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.

Document group:	29-4241-5	**Version number:**	2.00
Issue Date:	19/03/2024	**Supersedes date:**	11/09/2022

IDENTIFICATION

1.1. Product identifier
3M™ RelyX™ U200 Refill Clicker (56877, 568778, 56879)

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Dental cement.

Restrictions on use
For use by dental professionals only.

1.3. Supplier's details

Address: 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number

Company Emergency Hotline: +65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

This product is a kit or a multipart product which consists of multiple, independently packaged components. An SDS for each of these components is included. Please do not separate the component SDSs from this cover page. The document numbers of the SDSs for components of this product are:

29-2269-8, 29-2267-2

TRANSPORT INFORMATION

International Regulations

UN No.: None assigned
UN Proper shipping name: None assigned
Transportation Class (IMO): None assigned
Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned

Packing Group: None assigned
Marine pollutant: None assigned

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 Singapore SDSs are available at www.3m.com.sg

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.

Document group:	29-2267-2	**Version number:**	2.00
Issue Date:	29/08/2024	**Supersedes date:**	09/09/2022

SECTION 1: Identification

1.1. Product identifier
3M™ RelyX™ U200 Base Paste

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Cement

Restrictions on use
For use by dental professionals only.

1.3. Supplier's details
Address: 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Skin Sensitizer: Category 1.

2.2. Label elements
SIGNAL WORD
WARNING!

Symbols
Exclamation mark |

Pictograms

HAZARD STATEMENTS

H317 May cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS

Prevention:

P280E Wear protective gloves.

Response:

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

Eye damage/irritation class. not applied based on test data This material has been tested for eye damage/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
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	None	45 - 55
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	1224866-76-5	20 - 30
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	10 - 20
SILANE TREATED SILICA	68909-20-6	1 - 10
SODIUM PERSULFATE	7775-27-1	< 3
OXIDE GLASS CHEMICALS (non-fibrous)	65997-17-3	< 3
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	< 0.5
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	< 0.1

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
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, 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

Allergic skin reaction (redness, swelling, blistering, and itching).

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 water 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
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.

5.3. Special protective actions 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. 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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible using non-sparking tools. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take any precaution to avoid mixing with combustibles. 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. Do not get in eyes.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Keep/store away from clothing and other combustible materials.

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
COPPER COMPOUNDS	6046-93-1	ACGIH	TWA(as Cu, fume):0.2 mg/m3;TWA(as Cu dust or mist):1 mg/m3	
PERSULFATE COMPOUNDS	7775-27-1	ACGIH	TWA(as persulfate):0.1 mg/m3	

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	Solid.
Specific Physical Form:	Paste
Color	Tooth
Odor	Slight Acrylic
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*No data available.*

Boiling point/Initial boiling point/Boiling range	*No data available.*
Flash point	No flash point
Evaporation rate	*No data available.*
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	2 g/cm3 - 2.2 g/cm3
Relative density	2 - 2.2 [*Ref Std:*WATER=1]
Water solubility	Negligible
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	*No data available.*
Volatile organic compounds (VOC)	*No data available.*
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	*No data available.*
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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
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
This product may have a characteristic odour; however, no adverse health effects are anticipated.

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

Eye contact
Contact with the eyes during product use is not expected to result in significant irritation.

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

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	Dermal		LD50 estimated to be > 5,000 mg/kg
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	Ingestion	Rat	LD50 > 2,000 mg/kg
2,2'-ethylenedioxydiethyl dimethacrylate	Dermal	Mouse	LD50 > 2,000
2,2'-ethylenedioxydiethyl dimethacrylate	Ingestion	Rat	LD50 10,837 mg/kg
SILANE TREATED SILICA	Ingestion	Rat	LD50 > 2,000 mg/kg
SILANE TREATED SILICA	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
OXIDE GLASS CHEMICALS (non-fibrous)	Dermal		LD50 estimated to be > 5,000 mg/kg
OXIDE GLASS CHEMICALS (non-fibrous)	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
SODIUM PERSULFATE	Dermal	Rabbit	LD50 > 10,000 mg/kg
SODIUM PERSULFATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 47.93 mg/l
SODIUM PERSULFATE	Ingestion	Rat	LD50 895 mg/kg
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Dermal	Rat	LD50 > 2,000 mg/kg
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Inhalation-	Rat	LC50 > 0.8 mg/l

	Dust/Mist (4 hours)		
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Ingestion	Rat	LD50 12,905 mg/kg
Acetic acid, copper(2+) salt, monohydrate	Dermal	Rat	LD50 > 2,000 mg/kg
Acetic acid, copper(2+) salt, monohydrate	Ingestion	Rat	LD50 > 300, < 2000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	Professional judgement	No significant irritation
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	Rabbit	Minimal irritation
2,2'-ethylenedioxydiethyl dimethacrylate	Rabbit	No significant irritation
SILANE TREATED SILICA	Rabbit	No significant irritation
OXIDE GLASS CHEMICALS (non-fibrous)	Professional judgement	No significant irritation
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Rabbit	No significant irritation
Acetic acid, copper(2+) salt, monohydrate	In vitro data	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Overall product		No significant irritation
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	Professional judgement	No significant irritation
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	Rabbit	Corrosive
2,2'-ethylenedioxydiethyl dimethacrylate	Rabbit	No significant irritation
SILANE TREATED SILICA	Rabbit	No significant irritation
OXIDE GLASS CHEMICALS (non-fibrous)	Professional judgement	No significant irritation
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Rabbit	No significant irritation
Acetic acid, copper(2+) salt, monohydrate	Rabbit	Corrosive

Sensitization:

Skin Sensitisation

Name	Species	Value
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	Guinea pig	Not classified
2,2'-ethylenedioxydiethyl dimethacrylate	Mouse	Sensitising
SILANE TREATED SILICA	Guinea pig	Not classified
Tert-butyl 3,5,5-trimethylperoxyhexanoate	Guinea pig	Sensitising
Acetic acid, copper(2+) salt, monohydrate	Guinea pig	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-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	In Vitro	Not mutagenic
2,2'-ethylenedioxydiethyl dimethacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
SILANE TREATED SILICA	In Vitro	Not mutagenic
Acetic acid, copper(2+) salt, monohydrate	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
2,2'-ethylenedioxydiethyl dimethacrylate	Dermal	Mouse	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
2,2'-ethylenedioxydiethyl dimethacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
2,2'-ethylenedioxydiethyl dimethacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	5 weeks
2,2'-ethylenedioxydiethyl dimethacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Acetic acid, copper(2+) salt, monohydrate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2,2'-ethylenedioxydiethyl dimethacrylate	Dermal	liver	Not classified	Mouse	NOAEL 2,000 mg/kg/day	13 weeks
2,2'-ethylenedioxydiethyl dimethacrylate	Dermal	skin	Not classified	Mouse	NOAEL 100 mg/kg/day	13 weeks
2,2'-ethylenedioxydiethyl dimethacrylate	Dermal	gastrointestinal tract | hematopoietic system | nervous system | kidney and/or bladder | respiratory system	Not classified	Mouse	NOAEL 2,000 mg/kg/day	13 weeks
2,2'-ethylenedioxydiethyl dimethacrylate	Ingestion	hematopoietic system | liver | nervous system |	Not classified	Rat	NOAEL 3,849 mg/kg/day	13 weeks

		kidney and/or bladder | eyes				
SILANE TREATED SILICA	Inhalation	respiratory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.035 mg/l	13 weeks
SILANE TREATED SILICA	Inhalation	hematopoietic system | kidney and/or bladder	Not classified	Rat	NOAEL 0.035 mg/l	13 weeks
SILANE TREATED SILICA	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	5 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 3: Harmful 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
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	None	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND	1224866-76-5	Green algae	Endpoint not reached	72 hours	EC50	>100 mg/l

PHOSPHORUS OXIDE						
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	1224866-76-5	Water flea	Experimental	48 hours	EC50	>100 mg/l
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	1224866-76-5	Green algae	Experimental	72 hours	NOEC	56 mg/l
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Green algae	Experimental	72 hours	ErC50	>100 mg/l
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Zebra Fish	Experimental	96 hours	LC50	16.4 mg/l
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Green algae	Experimental	72 hours	NOEC	18.6 mg/l
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Water flea	Experimental	21 days	NOEC	32 mg/l
SILANE TREATED SILICA	68909-20-6	Algae or other aquatic plants	Estimated	72 hours	EC50	>100 mg/l
OXIDE GLASS CHEMICALS (non-fibrous)	65997-17-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
SODIUM PERSULFATE	7775-27-1	Algae or other aquatic plants	Estimated	72 hours	EC50	320 mg/l
SODIUM PERSULFATE	7775-27-1	Copepod	Estimated	48 hours	EC50	21.22 mg/l
SODIUM PERSULFATE	7775-27-1	Rainbow trout	Estimated	96 hours	LC50	76.3 mg/l
SODIUM PERSULFATE	7775-27-1	Algae or other aquatic plants	Estimated	72 hours	NOEC	32 mg/l
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Green algae	Experimental	72 hours	ErC50	0.51 mg/l
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Rainbow trout	Experimental	96 hours	LC50	7.03 mg/l
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Water flea	Experimental	48 hours	EC50	>100 mg/l

Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Green algae	Experimental	72 hours	NOEC	0.125 mg/l
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Water flea	Experimental	21 days	NOEC	0.22 mg/l
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Activated sludge	Experimental	3 hours	EC50	327.02 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Green algae	Estimated	72 hours	EC50	0.33 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Water flea	Estimated	48 hours	EC50	0.04 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Zebra Fish	Estimated	96 hours	LC50	0.037 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Fathead minnow	Estimated	32 days	EC10	0.019 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Green algae	Estimated	N/A	NOEC	0.069 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Sediment Worm	Estimated	28 days	NOEC	57.5 mg/kg (Dry Weight)
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Water flea	Estimated	7 days	NOEC	0.01 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Activated sludge	Estimated	N/A	EC50	22 mg/l
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Barley	Estimated	4 days	NOEC	50 mg/kg (Dry Weight)
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Bobwhite quail	Estimated	14 days	LD50	4,402 mg per kg of bodyweight
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Redworm	Estimated	56 days	NOEC	31 mg/kg (Dry Weight)
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Soil microbes	Estimated	4 days	NOEC	38 mg/kg (Dry Weight)
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Springtail	Estimated	28 days	NOEC	87.7 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	None	Data not available-insufficient	N/A	N/A	N/A	N/A

2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE	1224866-76-5	Experimental Biodegradation	28 days	BOD	82 %BOD/ThOD	OECD 301F - Manometric respirometry
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Experimental Biodegradation	28 days	CO2 evolution	85 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
SILANE TREATED SILICA	68909-20-6	Data not available-insufficient	N/A	N/A	N/A	N/A
OXIDE GLASS CHEMICALS (non-fibrous)	65997-17-3	Data not available-insufficient	N/A	N/A	N/A	N/A
SODIUM PERSULFATE	7775-27-1	Data not available-insufficient	N/A	N/A	N/A	N/A
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Experimental Biodegradation	28 days	BOD	72 %BOD/ThOD	OECD 301D - Closed bottle test
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Experimental Aquatic Inherent Biodegrad.	56 days	BOD	58 %BOD/ThOD	OECD 302A - Modified SCAS Test
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	51 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Analogous Compound Biodegradation	14 days	BOD	74 %BOD/ThOD	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material	None	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYL	1224866-76-5	Experimental Bioconcentration		Log Kow	-0.2	

ATE AND PHOSPHORUS OXIDE						
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	Experimental Bioconcentration		Log Kow	2.3	EC A.8 Partition Coefficient
SILANE TREATED SILICA	68909-20-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
OXIDE GLASS CHEMICALS (non-fibrous)	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
SODIUM PERSULFATE	7775-27-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Modeled Bioconcentration		Bioaccumulation factor	380	Catalogic™
Tert-butyl 3,5,5-trimethylperoxyhexanoate	13122-18-4	Experimental Bioconcentration		Log Kow	5.16	OECD 117 log Kow HPLC method
Acetic acid, copper(2+) salt, monohydrate	6046-93-1	Analogous Compound Bioconcentration		Log Kow	-0.17	

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.

Dispose of waste product in a permitted industrial waste facility.

SECTION 14: Transport Information

International Regulations

UN No.: None assigned
UN Proper shipping name: None assigned

Transportation Class (IMO): None assigned
Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: None assigned
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. The components of this product are in compliance with the new substance notification requirements of CEPA.

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.
Fire Safety (Petroleum and Flammable Materials) 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.

3M Singapore SDSs are available at www.3m.com.sg

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.

Document group:	29-2269-8	**Version number:**	3.00
Issue Date:	28/08/2024	**Supersedes date:**	19/03/2024

SECTION 1: Identification

1.1. Product identifier
3M™ RelyX™ U200 Catalyst

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Cement

Restrictions on use
For use by dental professionals only.

1.3. Supplier's details

Address:	3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone:	+65 6450 8888
Website:	www.3m.com.sg

1.4. Emergency telephone number
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Serious Eye Damage/Irritation: Category 2.
Skin Sensitizer: Category 1.
Acute Aquatic Toxicity: Category 1.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
SIGNAL WORD
WARNING!

Symbols
Exclamation mark |Environment |

Pictograms

HAZARD STATEMENTS

H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

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

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	None	50 - 70
SUBSTITUTED DIMETHACRYLATE	27689-12-9	10 - 30
SILANE TREATED SILICA	68909-20-6	< 5
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	< 5
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	945012-02-2	< 5
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	< 2
Calcium dihydroxide	1305-62-0	< 2
Sodium toluene-4-sulphinate	824-79-3	< 2
NUC - Titanium Dioxide	13463-67-7	< 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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

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

4.2. Most important symptoms and effects, both acute and delayed

Allergic skin reaction (redness, swelling, blistering, and itching).

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 ordinary combustible material such as water or foam to extinguish.

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

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

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
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. Do not get in eyes. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove.

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

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
Calcium dihydroxide	1305-62-0	ACGIH	TWA:5 mg/m3	
Calcium dihydroxide	1305-62-0	Singapore PELs	TWA(8 hours):5 mg/m3	
NUC - Titanium Dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3	A3: Confirmed animal carcin.
NUC - Titanium Dioxide	13463-67-7	Singapore PELs	TWA(8 hours):10 mg/m3	

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	Solid.
Specific Physical Form:	Paste
Color	Tooth
Odor	Slight Acrylic
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*No data available.*

Boiling point/Initial boiling point/Boiling range	*No data available.*
Flash point	No flash point
Evaporation rate	*No data available.*
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	2 g/cm3 - 2.2 g/cm3
Relative density	2 - 2.2 [*Ref Std:*WATER=1]
Water solubility	Nil
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	*No data available.*
Percent volatile	*No data available.*
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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
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
This product may have a characteristic odour; however, no adverse health effects are anticipated.

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

Eye contact
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

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

Additional Health Effects:

Carcinogenicity:
Exposures needed to cause the following health effect(s) are not expected during normal, intended use:
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 >2,000 - =5,000 mg/kg
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
SUBSTITUTED DIMETHACRYLATE	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
SUBSTITUTED DIMETHACRYLATE	Ingestion	Rat	LD50 > 17,600 mg/kg
1,12-DODECANE DIMETHYCRYLATE	Dermal	similar compounds	LD50 > 2,000 mg/kg
1,12-DODECANE DIMETHYCRYLATE	Ingestion	similar compounds	LD50 > 2,000 mg/kg
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	Ingestion	Rat	LD50 > 2,000 mg/kg
SILANE TREATED SILICA	Ingestion	Rat	LD50 > 2,000 mg/kg

SILANE TREATED SILICA	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Calcium dihydroxide	Dermal	Rabbit	LD50 > 2,500 mg/kg
Calcium dihydroxide	Ingestion	Rat	LD50 7,340 mg/kg
Sodium toluene-4-sulphinate	Ingestion	Rat	LD50 > 2,000 mg/kg
Sodium toluene-4-sulphinate	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Ingestion	Rat	LD50 > 1,600 mg/kg
NUC - Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
NUC - Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
NUC - Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	Professional judgement	No significant irritation
SUBSTITUTED DIMETHACRYLATE	Rabbit	No significant irritation
1,12-DODECANE DIMETHYCRYLATE	similar compounds	No significant irritation
SILANE TREATED SILICA	Rabbit	No significant irritation
Calcium dihydroxide	Human	Corrosive
Sodium toluene-4-sulphinate	In vitro data	No significant irritation
NUC - Titanium Dioxide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	Professional judgement	No significant irritation
SUBSTITUTED DIMETHACRYLATE	Rabbit	Mild irritant
1,12-DODECANE DIMETHYCRYLATE	similar compounds	Mild irritant
SILANE TREATED SILICA	Rabbit	No significant irritation
Calcium dihydroxide	Rabbit	Corrosive
Sodium toluene-4-sulphinate	In vitro data	Severe irritant
NUC - Titanium Dioxide	Rabbit	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
SUBSTITUTED DIMETHACRYLATE	Guinea pig	Not classified
1,12-DODECANE DIMETHYCRYLATE	similar compoun	Sensitising

	ds	
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	Mouse	Not classified
SILANE TREATED SILICA	Guinea pig	Not classified
Sodium toluene-4-sulphinate	In vitro data	Not classified
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Professional judgement	Sensitising
NUC - Titanium Dioxide	Human and animal	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
SUBSTITUTED DIMETHACRYLATE	In Vitro	Not mutagenic
1,12-DODECANE DIMETHYCRYLATE	In Vitro	Not mutagenic
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	In Vitro	Not mutagenic
SILANE TREATED SILICA	In Vitro	Not mutagenic
Sodium toluene-4-sulphinate	In Vitro	Not mutagenic
NUC - Titanium Dioxide	In Vitro	Not mutagenic
NUC - Titanium Dioxide	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
NUC - Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
NUC - Titanium Dioxide	Inhalation	Rat	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	Ingestion	nervous system	Not classified	Rat	NOAEL 2,000 mg/kg	
Calcium dihydroxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	LOAEL 2.5 mg/m³	20 minutes
Sodium toluene-4-sulphinate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
SILANE TREATED SILICA	Inhalation	respiratory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.035 mg/l	13 weeks
SILANE TREATED SILICA	Inhalation	hematopoietic system | kidney and/or bladder	Not classified	Rat	NOAEL 0.035 mg/l	13 weeks
SILANE TREATED SILICA	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	5 weeks
NUC - 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
NUC - Titanium Dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure

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 1: Very toxic to aquatic life.

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

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	None	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
SUBSTITUTED DIMETHACRYLATE	27689-12-9	Green algae	Experimental	72 hours	EC50	>100 mg/l
SUBSTITUTED DIMETHACRYLATE	27689-12-9	Water flea	Experimental	48 hours	EC50	>100 mg/l
SUBSTITUTED DIMETHACRYLATE	27689-12-9	Green algae	Experimental	72 hours	NOEC	>100 mg/l
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Green algae	Experimental	72 hours	ErC50	0.017 mg/l

1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Water flea	Experimental	48 hours	EC50	>100 mg/l
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Green algae	Experimental	72 hours	ErC10	0.0064 mg/l
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	945012-02-2	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
SILANE TREATED SILICA	68909-20-6	Algae or other aquatic plants	Estimated	72 hours	EC50	>100 mg/l
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Calcium dihydroxide	1305-62-0	Fathead minnow	Estimated	96 hours	LC50	4,630 mg/l
Calcium dihydroxide	1305-62-0	Green algae	Estimated	72 hours	EC50	>4,000 mg/l
Calcium dihydroxide	1305-62-0	Water flea	Estimated	48 hours	EC50	2,400 mg/l
Sodium toluene-4-sulphinate	824-79-3	Fathead minnow	Estimated	96 hours	LC50	>400 mg/l
Sodium toluene-4-sulphinate	824-79-3	Green algae	Estimated	96 hours	EC50	230 mg/l
Sodium toluene-4-sulphinate	824-79-3	Water flea	Estimated	48 hours	EC50	>400 mg/l
Sodium toluene-4-sulphinate	824-79-3	Green algae	Estimated	96 hours	NOEC	31 mg/l
NUC - Titanium Dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
NUC - Titanium Dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
NUC - Titanium Dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
NUC - Titanium Dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
NUC - 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
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	None	Data not available-insufficient	N/A	N/A	N/A	N/A
SUBSTITUTED DIMETHACRYLATE	27689-12-9	Experimental Biodegradation	28 days	CO2 evolution	7-12 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Experimental Biodegradation	28 days	CO2 evolution	97.3 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
2,4,6(1H,3H,5H)-Pyrimidinetrione,	945012-02-2	Data not available-	N/A	N/A	N/A	N/A

5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)		insufficient				
SILANE TREATED SILICA	68909-20-6	Data not available-insufficient	N/A	N/A	N/A	N/A
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Modeled Biodegradation	28 days	BOD	70 %BOD/ThOD	Catalogic™
Calcium dihydroxide	1305-62-0	Data not available-insufficient	N/A	N/A	N/A	N/A
Sodium toluene-4-sulphinate	824-79-3	Experimental Biodegradation	28 days	BOD	91 %BOD/ThOD	OECD 301C - MITI test (I)
NUC - Titanium Dioxide	13463-67-7	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
Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material	None	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
SUBSTITUTED DIMETHACRYLATE	27689-12-9	Modeled Bioconcentration		Log Kow	7.61	Episuite™
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Modeled Bioconcentration		Bioaccumulation factor	6.6	Catalogic™
1,12-DODECANE DIMETHYCRYLATE	72829-09-5	Experimental Bioconcentration		Log Kow	>6.5	830.7570 Part. Coef by LC
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1)	945012-02-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
SILANE TREATED SILICA	68909-20-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Modeled Bioconcentration		Bioaccumulation factor	3.6	Catalogic™
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Modeled Bioconcentration		Log Kow	1.7	ACD/Labs ChemSketch™
Calcium dihydroxide	1305-62-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Sodium toluene-4-sulphinate	824-79-3	Estimated Bioconcentration		Bioaccumulation factor	3.9	
NUC - Titanium Dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation factor	9.6	

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.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility.

SECTION 14: Transport Information

International Regulations

UN No.: None assigned
UN Proper shipping name: None assigned

Transportation Class (IMO): None assigned
Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: None assigned
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.

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.

3M Singapore SDSs are available at www.3m.com.sg