SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Porcelain Bonding Resin

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For RX only

1.3. Supplier

Manufacturer
Bisco, Inc.
1100 W. Irving Park Rd.
Schaumburg, IL 60193
T 1.847.534.6000 - F 1.847.891.5049
sales@bisco.com - www.bisco.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - 24-Hour Hazmat Emergency Communications Center
Domestic: 1-800-424-9300 Outside the U.S.: 1-703-527-3887, collect calls accepted

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Flammable liquids Category 4 H227 Combustible liquid
Skin corrosion/irritation Category 2 H315 Causes skin irritation
Skin sensitization, Category 1 H317 May cause an allergic skin reaction
Specific target organ toxicity (single exposure) Category 3 H336 May cause drowsiness or dizziness

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
Hazard pictograms (GHS-US) : !

Hazard statements (GHS-US) : H227 - Combustible liquid
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) : P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P261 - Avoid breathing vapors
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear eye protection, face protection, protective gloves
P302+P352 - If on skin: Wash with plenty of Wash skin with soap and water
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a doctor, a POISON CENTER if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
Porcelain Bonding Resin
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2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethane Dimethacrylate</td>
<td>Proprietary</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2B, H320,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H336</td>
</tr>
<tr>
<td>BisGMA</td>
<td>1565-94-2</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2B, H320,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1, H317</td>
</tr>
<tr>
<td>Tetrahydrofurfuryl Methacrylate</td>
<td>2455-24-5</td>
<td>10-30</td>
<td>Flam. Liq. 4, H227, Skin Irrit. 2, H315,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319, STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
<tr>
<td>Trimethylolpropane Trimethacrylate</td>
<td>3290-92-4</td>
<td>1-5</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: Call a poison center/doctor/physician if you feel unwell.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects: May cause drowsiness or dizziness.

Symptoms/effects after skin contact: Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact: Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


5.2. Specific hazards arising from the chemical

Fire hazard: Combustible liquid.

Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area. Avoid breathing mist, vapors. Avoid contact with skin and eyes. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Use only outdoors or in a well-ventilated area. Avoid breathing mist, vapors. Avoid contact with skin and eyes. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Hygiene measures: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Control Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethane Dimethacrylate (Proprietary)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Trimethylolpropane Trimethacrylate (3290-92-4)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Tetrahydrofurfuryl Methacrylate (2455-24-5)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BisGMA (1565-94-2)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Protective goggles

Skin and body protection:
Wear suitable protective clothing
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Light yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Acrylic</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7). Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity : Not classified
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Urethane Dimethacrylate (Proprietary)

<table>
<thead>
<tr>
<th></th>
<th>LD50 oral rat</th>
<th>LD50 dermal rat</th>
<th>LD50 dermal rabbit</th>
<th>LC50 inhalation rat (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trimehylolpropane Trimethacrylate (3290-92-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>5660 mg/kg (Rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>LD50 dermal rabbit</th>
<th>ATE US (oral)</th>
<th>ATE US (dermal)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17120 mg/kg (Rabbit)</td>
<td>5660 mg/kg body weight</td>
<td>17120 mg/kg body weight</td>
</tr>
</tbody>
</table>

### Skin corrosion/irritation
Causes skin irritation.

### Serious eye damage/irritation
Causes serious eye irritation.

### Respiratory or skin sensitization
May cause an allergic skin reaction.

### Germ cell mutagenicity
Not classified

### Carcinogenicity
Not classified

### Urethane Dimethacrylate (Proprietary)

<table>
<thead>
<tr>
<th></th>
<th>LD50 oral rat</th>
<th>LD50 dermal rabbit</th>
<th>ATUS (oral)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>5660 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>LD50 dermal rabbit</th>
<th>ATE US (dermal)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17120 mg/kg body weight</td>
<td>17120 mg/kg body weight</td>
</tr>
</tbody>
</table>

### Reproductive toxicity
Not classified

### Specific target organ toxicity – single exposure
May cause drowsiness or dizziness.

### Urethane Dimethacrylate (Proprietary)

<table>
<thead>
<tr>
<th></th>
<th>LOAEL (oral, rat)</th>
<th>LOAEL (dermal, rat/rabbit)</th>
<th>LOAEL (inhalation, rat, gas)</th>
<th>LOAEL (inhalation, rat, vapour)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A mg/kg body weight</td>
<td>N/A mg/kg body weight</td>
<td>N/A ppmV/4h</td>
<td>N/A mg/l/4h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific target organ toxicity – repeated exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified</td>
</tr>
</tbody>
</table>

### Aspiration hazard
Not classified

### Symptoms/effects
May cause drowsiness or dizziness.

### Symptoms/effects after skin contact
Irritation. May cause an allergic skin reaction.

### Symptoms/effects after eye contact
Eye irritation.

### SECTiON 12: Ecological information

#### 12.1 Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

### Tetrahydrofurfuryl Methacrylate (2455-24-5)

<table>
<thead>
<tr>
<th></th>
<th>LC50 fish 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34.7 mg/l (LC50; 96 h; Pimephales promelas)</td>
</tr>
</tbody>
</table>

#### 12.2 Persistence and degradability

### Trimethylolpropane Trimethacrylate (3290-92-4)

Persistence and degradability: Not readily biodegradable in water.
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Biodegradability in water: no data available. No (test)data on mobility of the substance available.</th>
</tr>
</thead>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Trimethylolpropane Trimethacrylate (3290-92-4)</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.39</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetrahydrofurfuryl Methacrylate (2455-24-5)</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.3</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not applicable

TDG
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations
Tetrahydrofurfuryl Methacrylate (2455-24-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
No additional information available

EU-Regulations
No additional information available
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National regulations
No additional information available

15.3. US State regulations
No additional information available

SECTION 16: Other information
Revision date : 02/12/2018

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H320</td>
<td>Causes eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.