



## Safety Data Sheet

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<b>Document group:</b>	11-9681-5	<b>Version number:</b>	4.00
<b>Issue Date:</b>	26/07/2020	<b>Supersedes date:</b>	25/09/2015

This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

### SECTION 1: Identification

#### 1.1. Product identifier

Transbond™ LR Light Cure Adhesive (712-038)

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Orthodontic use

#### 1.3. Supplier's details

**Address:** 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113  
**Telephone:** 136 136  
**E Mail:** productinfo.au@mmm.com  
**Website:** www.3m.com.au

#### 1.4. Emergency telephone number

EMERGENCY: 1800 097 146 (Australia only)

### SECTION 2: Hazard identification

This product is classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

#### 2.1. Classification of the substance or mixture

Skin Sensitizer: Category 1.

#### 2.2. Label elements

The label elements below were prepared in accordance with the Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals (Safe Work Australia, December 2011). This information may be different from the actual product label.

##### Signal word

WARNING!

##### Symbols

Exclamation mark |

**Pictograms**



**Hazard statements**

H317 May cause an allergic skin reaction.

**Precautionary statements**

**Prevention:**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P280E Wear protective gloves.  
 P272 Contaminated work clothing should not be allowed out of the workplace.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P363 Wash contaminated clothing before reuse.

**Disposal:**

P501 Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Other assigned/identified product hazards**

None known.

**2.4. Other hazards which do not result in classification**

None known.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	100402-78-6	75 - 85
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	5 - 15
Triethylene Glycol Dimethacrylate	109-16-0	< 10
Dichlorodimethylsilane Reaction Product with Silica	68611-44-9	< 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**

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**

<u>Substance</u>	<u>Condition</u>
Carbon monoxide.	During combustion.
Carbon dioxide.	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**

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 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.

#### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

## 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.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

##### 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
Colour	Off-White
Odour	Slight Acrylate
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>No data available.</i>
Boiling point/Initial boiling point/Boiling range	<i>Not applicable.</i>
Flash point	No flash point
Evaporation rate	<i>Not applicable.</i>
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Vapour pressure	<i>Not applicable.</i>

<b>Vapor Density and/or Relative Vapor Density</b>	<i>Not applicable.</i>
<b>Density</b>	<i>No data available.</i>
<b>Relative density</b>	Approximately 1.95 [Ref Std: WATER=1]
<b>Water solubility</b>	Nil
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>No data available.</i>
<b>Autoignition temperature</b>	<i>No data available.</i>
<b>Decomposition temperature</b>	<i>No data available.</i>
<b>Viscosity/Kinematic Viscosity</b>	<i>Not applicable.</i>
<b>Volatile organic compounds (VOC)</b>	<i>No data available.</i>
<b>Percent volatile</b>	<i>No data available.</i>
<b>VOC less H2O &amp; exempt solvents</b>	<i>No data available.</i>

#### Nanoparticles

This material contains nanoparticles.

## 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. Conditions to avoid

Light.

### 10.4. Possibility of hazardous reactions

Hazardous polymerisation will not occur.

### 10.5 Incompatible materials

None known.

### 10.6 Hazardous decomposition products

#### Substance

#### Condition

None known.

## 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.

**Transbond™ LR Light Cure Adhesive (712-038)****Skin contact**

Contact with the skin during product use is not expected to result in significant irritation. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye contact**

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

**Ingestion**

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 >5,000 mg/kg
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	Dermal		LD50 estimated to be > 5,000 mg/kg
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	Ingestion		LD50 estimated to be > 5,000 mg/kg
Bisphenol A Diglycidyl Ether Dimethacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Bisphenol A Diglycidyl Ether Dimethacrylate	Ingestion	Rat	LD50 > 11,700 mg/kg
Triethylene Glycol Dimethacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Triethylene Glycol Dimethacrylate	Ingestion	Rat	LD50 10,837 mg/kg
Dichlorodimethylsilane Reaction Product with Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dichlorodimethylsilane Reaction Product with Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Dichlorodimethylsilane Reaction Product with Silica	Ingestion	Rat	LD50 > 5,110 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	Professional judgement	No significant irritation
Bisphenol A Diglycidyl Ether Dimethacrylate	Rabbit	No significant irritation
Triethylene Glycol Dimethacrylate	Guinea pig	Mild irritant
Dichlorodimethylsilane Reaction Product with Silica	Rabbit	No significant irritation

### Serious Eye Damage/Irritation

Name	Species	Value
Bisphenol A Diglycidyl Ether Dimethacrylate	In vitro data	No significant irritation
Triethylene Glycol Dimethacrylate	Professional judgement	Moderate irritant
Dichlorodimethylsilane Reaction Product with Silica	Rabbit	No significant irritation

### Skin Sensitisation

Name	Species	Value
Bisphenol A Diglycidyl Ether Dimethacrylate	Mouse	Not classified
Triethylene Glycol Dimethacrylate	Human and animal	Sensitising
Dichlorodimethylsilane Reaction Product with Silica	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
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	In Vitro	Some positive data exist, but the data are not sufficient for classification
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	In vivo	Some positive data exist, but the data are not sufficient for classification
Bisphenol A Diglycidyl Ether Dimethacrylate	In Vitro	Not mutagenic
Triethylene Glycol Dimethacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dichlorodimethylsilane Reaction Product with Silica	In Vitro	Not mutagenic

### Carcinogenicity

Name	Route	Species	Value
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	Inhalation	Human and animal	Carcinogenic.
Triethylene Glycol Dimethacrylate	Dermal	Mouse	Not carcinogenic
Dichlorodimethylsilane Reaction Product with Silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Bisphenol A Diglycidyl Ether Dimethacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Triethylene Glycol Dimethacrylate	Ingestion	Not classified for female reproduction	Mouse	NOAEL 1 mg/kg/day	1 generation
Triethylene Glycol Dimethacrylate	Ingestion	Not classified for male reproduction	Mouse	NOAEL 1 mg/kg/day	1 generation
Triethylene Glycol Dimethacrylate	Ingestion	Not classified for development	Mouse	NOAEL 1 mg/kg/day	1 generation

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Dichlorodimethylsilane Reaction Product with Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Dichlorodimethylsilane Reaction Product with Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Dichlorodimethylsilane Reaction Product with Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

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
2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, reaction products with quartz, bulk material	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Bisphenol A Diglycidyl Ether Dimethacrylate	Ingestion	endocrine system   hematopoietic system   liver   heart   skin   gastrointestinal tract   bone, teeth, nails, and/or hair   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
Triethylene Glycol Dimethacrylate	Dermal	kidney and/or bladder   blood	Not classified	Mouse	NOAEL 833 mg/kg/day	78 weeks
Dichlorodimethylsilane Reaction Product with Silica	Inhalation	respiratory system   silicosis	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.

**Exposure Levels**

Refer Section 8.1 Control Parameters of this Safety Data Sheet.



**Interactive Effects**

Not determined.

**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 Number	Organism	Type	Exposure	Test endpoint	Test result
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Green Algae	Endpoint not reached	96 hours		>100 mg/l
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Water flea	Endpoint not reached	48 hours		>100 mg/l
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Common Carp	Estimated	96 hours	No tox obs at lmt of water sol	>100 mg/l
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Green Algae	Experimental	96 hours	Effect Concentration 10%	1.1 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Green Algae	Experimental	72 hours	EC50	>100 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Zebra Fish	Experimental	96 hours	LC50	16.4 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Green algae	Experimental	72 hours	NOEC	18.6 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Water flea	Experimental	21 days	NOEC	32 mg/l
Dichlorodimethylsilane Reaction Product with Silica	68611-44-9		Data not available or insufficient for classification			

**Transbond™ LR Light Cure Adhesive (712-038)****12.2. Persistence and degradability**

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Experimental Biodegradation	28 days	BOD	21 % BOD/ThBOD	similar to OECD 301F
Triethylene Glycol Dimethacrylate	109-16-0	Experimental Biodegradation	28 days	CO2 evolution	85 % weight	OECD 301B - Modified sturm or CO2
Dichlorodimethylsilane Reaction Product with Silica	68611-44-9	Data not available-insufficient			n/a	

**12.3 : Bioaccumulative potential**

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Bisphenol A Diglycidyl Ether Dimethacrylate	1565-94-2	Experimental Bioconcentration		Log Kow	4.63	Other methods
Triethylene Glycol Dimethacrylate	109-16-0	Experimental Bioconcentration		Log Kow	2.3	Other methods
Dichlorodimethylsilane Reaction Product with Silica	68611-44-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

**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. Proper destruction may require the use of additional fuel during incineration processes. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste.

**SECTION 14: Transport Information****Australian Dangerous Goods Code (ADG) - Road/Rail Transport**

UN No.: Not applicable.

Proper shipping name: Not applicable.

## Transbond™ LR Light Cure Adhesive (712-038)

**Class/Division:** Not applicable.  
**Sub Risk:** Not applicable.  
**Packing Group:** Not applicable.

**Hazchem Code:** Not applicable  
**IERG:** Not applicable.

### **International Air Transport Association (IATA) - Air Transport**

**UN No.:** Not applicable.  
**Proper shipping name:** Not applicable.  
**Class/Division:** Not applicable.  
**Sub Risk:** Not applicable.  
**Packing Group:** Not applicable.

### **International Maritime Dangerous Goods Code (IMDG)- Marine Transport**

**UN No.:** Not applicable.  
**Proper shipping name:** Not applicable.  
**Class/Division:** Not applicable.  
**Sub Risk:** Not applicable.  
**Packing Group:** Not applicable.  
**Marine Pollutant:** Not applicable.

## SECTION 15: Regulatory information

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

#### **Australian Inventory Status:**

This product is regulated by the Therapeutics Goods Administration and is exempt from compliance with the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

## SECTION 16: Other information

#### **Revision information:**

Complete document review.

**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 Safety 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.

Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

**3M Australia SDSs are available at [www.3m.com.au](http://www.3m.com.au)**