, 41278, 41279, 41282, 41283)

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Adhesive.

Restrictions on use
For use by dental professionals only.

1.3. Supplier's details

Address:	KCI Medical Asia Pte. Ltd. 10 Ang Mo Kio Street 65 #01-01, Techpoint, Singapore, 569059
Telephone:	+65 6577 1266
Website:	Solventum.com

1.4. Emergency telephone number
+65 3158 1349; (24/7) +1-703-527-3887; (24/7)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable liquid: Category 3.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.

2.2. Label elements
SIGNAL WORD
DANGER!

Symbols
Flame |Corrosion | Exclamation mark |Health Hazard |

Pictograms

HAZARD STATEMENTS

H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P210	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 CENTER or doctor.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P370 + P378	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

2.3. Other hazards

- May cause chemical gastrointestinal burns. This material has been tested for eye damage/irritation and the test results are reflected in the assigned classification. This material has been tested for skin corrosion/irritation and the test results do not meet the criteria for classification.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
2-Hydroxyethyl methacrylate	868-77-9	15 - 25
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	15 - 25
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	10 - 20
Ethanol	64-17-5	10 - 15
Water	7732-18-5	10 - 15
SILANE TREATED SILICA	122334-95-6	7 - 13
COPOLYMER OF ACRYLIC AND ITACONIC ACID	25948-33-8	1 - 5
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	< 2
CAMPHORQUINONE	10373-78-1	< 2
2,6-Di-tert-butyl-p-cresol	128-37-0	< 0.5

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

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. Suitable 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. Special protective actions 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 vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

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 that is resistant to polar solvents. 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 in accordance with applicable local/regional/national/international regulations.

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. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharge. Do not breathe 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. 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. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidising agents.

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	ACGIH	TWA(inhalable fraction and vapor):2 mg/m3	A4: Not class. as human carcin
2,6-Di-tert-butyl-p-cresol	128-37-0	Singapore PELs	TWA(8 hours):10 mg/m3	
Ethanol	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal carcin.
Ethanol	64-17-5	Singapore PELs	TWA(8 hours):1880 mg/m3(1000 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous Liquid
Color	Yellow
Odor	Moderate Honey
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*No data available.*
Boiling point/Initial boiling point/Boiling range	>= 78 ºC
Flash point	30.5 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No data available.*
Flammability	Flammable liquid: Category 3.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Relative Vapor Density	*No data available.*
Density	1 g/cm3 - 1.2 g/cm3
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.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Kinematic Viscosity	*Not applicable.*
Volatile organic compounds (VOC)	*No data available.*
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
No health effects are expected.

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 corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause 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.

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	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Rat	LD50 > 11,700 mg/kg
Ethanol	Dermal	Rabbit	LD50 > 15,800 mg/kg
Ethanol	Inhalation-Vapor (4 hours)	Rat	LC50 124.7 mg/l
Ethanol	Ingestion	Rat	LD50 17,800 mg/kg
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS 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 PHOSPHOROUS OXIDE (P2O5)	Ingestion	Rat	LD50 > 2,000 mg/kg
SILANE TREATED SILICA	Dermal	Rabbit	LD50 > 5,000 mg/kg
SILANE TREATED SILICA	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
SILANE TREATED SILICA	Ingestion	Rat	LD50 > 5,110 mg/kg
COPOLYMER OF ACRYLIC AND ITACONIC ACID	Ingestion	Rat	LD50 > 5,000 mg/kg
COPOLYMER OF ACRYLIC AND ITACONIC ACID	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
CAMPHORQUINONE	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
CAMPHORQUINONE	Ingestion	Rat	LD50 > 2,000 mg/kg
DIMETHYLAMINOBENZOAT(-4)	Dermal	Rat	LD50 > 2,000 mg/kg
DIMETHYLAMINOBENZOAT(-4)	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	Rabbit	No significant irritation
Ethanol	Rabbit	No significant irritation
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	In vitro data	Corrosive
SILANE TREATED SILICA	Rabbit	No significant irritation
DIMETHYLAMINOBENZOAT(-4)	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	In vitro data	No significant irritation
Ethanol	Rabbit	Severe irritant
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	In vitro data	Corrosive
SILANE TREATED SILICA	Rabbit	No significant irritation
DIMETHYLAMINOBENZOAT(-4)	Rabbit	No significant irritation
2,6-Di-tert-butyl-p-cresol	Rabbit	Mild irritant

Sensitization:

Skin Sensitisation

Name	Species	Value
2-Hydroxyethyl methacrylate	Human and animal	Sensitising
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Mouse	Not classified
Ethanol	Human	Not classified
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	Mouse	Sensitising
SILANE TREATED SILICA	Human and animal	Not classified
DIMETHYLAMINOBENZOAT(-4)		Not classified
2,6-Di-tert-butyl-p-cresol	Human	Not classified

Respiratory Sensitisation

For the component/components, either no data are currently available or the data are 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	Not mutagenic
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-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	In Vitro	Not mutagenic
SILANE TREATED SILICA	In Vitro	Not mutagenic
DIMETHYLAMINOBENZOAT(-4)	In vivo	Not mutagenic
DIMETHYLAMINOBENZOAT(-4)	In Vitro	Some positive data exist, but the data are not sufficient for classification
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

SILANE TREATED 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 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
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Ethanol	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
Ethanol	Ingestion	Not classified for development	Rat	NOAEL 5,200 mg/kg/day	premating & during gestation
SILANE TREATED SILICA	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
SILANE TREATED SILICA	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
SILANE TREATED SILICA	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
DIMETHYLAMINOBENZOAT(-4)	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
DIMETHYLAMINOBENZOAT(-4)	Ingestion	Not classified for development	Rat	NOAEL 50 mg/kg/day	premating into lactation
DIMETHYLAMINOBENZOAT(-4)	Ingestion	Toxic to male reproduction	Rat	NOAEL 50 mg/kg/day	53 days
2,6-Di-tert-butyl-p-cresol	Ingestion	Not classified for female reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	Not classified for development	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	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
Ethanol	Inhalation	central nervous system depression	Not classified	Human and animal	NOAEL not available	
Ethanol	Ingestion	central nervous system depression	Not classified	Multiple animal species	NOAEL not available	
Ethanol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
2-PROPENOIC ACID, 2-METHYL-, REACTION	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL Not available	

PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)			classification	hazards		
COPOLYMER OF ACRYLIC AND ITACONIC ACID	Ingestion	nervous system	Not classified	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 | hematopoietic system | liver | heart | skin | gastrointestinal tract | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
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	Not classified	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	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days
SILANE TREATED SILICA	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
COPOLYMER OF ACRYLIC AND ITACONIC ACID	Ingestion	endocrine system | hematopoietic system | liver	Not classified	Rat	NOAEL 200 mg/kg/day	28 days
COPOLYMER OF ACRYLIC AND ITACONIC ACID	Ingestion	heart | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 2,000 mg/kg/day	28 days
DIMETHYLAMINOBENZOAT(-4)	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 74 mg/kg/day	28 days
DIMETHYLAMINOBENZOAT(-4)	Ingestion	liver | heart | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 900 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	Rat	NOAEL 250 mg/kg/day	28 days

			classification			
2,6-Di-tert-butyl-p-cresol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	blood	Not classified	Rat	LOAEL 420 mg/kg/day	40 days
2,6-Di-tert-butyl-p-cresol	Ingestion	endocrine system	Not classified	Rat	NOAEL 25 mg/kg/day	2 generation
2,6-Di-tert-butyl-p-cresol	Ingestion	heart	Not classified	Mouse	NOAEL 3,480 mg/kg/day	10 weeks

Aspiration Hazard
For the component/components, either no data are currently available or the data are 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 be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

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

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
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
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Common Carp	Analogous Compound	96 hours	No tox obs at lmt of water sol	>100 mg/l
(1-methylethylidene)b	1565-94-2	Green algae	Endpoint not reached	96 hours	EC50	>100 mg/l

is[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate						
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Green algae	Analogous Compound	96 hours	EC10	1.1 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	Green algae	Experimental	72 hours	EC50	0.718 mg/l
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	Water flea	Experimental	48 hours	EL50	>104 mg/l
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	Green algae	Experimental	72 hours	NOEC	0.1 mg/l
Ethanol	64-17-5	Fathead minnow	Experimental	96 hours	LC50	14,200 mg/l
Ethanol	64-17-5	Fish	Experimental	96 hours	LC50	11,000 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	EC50	275 mg/l
Ethanol	64-17-5	Water flea	Experimental	48 hours	LC50	5,012 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	ErC10	11.5 mg/l
Ethanol	64-17-5	Water flea	Experimental	10 days	NOEC	9.6 mg/l
SILANE TREATED SILICA	122334-95-6	Activated sludge	Estimated	3 hours	NOEC	>=1,000 mg/l
SILANE TREATED SILICA	122334-95-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
COPOLYMER OF ACRYLIC AND ITACONIC ACID	25948-33-8	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
CAMPHORQUINONE	10373-78-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
DIMETHYLAMIN	10287-53-3	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l

OBENZOAT(-4)						
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Green algae	Experimental	72 hours	EL50	2.8 mg/l
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Rainbow trout	Experimental	96 hours	LC50	1.9 mg/l
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Water flea	Experimental	48 hours	EC50	4.5 mg/l
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Green algae	Experimental	72 hours	ErC10	0.71 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Activated sludge	Experimental	3 hours	EC50	>10,000 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Green algae	Experimental	72 hours	EC50	>0.4 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Water flea	Experimental	48 hours	EC50	0.48 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Green algae	Experimental	72 hours	EC10	0.4 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Medaka	Experimental	42 days	NOEC	0.053 mg/l
2,6-Di-tert-butyl-p-cresol	128-37-0	Water flea	Experimental	21 days	NOEC	0.023 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
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
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Analogous Compound Biodegradation	28 days	BOD	21 %BOD/ThOD	similar to OECD 301F
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	Experimental Biodegradation	28 days	BOD	77-80 %BOD/ThOD	OECD 301F - Manometric respirometry
Ethanol	64-17-5	Experimental Biodegradation	14 days	BOD	89 %BOD/ThOD	OECD 301C - MITI test (I)
SILANE TREATED SILICA	122334-95-6	Data not available-insufficient	N/A	N/A	N/A	N/A
COPOLYMER OF ACRYLIC AND ITACONIC ACID	25948-33-8	Data not available-insufficient	N/A	N/A	N/A	N/A
CAMPHORQUINONE	10373-78-1	Modeled Biodegradation	28 days	BOD	20.6 %BOD/ThOD	Catalogic™
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Experimental Biodegradation	28 days	CO2 evolution	40 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH

2,6-Di-tert-butyl-p-cresol	128-37-0	Data not available-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Hydroxyethyl methacrylate	868-77-9	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flsk mtd
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Modeled Bioconcentration		Bioaccumulation factor	5.8	Catalogic™
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Analogous Compound Bioconcentration		Log Kow	4.63	OECD 117 log Kow HPLC method
2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5)	1207736-18-2	Modeled Bioconcentration		Log Kow	-2.02	ACD/Labs ChemSketch™
Ethanol	64-17-5	Experimental Bioconcentration		Log Kow	-0.35	
SILANE TREATED SILICA	122334-95-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
COPOLYMER OF ACRYLIC AND ITACONIC ACID	25948-33-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
CAMPHORQUINONE	10373-78-1	Modeled Bioconcentration		Bioaccumulation factor	7.1	Catalogic™
CAMPHORQUINONE	10373-78-1	Experimental Bioconcentration		Log Kow	1.52	
DIMETHYLAMINOBENZOAT(-4)	10287-53-3	Experimental Bioconcentration		Log Kow	3.2	OECD 117 log Kow HPLC method
2,6-Di-tert-butyl-p-cresol	128-37-0	Experimental BCF - Fish	56 days	Bioaccumulation factor	1277	OECD305-Bioconcentration

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

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

Incinerate uncured product in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. If no other disposal options are available, waste product that has been completely cured or

polymerized may be placed in a landfill properly designed for industrial waste.

SECTION 14: Transport Information

International Regulations

UN No.: UN1133
UN Proper shipping name: ADHESIVES CONTAINING FLAMMABLE LIQUID
Forbidden (IMO):3M U.S.DIVISION POLICY

Transportation Class (IMO): None assigned
Transportation Class (IATA): 3-3 Flammable liquid
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): Dangerous goods in excepted quantities: 3
Packing Group: III
Marine pollutant: None assigned

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information.

This product may contain component(s) that are regulated by the following:
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.
Environmental Protection and Management (Hazardous Substances) Regulations: This product is subject to the requirements in the Regulations

SECTION 16: Other information

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.

Solventum Singapore SDSs are available at Solventum.com