

# Calibra Ceram

Dentsply Sirona Pty Ltd

Chemwatch: 81-5103

Version No: 4.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 01/11/2019

Print Date: 21/11/2019

S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	Calibra Ceram
Synonyms	Calibra Ceram adhesive resin cement
Other means of identification	Not Available

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Dual curing dental luting cement. Use according to manufacturer's directions.
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### Details of the supplier of the safety data sheet

Registered company name	Dentsply Sirona Pty Ltd
Address	11-21 Gilby Road Mount Waverley VIC 3149 Australia
Telephone	1300 55 29 29
Fax	1300 55 31 31
Website	www.dentsplysirona.com.au
Email	clientservices@dentsplysirona.com

### Emergency telephone number

Association / Organisation	Dentsply Sirona Pty Ltd
Emergency telephone numbers	1300 55 29 29
Other emergency telephone numbers	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability	0		0 = Minimum
Toxicity	0		1 = Low
Body Contact	0		2 = Moderate
Reactivity	1		3 = High
Chronic	2		4 = Extreme

Poisons Schedule	Not Applicable
Classification [1]	Serious Eye Damage Category 1, Skin Sensitizer Category 1, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
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SIGNAL WORD	<b>DANGER</b>
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### Hazard statement(s)

H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

### Precautionary statement(s) Prevention

Continued...

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

**Precautionary statement(s) Response**

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see advice on this label).
P363	Wash contaminated clothing before reuse.

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
105883-40-7	<10	<u>urethane dimethacrylate monomer</u>
3290-92-4	<10	<u>trimethylolpropane trimethacrylate</u>
41637-38-1	<10	<u>bisphenol A dimethacrylate, ethoxylated</u>
109-16-0	<10	<u>triethylene glycol dimethacrylate</u>
868-77-9	<10	<u>2-hydroxyethyl methacrylate</u>
1709-71-3	<10	<u>2-hydroxy-3-acryloyloxypropyl methacrylate</u>

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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**Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ The material is not readily combustible under normal conditions.</li> <li>▶ However, it will break down under fire conditions and the organic component may burn.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Heat may cause expansion or decomposition with violent rupture of containers.</li> </ul> <p>Other decomposition products include:</p>

	carbon dioxide (CO <sub>2</sub> ) nitrogen oxides (NO <sub>x</sub> ) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
<b>HAZCHEM</b>	Not Applicable

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Wear impervious gloves and safety goggles.</li> <li>▶ Trowel up/scrape up.</li> </ul>
<b>Major Spills</b>	<p>Minor hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment as required.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Most acrylic monomers have low viscosity therefore pouring, material transfer and processing of these materials do not necessitate heating.</li> <li>▶ Viscous monomers may require heating to facilitate handling. To facilitate product transfer from original containers, product must be heated to no more than 60 deg. C. (140 F.), for not more than 24 hours.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Polymerisation may occur slowly at room temperature.</li> <li>▶ Storage requires stabilising inhibitor content and dissolved oxygen content to be monitored. Refer to manufacturer's recommended levels.</li> <li>▶ <b>DO NOT overfill containers so as to maintain free head space above product.</b></li> <li>▶ Blanketing or sparging with nitrogen or oxygen free gas will deactivate stabiliser.</li> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p>for multifunctional acrylates:</p> <ul style="list-style-type: none"> <li>▶ Avoid exposure to free radical initiators (peroxides, persulfates), iron, rust, oxidisers, and strong acids and strong bases.</li> <li>▶ Avoid heat, flame, sunlight, X-rays or ultra-violet radiation.</li> <li>▶ Storage beyond expiration date, may initiate polymerisation. Polymerisation of large quantities may be violent (even explosive)</li> </ul>

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Not Available

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
triethylene glycol dimethacrylate	Methacrylic acid, diester with triethylene glycol; (Polyester TGM3)	33 mg/m <sup>3</sup>	360 mg/m <sup>3</sup>	2,100 mg/m <sup>3</sup>
2-hydroxyethyl methacrylate	Hydroxyethyl methacrylate, 2-	1.9 mg/m <sup>3</sup>	21 mg/m <sup>3</sup>	1,000 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
urethane dimethacrylate monomer	Not Available	Not Available
trimethylolpropane trimethacrylate	Not Available	Not Available
bisphenol A dimethacrylate, ethoxylated	Not Available	Not Available

triethylene glycol dimethacrylate	Not Available	Not Available
2-hydroxyethyl methacrylate	Not Available	Not Available
2-hydroxy-3-acryloyloxypropyl methacrylate	Not Available	Not Available

**OCCUPATIONAL EXPOSURE BANDING**

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
urethane dimethacrylate monomer	E	≤ 0.01 mg/m <sup>3</sup>
trimethylolpropane trimethacrylate	E	≤ 0.1 ppm
bisphenol A dimethacrylate, ethoxylated	E	≤ 0.1 ppm
triethylene glycol dimethacrylate	E	≤ 0.1 ppm
2-hydroxyethyl methacrylate	E	≤ 0.1 ppm
2-hydroxy-3-acryloyloxypropyl methacrylate	E	≤ 0.1 ppm

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**Exposure controls**

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>						
<b>Personal protection</b>							
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>						
<b>Skin protection</b>	See Hand protection below						
<b>Hands/feet protection</b>	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>General warning: Do NOT use latex gloves! Use only recommended gloves - using the wrong gloves may increase the risk:</p> <table border="1"> <tbody> <tr> <td><b>Exposure condition</b> Short time use; (few minutes less than 0.5 hour) Little physical stress</td> <td>Use of thin nitrile rubber gloves: Nitrile rubber (0.1 mm) Excellent tactility ("feel"), powder-free Disposable Inexpensive Give adequate protection to low molecular weigh acrylic monomers</td> </tr> <tr> <td><b>Exposure condition</b> Medium time use; less than 4 hours Physical stress (opening drums, using tools, etc.)</td> <td>Use of medium thick nitrile rubber gloves Nitrile rubber, NRL (latex) free; &lt;0.45 mm Moderate tactility ("feel"), powder-free Disposable Moderate price Gives adequate protection for most acrylates up to 4 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour</td> </tr> <tr> <td><b>Exposure condition</b> Long time Cleaning operations</td> <td>Nitrile rubber, NRL (latex) free; &gt;0.56 mm low tactility ("feel"), powder free High price Gives adequate protection for most acrylates in combination with commonly used solvents up to 8 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour Avoid use of ketones and acetates in wash-up solutions.</td> </tr> </tbody> </table> <p>Where none of this gloves ensure safe handling (for example in long term handling of acrylates containing high levels of acetates and/ or ketones, use laminated multilayer gloves. Guide to the Classification and Labelling of UV/EB Acrylates Third edition, 231 October 2007 - Cefic</p>	<b>Exposure condition</b> Short time use; (few minutes less than 0.5 hour) Little physical stress	Use of thin nitrile rubber gloves: Nitrile rubber (0.1 mm) Excellent tactility ("feel"), powder-free Disposable Inexpensive Give adequate protection to low molecular weigh acrylic monomers	<b>Exposure condition</b> Medium time use; less than 4 hours Physical stress (opening drums, using tools, etc.)	Use of medium thick nitrile rubber gloves Nitrile rubber, NRL (latex) free; <0.45 mm Moderate tactility ("feel"), powder-free Disposable Moderate price Gives adequate protection for most acrylates up to 4 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour	<b>Exposure condition</b> Long time Cleaning operations	Nitrile rubber, NRL (latex) free; >0.56 mm low tactility ("feel"), powder free High price Gives adequate protection for most acrylates in combination with commonly used solvents up to 8 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour Avoid use of ketones and acetates in wash-up solutions.
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<b>Body protection</b>	See Other protection below						
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> </ul>						

**Respiratory protection**

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	A-AUS / Class1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P2
up to 100	10000	-	A-3 P2
100+			Airline**

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Multi coloured creamy viscous paste; not miscible with water.		
<b>Physical state</b>	Non Slump Paste	<b>Relative density (Water = 1)</b>	1.8-1.9
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	Ingestion may result in nausea, abdominal irritation, pain and vomiting
<b>Skin Contact</b>	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin

	prior to the use of the material and ensure that any external damage is suitably protected.	
<b>Eye</b>	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).	
<b>Chronic</b>	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity.	
<b>Calibra Ceram</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>urethane dimethacrylate monomer</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>trimethylolpropane trimethacrylate</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >3000 mg/kg <sup>[2]</sup> Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) <sup>[1]</sup> Skin (rabbit): 500 mg - mild Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>bisphenol A dimethacrylate, ethoxylated</b>	<b>TOXICITY</b> dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup> Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	<b>IRRITATION</b> Not Available
<b>triethylene glycol dimethacrylate</b>	<b>TOXICITY</b> dermal (mouse) LD50: >2000 mg/kg <sup>[1]</sup> Oral (rat) LD50: 10837 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) <sup>[1]</sup> Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>2-hydroxyethyl methacrylate</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >3000 mg/kg <sup>[2]</sup> Oral (rat) LD50: 5050 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye (rabbit): SEVERE * Eye: adverse effect observed (irritating) <sup>[1]</sup> Skin (rabbit): non-irritating* Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>2-hydroxy-3-acryloyloxypropyl methacrylate</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>URETHANE DIMETHACRYLATE MONOMER</b>	Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.
<b>TRIMETHYLOLPROPANE TRIMETHACRYLATE</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. (SD +/- 2591 mg/kg) ** [American Industrial Hygiene Association]
<b>BISPHENOL A DIMETHACRYLATE, ETHOXYLATED</b>	The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity. Several derivatives of BPA exhibited significant thyroid hormonal activity towards rat pituitary cell line GH3, which releases growth hormone in a thyroid hormone-dependent manner. However, BPA and several other derivatives did not show such activity.
<b>2-HYDROXYETHYL METHACRYLATE</b>	Dermal (rabbit): >5000 mg/kg* Effects persist beyond 21 days
<b>URETHANE DIMETHACRYLATE MONOMER &amp; TRIMETHYLOLPROPANE TRIMETHACRYLATE &amp; BISPHENOL A DIMETHACRYLATE, ETHOXYLATED &amp; TRIETHYLENE GLYCOL DIMETHACRYLATE &amp; 2-HYDROXYETHYL METHACRYLATE &amp; 2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
<b>URETHANE DIMETHACRYLATE MONOMER &amp; BISPHENOL A DIMETHACRYLATE, ETHOXYLATED &amp;</b>	No significant acute toxicological data identified in literature search.

2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE	
URETHANE DIMETHACRYLATE MONOMER & TRIMETHYLOLPROPANE TRIMETHACRYLATE & BISPHENOL A DIMETHACRYLATE, ETHOXYLATED & 2-HYDROXYETHYL METHACRYLATE & 2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE	Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH <sub>2</sub> =CHCOO or CH <sub>2</sub> =C(CH <sub>3</sub> )COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing. This position has now been revised and acrylates and methacrylates are no longer <i>de facto</i> carcinogens.
TRIMETHYLOLPROPANE TRIMETHACRYLATE & BISPHENOL A DIMETHACRYLATE, ETHOXYLATED & TRIETHYLENE GLYCOL DIMETHACRYLATE & 2-HYDROXYETHYL METHACRYLATE & 2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.
TRIMETHYLOLPROPANE TRIMETHACRYLATE & BISPHENOL A DIMETHACRYLATE, ETHOXYLATED & 2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE	UV (ultraviolet) / EB (electron beam) acrylates are generally of low toxicity. UV/EB acrylates are divided into two groups the "stenomeric" and "eurymeric" acrylates. Stenomeric acrylates are usually more hazardous than the eurymeric substances.
TRIMETHYLOLPROPANE TRIMETHACRYLATE & BISPHENOL A DIMETHACRYLATE, ETHOXYLATED & 2-HYDROXYETHYL METHACRYLATE & 2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE	Where no "official" classification for acrylates and methacrylates exists, there have been cautious attempts to create classifications in the absence of contrary evidence. For example Monoalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53 Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Calibra Ceram	Not Available	Not Available	Not Available	Not Available	Not Available
	Not Available	Not Available	Not Available	Not Available	Not Available
urethane dimethacrylate monomer	Not Available	Not Available	Not Available	Not Available	Not Available
	Not Available	Not Available	Not Available	Not Available	Not Available
trimethylolpropane trimethacrylate	LC50	96	Fish	0.731mg/L	3
	EC50	48	Crustacea	>9.22mg/L	2
	NOEC	768	Fish	0.138mg/L	2
bisphenol A dimethacrylate, ethoxylated	LC50	96	Fish	>100mg/L	2
	EC50	48	Crustacea	6mg/L	2

	EC50	72	Algae or other aquatic plants	>100mg/L	2
triethylene glycol dimethacrylate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	16.4mg/L	2
	EC50	72	Algae or other aquatic plants	72.8mg/L	2
	NOEC	72	Algae or other aquatic plants	18.6mg/L	2
2-hydroxyethyl methacrylate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>100mg/L	2
	EC50	48	Crustacea	210mg/L	2
	EC50	72	Algae or other aquatic plants	>1-260mg/L	2
2-hydroxy-3-acryloyloxypropyl methacrylate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

**DO NOT discharge into sewer or waterways.**

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
trimethylolpropane trimethacrylate	HIGH	HIGH
triethylene glycol dimethacrylate	LOW	LOW
2-hydroxyethyl methacrylate	LOW	LOW

#### Bioaccumulative potential

Ingredient	Bioaccumulation
trimethylolpropane trimethacrylate	MEDIUM (LogKOW = 4.39)
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
2-hydroxyethyl methacrylate	LOW (BCF = 1.54)

#### Mobility in soil

Ingredient	Mobility
trimethylolpropane trimethacrylate	LOW (KOC = 7533)
triethylene glycol dimethacrylate	LOW (KOC = 10)
2-hydroxyethyl methacrylate	HIGH (KOC = 1.043)

## SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> Otherwise: <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## SECTION 14 TRANSPORT INFORMATION

#### Labels Required

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

**URETHANE DIMETHACRYLATE MONOMER IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Not Applicable

**TRIMETHYLOLPROPANE TRIMETHACRYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List

Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes

Australia Inventory of Chemical Substances (AICS)

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

**BISPHENOL A DIMETHACRYLATE, ETHOXYLATED IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2

**TRIETHYLENE GLYCOL DIMETHACRYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List

Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes

Australia Inventory of Chemical Substances (AICS)

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

**2-HYDROXYETHYL METHACRYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

**2-HYDROXY-3-ACRYLOYLOXYPROPYL METHACRYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Not Applicable

### National Inventory Status

National Inventory	Status
Australia - AICS	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate)
Canada - DSL	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate)
Canada - NDSL	No (trimethylolpropane trimethacrylate; urethane dimethacrylate monomer; triethylene glycol dimethacrylate; 2-hydroxy-3-acryloyloxypropyl methacrylate; bisphenol A dimethacrylate, ethoxylated; 2-hydroxyethyl methacrylate)
China - IECSC	No (urethane dimethacrylate monomer)
Europe - EINEC / ELINCS / NLP	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate; bisphenol A dimethacrylate, ethoxylated)
Japan - ENCS	No (urethane dimethacrylate monomer; bisphenol A dimethacrylate, ethoxylated)
Korea - KECI	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate)
New Zealand - NZIoC	No (urethane dimethacrylate monomer)
Philippines - PICCS	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate; bisphenol A dimethacrylate, ethoxylated)
USA - TSCA	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate)
Taiwan - TCSI	No (urethane dimethacrylate monomer)
Mexico - INSQ	No (trimethylolpropane trimethacrylate; urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate; bisphenol A dimethacrylate, ethoxylated)
Vietnam - NCI	No (urethane dimethacrylate monomer)
Russia - ARIPS	No (urethane dimethacrylate monomer; 2-hydroxy-3-acryloyloxypropyl methacrylate; bisphenol A dimethacrylate, ethoxylated)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

<b>Revision Date</b>	01/11/2019
<b>Initial Date</b>	05/06/2017

### SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	23/07/2019	Name

4.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
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#### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

#### Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit.  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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