SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: All-Bond 3 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 847.534.6000 - F 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: H315 - Causes skin irritation
Category 2
Serious eye damage/eye irritation: H319 - Causes serious eye irritation
Category 2
Skin sensitization: H317 - May cause an allergic skin reaction
Category 1
Specific target organ toxicity (single exposure): H335 - May cause respiratory irritation
Category 3
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):
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation

Precautionary statements (GHS-US):
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
P303+P361+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 POISON CENTER, Call a doctor if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P335+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
P403+P405 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
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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>Ytterbium Fluoride</td>
<td>(CAS-No.) 13760-80-0</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
<tr>
<td>BisGMA</td>
<td>(CAS-No.) 1565-94-2</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Skin Sens. 1, H317</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate</td>
<td>(CAS-No.) 868-77-9</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317</td>
</tr>
<tr>
<td>Urethane Dimethacrylate</td>
<td>(CAS-No.) Proprietary</td>
<td>10-30</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H336</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: Take up liquid spill into absorbent material.
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>Control Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethane Dimethacrylate (Proprietary)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ytterbium Fluoride (13760-80-0)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BisGMA (1565-94-2)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate (868-77-9)</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:
Safety glasses

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
Physical state: Liquid
Appearance: Flowable paste.
All-Bond 3 Resin  
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>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).

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

<table>
<thead>
<tr>
<th>Substance</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>Urethane Dimethacrylate (Proprietary)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ytterbium Fluoride (13760-80-0)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Compound</th>
<th>LC50 inhalation rat (ppm)</th>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
<th>LD50 oral rat</th>
<th>LD50 dermal rabbit</th>
<th>ATE US (oral)</th>
<th>Skin corrosion/irritation</th>
<th>Serious eye damage/irritation</th>
<th>Respiratory or skin sensitization</th>
<th>Germ cell mutagenicity</th>
<th>Carcinogenicity</th>
<th>Urethane Dimethacrylate (Proprietary)</th>
<th>Reproductive toxicity</th>
<th>Specific target organ toxicity – single exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ytterbium Fluoride (13760-80-0)</td>
<td>N/A</td>
<td></td>
<td>5564 mg/kg body weight (Rat; Experimental value)</td>
<td>&gt; 5000 mg/kg body weight (Rabbit; Experimental value)</td>
<td>5564 mg/kg body weight</td>
<td>Causes skin irritation.</td>
<td>Causes serious eye irritation.</td>
<td>May cause an allergic skin reaction.</td>
<td>Not classified</td>
<td>Not classified</td>
<td>4 - Probably not carcinogenic to humans</td>
<td>Not classified</td>
<td>May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

### Ytterbium Fluoride (13760-80-0)

<table>
<thead>
<tr>
<th>Compound</th>
<th>LOAEL (oral,rat)</th>
<th>LOAEL (dermal,rat/rabbit)</th>
<th>LOAEC (inhalation,rat,gas)</th>
<th>LOAEC (inhalation,rat,vapour)</th>
<th>LOAEC (inhalation,rat,dust/mist/fume)</th>
<th>Specific target organ toxicity – repeated exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ytterbium Fluoride (13760-80-0)</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>
<td>N/A mg/l/4h</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

### Ytterbium Fluoride (13760-80-0)

<table>
<thead>
<tr>
<th>Compound</th>
<th>LOAEL (oral,rat,90 days)</th>
<th>LOAEL (dermal,rat/rabbit,90 days)</th>
<th>LOAEC (inhalation,rat,gas,90 days)</th>
<th>LOAEC (inhalation,rat,vapour,90 days)</th>
<th>LOAEC (inhalation,rat,dust/mist/fume,90 days)</th>
<th>Aspiration hazard</th>
<th>Symptoms/effects after inhalation</th>
<th>Symptoms/effects after skin contact</th>
<th>Symptoms/effects after eye contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ytterbium Fluoride (13760-80-0)</td>
<td>N/A mg/kg bodyweight/day</td>
<td>N/A mg/kg bodyweight/day</td>
<td>N/A ppmV/6h/day</td>
<td>N/A mg/l/6h/day</td>
<td>N/A mg/l/6h/day</td>
<td>Not classified</td>
<td>May cause respiratory irritation.</td>
<td>Irritation. May cause an allergic skin reaction.</td>
<td>Eye irritation.</td>
</tr>
</tbody>
</table>
All-Bond 3 Resin
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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.

Ytterbium Fluoride (13760-80-0)

EC50 Daphnia 1: 190 mg/l

2-Hydroxyethyl Methacrylate (868-77-9)

LC50 Daphnia 1: 227 mg/l (LC50; 96 h)

EC50 Daphnia 1: 171 mg/l (NOEC; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

EC50 Daphnia 2: 380 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

Threshold limit algae 1: 836 mg/l (EcC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)

Threshold limit algae 2: 345 mg/l (EbC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)

12.2. Persistence and degradability

2-Hydroxyethyl Methacrylate (868-77-9)


12.3. Bioaccumulative potential

2-Hydroxyethyl Methacrylate (868-77-9)

BCF fish 1: 1.3 - 1.5 (BCF)

Log Pow: -0.55 - 0.49 (0.42; Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)

Bioaccumulative potential: Low potential for bioaccumulation (BCF < 500).

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

2-Hydroxyethyl Methacrylate (868-77-9)
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

National regulations
No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date: 12/13/2017

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>
</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.