**SECTION 1: Identification**

1. **Identification**
   - **Product form**: Mixture
   - **Product name**: BisCem Catalyst

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**
     - **Skin corrosion/irritation**
       - Category 2: H315 - Causes skin irritation
     - **Serious eye damage/eye irritation Category 2**
       - H319 - Causes serious eye irritation
     - **Skin sensitization, Category 1**
       - H317 - May cause an allergic skin reaction
   - **Full text of H statements**: see section 16

2.2. **GHS Label elements, including precautionary statements**
   - **GHS-US labeling**
     - **Hazard pictograms (GHS-US)**: ![Exclamation Mark]
     - **Hazard statements (GHS-US)**
       - H315 - Causes skin irritation
       - H317 - May cause an allergic skin reaction
       - H319 - Causes serious eye irritation
     - **Precautionary statements (GHS-US)**
       - P261 - Avoid breathing vapors
       - P264 - Wash hands thoroughly after handling
       - P272 - Contaminated work clothing must not be allowed out of the workplace
       - P280 - Wear Wera protective gloves, eye protection.
       - P302+P352 - If on skin: Wash with plenty of water
       - P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
       - 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
       - P362+P364 - Take off contaminated clothing and wash it before reuse
       - P363 - Wash contaminated clothing before reuse
       - P501 - Dispose in a safe manner in accordance with local/national regulations

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>Bis(2-(Methacryloyloxy)ethyl) Phosphate</td>
<td>(CAS-No.) 32435-46-4</td>
<td>10 - 30</td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate</td>
<td>(CAS-No.) 868-77-9</td>
<td>1 - 5</td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1, H317</td>
</tr>
<tr>
<td>Bis(Glyceryl 1,3 Dimethacrylate) Phosphate</td>
<td>(CAS-No.) 168191-79-5</td>
<td>1 - 5</td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide, technically pure</td>
<td>(CAS-No.) 94-36-0</td>
<td>&lt; 1</td>
<td>Org. Perox. B, H241</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1, H317</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 2, H401</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. Call a poison center/doctor/physician if you feel unwell.
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 after inhalation : May cause respiratory irritation.
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

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.

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: Mechanically recover the product.
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.
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>Substance</th>
<th>CAS Number</th>
<th>Control parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis[2-(Methacryloyloxy)ethyl] Phosphate</td>
<td>(32435-46-4)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate (868-77-9)</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Bis(Glyceryl 1,3 Dimethacrylate) Phosphate</td>
<td>(168191-79-5)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Dibenzoyl Peroxide, technically pure (94-36-0)</td>
<td></td>
<td>ACGIH TWA (mg/m³) 5 mg/m³ (Benzoyl peroxide; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</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

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>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Slightly viscous paste.</td>
</tr>
<tr>
<td>Color</td>
<td>White</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>
</tbody>
</table>
### Melting point
No data available

### Freezing point
Not applicable

### Boiling point
No data available

### Flash point
> 75 °C

### Relative evaporation rate (butyl acetate=1)
No data available

### Flammability (solid, gas)
Non flammable.

### Vapor pressure
No data available

### Relative vapor density at 20 °C
No data available

### Relative density
Not applicable

### Solubility
No data available

### Log Pow
No data available

### Auto-ignition temperature
Not applicable

### Decomposition temperature
No data available

### Viscosity, kinematic
Not applicable

### Viscosity, dynamic
No data available

### Explosion limits
Not applicable

### Explosive properties
No data available

### Oxidizing properties
No data available

#### 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).

### 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

##### 2-Hydroxyethyl Methacrylate (868-77-9)
- LD50 oral rat: 5564 mg/kg body weight (Rat; Experimental value)
- LD50 dermal rabbit: > 5000 mg/kg body weight (Rabbit; Experimental value)
- ATE US: 5564 mg/kg body weight

##### Bis(Glyceril 1,3 Dimethacrylate) Phosphate (168191-79-5)
- LD50 oral rat: N/A
- LD50 dermal rat: N/A
- LD50 dermal rabbit: N/A
- LC50 inhalation rat (ppm): N/A

##### Dibenzoyl Peroxide, technically pure (94-36-0)
- LD50 oral rat: > 5000 mg/kg (Rat)

#### Skin corrosion/irritation
Causes skin irritation.

#### Serious eye damage/irritation
Causes serious eye irritation.
## BisCem Catalyst Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Respiratory or skin sensitization</th>
<th>May cause an allergic skin reaction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bis(Glyceryl 1,3 Dimethacrylate) Phosphate (168191-79-5)</th>
<th>LOAEL (oral, rat)</th>
<th>N/A mg/kg body weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOAEL (dermal, rat/rabbit)</td>
<td>N/A mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, gas)</td>
<td>N/A ppmV/4h</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, vapour)</td>
<td>N/A mg/l/4h</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, dust/mist/fume)</td>
<td>N/A mg/l/4h</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity – repeated exposure**: Not classified

<table>
<thead>
<tr>
<th>Bis(Glyceryl 1,3 Dimethacrylate) Phosphate (168191-79-5)</th>
<th>LOAEL (oral, rat, 90 days)</th>
<th>N/A mg/kg bodyweight/day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOAEL (dermal, rat/rabbit, 90 days)</td>
<td>N/A mg/kg bodyweight/day</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, gas, 90 days)</td>
<td>N/A ppmV/6h/day</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, vapour, 90 days)</td>
<td>N/A mg/l/6h/day</td>
</tr>
<tr>
<td></td>
<td>LOAEC (inhalation, rat, dust/mist/fume, 90 days)</td>
<td>N/A mg/l/6h/day</td>
</tr>
</tbody>
</table>

**Aspiration hazard**: Not classified

**Symptoms/effects after inhalation**: May cause respiratory irritation.

**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.

<table>
<thead>
<tr>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
<th>LC50 fish 1</th>
<th>227 mg/l (LC50; 96 h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>171 mg/l (NOEC; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)</td>
<td></td>
</tr>
<tr>
<td>EC50 Daphnia 2</td>
<td>380 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)</td>
<td></td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
<td>836 mg/l (Ec50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)</td>
<td></td>
</tr>
<tr>
<td>Threshold limit algae 2</td>
<td>345 mg/l (Ec50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)</td>
<td></td>
</tr>
</tbody>
</table>

| Dibenzoyl Peroxide, technically pure (94-36-0) | LC50 fish 1 | 2 mg/l (LC50; 96 h; Poecilia reticulata) |

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibenzoyl Peroxide, technically pure (94-36-0)</td>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water. No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>
12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1: 1.3 - 1.5 (BCF)</td>
<td></td>
</tr>
<tr>
<td>Log Pow: -0.55 - 0.49 (0.42; Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)</td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential: Low potential for bioaccumulation (BCF &lt; 500).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dibenzoyl Peroxide, technically pure (94-36-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow: 3.71 (QSAR; 3.2; Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 22 °C)</td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential: Low potential for bioaccumulation (Log Kow &lt; 4).</td>
<td></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
Other information: No supplementary information available.

TDG

Transport by sea

Air transport

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Bis[2-(Methacryloyloxy)ethyl] Phosphate</th>
<th>(32435-46-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 311/312 Hazard Classes:</td>
<td>Immediate (acute) health hazard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dibenzoyl Peroxide, technically pure (94-36-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Subject to reporting requirements of United States SARA Section 313</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA
No additional information available

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

15.3. US State regulations

Dibenzoyl Peroxide, technically pure (94-36-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information
Revision date : 01/12/2018

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H241</td>
<td>Heating may cause a fire or explosion</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>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic 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.