

Safety Data Sheet

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

Document group: 21-0053-5 **Version number:** 2.00

Issue Date: 18/03/2024 **Supersedes date:** 15/09/2022

IDENTIFICATION

1.1. Product identifier

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Dental liner/base

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:

21-0047-7, 21-0049-3

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

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base

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



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

Document group: 21-0047-7 **Version number:** 3.00

Issue Date: 29/08/2024 **Supersedes date:** 18/03/2024

SECTION 1: Identification

1.1. Product identifier

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base Liquid, Part B

1.2. Recommended use and restrictions on use

Recommended use

Dental product, Liner/base

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.

2.2. Label elements

SIGNAL WORD

WARNING!

Symbols

Exclamation mark |

Pictograms



HAZARD STATEMENTS

H319 Causes serious eye irritation. H317 May cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS

Prevention:

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.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	25948-33-8	40 - 50
Water	7732-18-5	30 - 40
2-HYDROXYETHYL METHACRYLATE (HEMA)	868-77-9	15 - 25
Diphenyliodonium hexafluorophosphate	58109-40-3	< 1
Ethyl acetate	141-78-6	< 5
TETRAHYDROFURAN (THF)	109-99-9	< 0.2

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

No critical symptoms or effects. 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. 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
Carbon monoxide.
Carbon dioxide.

Condition

During combustion.

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. 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

Contain spill. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with 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. 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. Do not get in eyes. Use personal protective equipment (eg. gloves, respirators...) as required.

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
TETRAHYDROFURAN (THF)	109-99-9	ACGIH	TWA:50 ppm;STEL:100 ppm	A3: Confirmed animal
				carcin., Danger of
				cutaneous absorption
TETRAHYDROFURAN (THF)	109-99-9	Singapore PELs	TWA(8 hours):590	
			mg/m3(200 ppm);STEL(15	
			minutes):737 mg/m3(250 ppm)	
Ethyl acetate	141-78-6	ACGIH	TWA:400 ppm	
Ethyl acetate	141-78-6	Singapore PELs	TWA(8 hours):1440	
			mg/m3(400 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:	Liquid.
Color	Yellow
Odor	Slight Acrylate
Odour threshold	No data available.
рН	2.5
Melting point/Freezing point	Not applicable.
Boiling point/Initial boiling point/Boiling range	No data available.
Flash point	> 101.1 °C [Test Method:Closed Cup]
Evaporation rate	No data available.
Flammability	Not applicable.

Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Vapour pressure	<=186,158.4 Pa [@ 55 °C] [Details:MITS data]
Vapor Density and/or Relative Vapor Density	No data available.
Density	1.14 g/ml
Relative density	1.14 [Ref Std:WATER=1]
Water solubility	Complete
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	Not applicable.
Autoignition temperature	Not applicable.
Decomposition temperature	No data available.
Kinematic Viscosity	250 mm ² /sec
Volatile organic compounds (VOC)	Not applicable.
Percent volatile	Not applicable.
VOC less H2O & exempt solvents	Not applicable.

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
None known.

Condition

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

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

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.

Eve contact

Moderate eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion

May be harmful if swallowed.

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

Additional Health Effects:

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Toxicological Data

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	Ingestion	Rat	LD50 > 5,000 mg/kg
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE (HEMA)	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE (HEMA)	Ingestion	Rat	LD50 5,564 mg/kg
Ethyl acetate	Dermal	Rabbit	LD50 > 18,000 mg/kg
Ethyl acetate	Inhalation- Vapor (4 hours)	Rat	LC50 70.5 mg/l
Ethyl acetate	Ingestion	Rat	LD50 5,620 mg/kg
Diphenyliodonium hexafluorophosphate	Ingestion	Rat	LD50 32 mg/kg
TETRAHYDROFURAN (THF)	Dermal	Rat	LD50 > 2,000 mg/kg
TETRAHYDROFURAN (THF)	Inhalation- Vapor (4 hours)	Rat	LC50 54 mg/l
TETRAHYDROFURAN (THF)	Ingestion	Rat	LD50 1,650 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value		
2-HYDROXYETHYL METHACRYLATE (HEMA)	Rabbit	Minimal irritation		
Ethyl acetate	Rabbit	Minimal irritation		
Diphenyliodonium hexafluorophosphate	Rabbit	No significant irritation		
TETRAHYDROFURAN (THF)	Rabbit	Minimal irritation		

Serious Eye Damage/Irritation

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base Liquid, Part B

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE (HEMA)	Rabbit	Moderate irritant
Ethyl acetate	Rabbit	Mild irritant
Diphenyliodonium hexafluorophosphate	Rabbit	Mild irritant
TETRAHYDROFURAN (THF)	Rabbit	Corrosive

Sensitization:

Skin Sensitisation

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE (HEMA)	Human	Sensitising
	and	
	animal	
Ethyl acetate	Guinea	Not classified
	pig	
TETRAHYDROFURAN (THF)	Human	Not classified
	and	
	animal	

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name		Value		
2-HYDROXYETHYL METHACRYLATE (HEMA)	In vivo	Not mutagenic		
2-HYDROXYETHYL METHACRYLATE (HEMA)	In Vitro	Some positive data exist, but the data are not sufficient for classification		
Ethyl acetate	In Vitro	Not mutagenic		
Ethyl acetate	In vivo	Not mutagenic		
Diphenyliodonium hexafluorophosphate	In Vitro	Some positive data exist, but the data are not sufficient for classification		
TETRAHYDROFURAN (THF)	In Vitro	Not mutagenic		
TETRAHYDROFURAN (THF)	In vivo	Not mutagenic		

Carcinogenicity

Name	Route	Species	Value
TETRAHYDROFURAN (THF)	Inhalation	Multiple	Carcinogenic.
		animal	
		species	

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
2-HYDROXYETHYL METHACRYLATE (HEMA)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-HYDROXYETHYL METHACRYLATE (HEMA)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-HYDROXYETHYL METHACRYLATE (HEMA)	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
TETRAHYDROFURAN (THF)	Ingestion	Not classified for female reproduction	Rat	NOAEL 782 mg/kg/day	2 generation
TETRAHYDROFURAN (THF)	Ingestion	Not classified for male reproduction	Rat	NOAEL 782 mg/kg/day	2 generation
TETRAHYDROFURAN (THF)	Ingestion	Not classified for development	Rat	NOAEL 305 mg/kg/day	2 generation

TETRAHYDROFURAN (THF)	Inhalation	Not classified for development	Mouse	NOAEL 1.8	during
				mg/l	gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	Ingestion	nervous system	Not classified	Rat	NOAEL 5,000 mg/kg	
Ethyl acetate	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Ethyl acetate	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Diphenyliodonium hexafluorophosphate	Inhalation	respiratory irritation	Not classified	Not available	Irritation Equivocal	
TETRAHYDROFURAN (THF)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
TETRAHYDROFURAN (THF)	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
TETRAHYDROFURAN (THF)	Inhalation	respiratory system	Not classified	Rabbit	NOAEL 2.9 mg/l	4 hours
TETRAHYDROFURAN (THF)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL 180 mg/kg	not applicable

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	Ingestion	endocrine system hematopoietic system liver	Not classified	Rat	NOAEL 200 mg/kg/day	28 days
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	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
Ethyl acetate	Inhalation	endocrine system liver nervous system	Not classified	Rat	NOAEL 0.043 mg/l	90 days
Ethyl acetate	Inhalation	hematopoietic system	Not classified	Rabbit	LOAEL 16 mg/l	40 days
Ethyl acetate	Ingestion	hematopoietic system liver kidney and/or bladder	Not classified	Rat	NOAEL 3,600 mg/kg/day	90 days
TETRAHYDROFURAN (THF)	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.6 mg/l	12 weeks
TETRAHYDROFURAN (THF)	Inhalation	respiratory system	Not classified	Rat	NOAEL 2.9 mg/l	12 weeks
TETRAHYDROFURAN (THF)	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.6 mg/l	105 weeks
TETRAHYDROFURAN (THF)	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	2 weeks

Aspiration Hazard

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

Page: 8 of 11

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

SECTION 12: Ecological information

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

12.1. Toxicity

Acute aquatic hazard:

Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Туре	Exposure	Test endpoint	Test result
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	25948-33-8	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Turbot	Analogous Compound	96 hours	LC50	833 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Fathead minnow	Experimental	96 hours	LC50	227 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Green algae	Experimental	72 hours	EC50	710 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Water flea	Experimental	48 hours	EC50	380 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Green algae	Experimental	72 hours	NOEC	160 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Water flea	Experimental	21 days	NOEC	24.1 mg/l
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	N/A	Experimental	16 hours	EC0	>3,000 mg/l
2-	868-77-9	N/A	Experimental	18 hours	LD50	<98 mg per kg of bodyweight

HYDROXYETHY L METHACRYLAT E (HEMA)						
	58109-40-3	Water flea	Experimental	48 hours	EC50	9.5 mg/l
Ethyl acetate	141-78-6	Bacteria	Experimental	18 hours	EC10	2,900 mg/l
Ethyl acetate	141-78-6	Fish	Experimental	96 hours	LC50	212.5 mg/l
Ethyl acetate	141-78-6	Invertebrate	Experimental	48 hours	EC50	165 mg/l
Ethyl acetate	141-78-6	Green algae	Experimental	72 hours	NOEC	>100 mg/l
Ethyl acetate	141-78-6	Water flea	Experimental	21 days	NOEC	2.4 mg/l
TETRAHYDROF URAN (THF)	109-99-9	Activated sludge	Experimental	3 hours	IC50	460 mg/l
TETRAHYDROF URAN (THF)	109-99-9	Fathead minnow	Experimental	96 hours	LC50	2,160 mg/l
TETRAHYDROF URAN (THF)	109-99-9	Water flea	Experimental	48 hours	LC50	3,485 mg/l
TETRAHYDROF URAN (THF)	109-99-9	Fathead minnow	Experimental	33 days	NOEC	216 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	25948-33-8	Data not available- insufficient	N/A	N/A	N/A	N/A
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Experimental Biodegradation	28 days	BOD	84 %BOD/COD	OECD 301D - Closed bottle test
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Experimental Hydrolysis		Hydrolytic half-life basic pH	10.9 days (t 1/2)	OECD 111 Hydrolysis func of pH
Diphenyliodonium hexafluorophosphat e	58109-40-3	Data not available-insufficient	N/A	N/A	N/A	N/A
Ethyl acetate	141-78-6	Experimental Biodegradation	14 days	BOD	94 %BOD/ThOD	OECD 301C - MITI test (I)
Ethyl acetate	141-78-6	Experimental Photolysis		Photolytic half-life (in air)	20.0 days (t 1/2)	
TETRAHYDROF URAN (THF)	109-99-9	Experimental Biodegradation	28 days	BOD	39 %BOD/ThOD	

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	25948-33-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2- HYDROXYETHY L METHACRYLAT E (HEMA)	868-77-9	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flsk mtd
Diphenyliodonium hexafluorophosphat		Data not available or insufficient for	N/A	N/A	N/A	N/A

3M™ VitreBond™ Plus Light Cure Glass Ionomer Liner/Base Liquid, Part B

e		classification			
Ethyl acetate	141-78-6	Experimental	Log Kow	0.68	
		Bioconcentration			
TETRAHYDROF	109-99-9	Experimental	Log Kow	0.45	
URAN (THF)		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.

As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Dispose of completely cured (or polymerized) material in a permitted industrial waste 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.: 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.

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

Document group: 21-0049-3 **Version number:** 2.00

Issue Date: 30/05/2025 **Supersedes date:** 15/09/2022

SECTION 1: Identification

1.1. Product identifier

3M[™] VitreBond[™] Plus Light Cure Glass Ionomer Liner/Base Paste, Part A

1.2. Recommended use and restrictions on use

Recommended use

Dental product, Liner/base

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.

2.2. Label elements

SIGNAL WORD

WARNING!

Symbols

Exclamation mark |

Pictograms



HAZARD STATEMENTS

H319 Causes serious eye irritation. H317 May cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS

Prevention:

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 attention.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	10 - 20
Water	7732-18-5	1 - 10
Silane Treated Silica	68909-20-6	< 2
(1-methylethylidene)bis[4,1-	1565-94-2	< 2
phenyleneoxy(2-hydroxy-3,1-propanediyl)]		
bismethacrylate		
N,N-DIMETHYLBENZOCAINE	10287-53-3	< 0.3

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.

Eve 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). Target organ effects following prolonged or repeated exposure.

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base Paste, Part A

Section 11 for additional details.

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

Carbon monoxide.

Condition

During combustion.

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. 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.

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

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. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not get in eyes. Use personal protective equipment (eg. gloves, respirators...) as required.

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

No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

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

Solid.
Paste
Off-White, Yellow
Characteristic Odor
No data available.
Not applicable.
No data available.
Not applicable.
No flash point
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not applicable.
1.9 g/cm3
1.9 [Ref Std:WATER=1]
Negligible
No data available.
Not applicable.
Not applicable.
No data available.
300,000 mm ² /sec
Not applicable.
Negligible
Not applicable.

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3M™ VitreBond™ Plus Light Cure Glass Ionomer Liner/Base Paste, Part A

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

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.

Eve contact

Moderate eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion

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

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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 >5,000 mg/kg
2-Hydroxyethyl Methacrylate (HEMA)	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Rat	LD50 5,564 mg/kg
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Dermal	Professio nal judgeme nt	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
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
N,N-DIMETHYLBENZOCAINE	Dermal	Rat	LD50 > 2,000 mg/kg
N,N-DIMETHYLBENZOCAINE	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name		Value				
2-Hydroxyethyl Methacrylate (HEMA)	Rabbit	Minimal irritation				
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Rabbit	No significant irritation				
Silane Treated Silica	Rabbit	No significant irritation				
N,N-DIMETHYLBENZOCAINE	Rabbit	No significant irritation				

Serious Eye Damage/Irritation

Name	Species	Value
2-Hydroxyethyl Methacrylate (HEMA)	Rabbit	Moderate irritant
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]	In vitro	No significant irritation
bismethacrylate	data	
Silane Treated Silica	Rabbit	No significant irritation
N,N-DIMETHYLBENZOCAINE	Rabbit	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
2-Hydroxyethyl Methacrylate (HEMA)	Human and animal	Sensitising
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Mouse	Not classified
Silane Treated Silica	Guinea pig	Not classified

Dagg. 6 of 11

3MTM VitreBondTM Plus Light Cure Glass Ionomer Liner/Base Paste, Part A

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 (HEMA)	In vivo	Not mutagenic
2-Hydroxyethyl Methacrylate (HEMA)	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
Silane Treated Silica	In Vitro	Not mutagenic
N,N-DIMETHYLBENZOCAINE	In vivo	Not mutagenic
N,N-DIMETHYLBENZOCAINE	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

For the component/components, either no data are currently available or 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 (HEMA)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-Hydroxyethyl Methacrylate (HEMA)	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
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
N,N-DIMETHYLBENZOCAINE	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
N,N-DIMETHYLBENZOCAINE	Ingestion	Not classified for development	Rat	NOAEL 50 mg/kg/day	premating into lactation
N,N-DIMETHYLBENZOCAINE	Ingestion	Toxic to male reproduction	Rat	NOAEL 50 mg/kg/day	53 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

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

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure
						Duration
(1-	Ingestion	endocrine system	Not classified	Rat	NOAEL	90 days
methylethylidene)bis[4,1-		hematopoietic			1,000	
phenyleneoxy(2-hydroxy-		system liver heart			mg/kg/day	
3,1-propanediyl)]		skin				
bismethacrylate		gastrointestinal tract				

		bone, teeth, nails, and/or hair immune system muscles nervous system eyes kidney and/or bladder respiratory system vascular system				
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
N,N- DIMETHYLBENZOCAI NE	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 74 mg/kg/day	28 days
N,N- DIMETHYLBENZOCAI NE	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

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:

Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Туре	Exposure	Test endpoint	Test result
2-Hydroxyethyl	868-77-9	Turbot	Analogous	96 hours	LC50	833 mg/l
Methacrylate			Compound			
(HEMA)						

0.77.1	0.60 55.0	In a s	In	0.61	lx ago	loog "
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Fathead minnow	Experimental	96 hours	LC50	227 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Green algae	Experimental	72 hours	EC50	710 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Water flea	Experimental	48 hours	EC50	380 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Green algae	Experimental	72 hours	NOEC	160 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Water flea	Experimental	21 days	NOEC	24.1 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	N/A	Experimental	16 hours	EC0	>3,000 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	N/A	Experimental	18 hours	LD50	<98 mg per kg of bodyweight
(1- methylethylidene)b is[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 is[4,1- phenyleneoxy(2- hydroxy-3,1- propanediyl)] bismethacrylate	1565-94-2	Green algae	Endpoint not reached	96 hours	EC50	>100 mg/l
(1- methylethylidene)b is[4,1- phenyleneoxy(2- hydroxy-3,1- propanediyl)] bismethacrylate	1565-94-2	Green algae	Experimental	96 hours	EC10	1.1 mg/l
Silane Treated Silica	68909-20-6	Algae or other aquatic plants	Estimated	72 hours	EC50	>100 mg/l
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Green algae	Experimental	72 hours	EL50	2.8 mg/l
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Rainbow trout	Experimental	96 hours	LC50	1.9 mg/l
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Water flea	Experimental	48 hours	EC50	4.5 mg/l
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Green algae	Experimental	72 hours	ErC10	0.71 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Hydroxyethyl	868-77-9	Experimental	28 days	BOD	84 %BOD/COD	OECD 301D - Closed bottle

Page: 9 of 11

Methacrylate (HEMA)		Biodegradation				test
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Experimental Hydrolysis		Hydrolytic half-life basic pH	, , ,	OECD 111 Hydrolysis func of pH
(1- methylethylidene)b is[4,1- phenyleneoxy(2- hydroxy-3,1- propanediyl)] bismethacrylate	1565-94-2	Experimental Biodegradation	28 days	BOD	21 %BOD/ThOD	similar to OECD 301F
(1- methylethylidene)b is[4,1- phenyleneoxy(2- hydroxy-3,1- propanediyl)] bismethacrylate	1565-94-2	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	29 days (t 1/2)	
Silane Treated Silica	68909-20-6	Data not available- insufficient	N/A	N/A	N/A	N/A
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Experimental Biodegradation	28 days	CO2 evolution	40 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flsk mtd
(1- methylethylidene)b is[4,1- phenyleneoxy(2- hydroxy-3,1- propanediyl)] bismethacrylate	1565-94-2	Experimental Bioconcentration		Log Kow	4.63	
Silane Treated Silica	68909-20-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
N,N- DIMETHYLBENZ OCAINE	10287-53-3	Experimental Bioconcentration		Log Kow	3.2	OECD 117 log Kow HPLC method

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 completely cured (or polymerized) 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 polymerized may be placed in a landfill properly designed for industrial waste.

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.

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.

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