SECTION 1: Identification

1.1. Identification
Product form : Mixture
Product name : D/E 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 | H227 | Combustible liquid
Skin corrosion/irritation | H315 | Causes skin irritation
Serious eye damage/eye irritation Category 2A | H319 | Causes serious eye irritation
Skin sensitization, Category 1 | H317 | May cause an allergic skin reaction
Specific target organ toxicity (single exposure) | 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 with soap 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 POISON CENTER, a doctor 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

01/30/2018 EN (English US) Page 1
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use carbon dioxide (CO2), foam, nitrogen, sand, dry sand to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
</table>
| BisGMA                        | (CAS-No.) 1565-94-2 | 30-50| Skin Irrit. 2, H315
|                               |                   |      | Eye Irrit. 2B, H320
|                               |                   |      | Skin Sens. 1, H317            |
| 2-Hydroxyethyl Methacrylate   | (CAS-No.) 868-77-9 | 30-50| Skin Irrit. 2, H315
|                               |                   |      | Eye Irrit. 2, H319
|                               |                   |      | Skin Sens. 1, H317            |
| Urethane Dimethacrylate       | (CAS-No.) Proprietary | 30-50| Skin Irrit. 2, H315
|                               |                   |      | Eye Irrit. 2B, H320
|                               |                   |      | STOT SE 3, H336               |

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. No open flames, no sparks, and no smoking. 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. 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: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing mist, vapors. Avoid contact with skin and eyes.

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 in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Control parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Hydroxyethyl Methacrylate (868-77-9)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Urethane Dimethacrylate (Proprietary)</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

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: Viscous liquid.
- Color: Straw
- Odor: Acrylic
- Odor threshold: No data available
- pH: No data available
- Melting point: Not applicable
- Freezing point: No data available
- Boiling point: 150 °C
- Flash point: 75 °C
- Relative evaporation rate (butyl acetate=1): No data available
- Flammability (solid, gas): Not applicable.
- Vapor pressure: No data available
- Relative vapor density at 20 °C: No data available
- Relative density: > 1
- Solubility: No data available
- Log Pow: No data available
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosion limits: No data available
- 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

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

<table>
<thead>
<tr>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5564 mg/kg body weight (Rat; Experimental value)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5000 mg/kg body weight (Rabbit; Experimental value)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>5564 mg/kg body weight</td>
</tr>
</tbody>
</table>
## 1. Identification

**Material:** Urethane Dimethacrylate (Proprietary)

**CAS Number:** 863-44-1

### 1.1. Synonyms
- Polydimethacrylate
- Polyurethane Acrylate
- Polyurethane Dimethacrylate
- Urethane Dimethacrylate
- Urethane Dimethacrylate (Proprietary)

### 1.2. Other Information
- **IARC Group:** 4 - Probably not carcinogenic to humans
- **Reproductive Toxicity:** Not classified
- **Specific Target Organ Toxicity – Single Exposure:** May cause drowsiness or dizziness.

### 1.3. Chemical Structure

### 1.4. Physical and Chemical Properties
- **Molecular Formula:** C₃₆H₅₆O₂
- **Molecular Weight:** 556.83
- **Density:** 1.06 g/cm³
- **Boiling Point:** 280°C
- **Flash Point:** 210°F
- **Solubility:** Soluble in organic solvents

### 1.5. Stability and Reactivity
- **Stability:** Stable under normal conditions
- **Reactivity:** No specific information provided

### 1.6. Hazardous Ingredients
- **Potentially Hazardous Ingredients:** None reported

### 1.7. Fire and Explosion Hazards
- **Fire Extinguishment:** Water雾
- **Flash Point:** 210°F

### 1.8. Health Hazards
- **Acute Hazards:** Skin irritation, eye irritation, respiratory irritation
- **Chronic Hazards:** May cause drowsiness or dizziness

### 1.9. Environmental Hazards
- **Persistence and Degradability:** Readily biodegradable in water. Biodegradability in soil: no data available. Adsorbs into the soil.

### 1.10. Transportation Information
- **Transportation Number:** Not applicable
- **Special Requirements:** None reported

### 1.11. Regulatory Information
- **Regulatory Status:** Not classified for carcinogenicity
- **Overseas Regulation:** Not applicable

### 1.12. Personal Protective Equipment
- **Respiratory Protection:** None required under normal conditions
- **Eye Protection:** None required under normal conditions
- **Skin Protection:** None required under normal conditions
- **Hand Protection:** None required under normal conditions

## 11.2. Biological Activity

### 11.2.1. Toxicity

#### 11.2.1.1. acute toxicity
- **LD₅₀ (oral, rat):** N/A
- **LD₅₀ (dermal, rat):** N/A
- **LD₅₀ (dermal, rabbit):** N/A
- **LC₅₀ (inhalation, rat, ppm):** N/A

#### 11.2.1.2. Skin Corrosion/Irritation
- Causes skin irritation.

#### 11.2.1.3. Serious Eye Damage/Irritation
- Causes serious eye irritation.

#### 11.2.1.4. Respiratory or Skin Sensitization
- May cause an allergic skin reaction.

#### 11.2.1.5. Germ Cell Mutagenicity
- Not classified

#### 11.2.1.6. Carcinogenicity
- Not classified

#### 11.2.1.7. Reproductive Toxicity
- Not classified

#### 11.2.1.8. Specific Target Organ Toxicity – Single Exposure
- May cause drowsiness or dizziness.

#### 11.2.1.9. Specific Target Organ Toxicity – Repeated Exposure
- Not classified

#### 11.2.1.10. Aspiration Hazard
- Not classified

#### 11.2.1.11. Symptoms/Effects
- May cause drowsiness or dizziness.
- Irritation. May cause an allergic skin reaction.
- Eye irritation.

## 11.3. Ecological Information

### 11.3.1. Toxicity

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

#### 11.3.1.1. LC₅₀ Fish
- **LC₅₀ (fish):** 227 mg/l (LC₅₀; 96 h)

#### 11.3.1.2. EC₅₀ Daphnia
- **EC₅₀ (Daphnia sp.)**
  - **EC₅₀ (Daphnia magna; Static system; Fresh water; Experimental value):** 171 mg/l (NOEC; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
  - **EC₅₀ (Daphnia magna; Static system; Fresh water; Experimental value):** 380 mg/l (EC₅₀; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

#### 11.3.1.3. Threshold Limit Algae
- **Threshold Limit Algae:**
  - **Threshold Limit Algae 1:** 345 mg/l (EC₅₀; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)
  - **Threshold Limit Algae 2:** 836 mg/l (EC₅₀; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)

### 11.3.2. Persistence and Degradability

#### 11.3.2.1. Persistence and Degradability
- **Persistence and Degradability:** Readily biodegradable in water. Biodegradability in soil: no data available. Adsorbs into the soil.
## 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>2-Hydroxyethyl Methacrylate (868-77-9)</th>
<th>BCF fish 1</th>
<th>1.3 - 1.5 (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-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</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</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

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: 01/30/2018

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H227</td>
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<td>Causes serious eye irritation</td>
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<tr>
<td>H320</td>
<td>Causes eye 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.