SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
   e-shell 600 clear

1.2. Relevant identified uses of the substance or mixture and uses advised against
   Use of the substance/mixture
   light curing resin for hearing aid devices

1.3. Details of the supplier of the safety data sheet
   Company name: Deltamed GmbH
   Street: Raiffeisenstr. 8a
   Place: D-61169 Friedberg
   Telephone: +49 6031 7283-0
   Telefax: +49 6031 7283-29
   e-mail: info@deltamed.de
   Internet: www.deltamed.de
   Responsible Department: F&E
   Telefax +49 6031 7283-29

1.4. Emergency telephone number:
   Giftinformationszentrum Universitätsklinikum Mainz
   Telefon +49 6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
   Regulation (EC) No. 1272/2008
   Hazard categories:
   Reproductive toxicity: Repr. 1B
   Hazard Statements:
   May cause an allergic skin reaction.
   May damage the unborn child. Suspected of damaging fertility.
   May cause long lasting harmful effects to aquatic life.

2.2. Label elements
   Regulation (EC) No. 1272/2008
   Hazard components for labelling
   Tetrahydrofurfuryl methacrylate (THFMA)
   Urethane dimethacrylate (UDMA)
   Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO)
   Signal word: Danger
   Pictograms:

   Hazard statements
   H317 May cause an allergic skin reaction.
   H360Df May damage the unborn child. Suspected of damaging fertility.
   H413 May cause long lasting harmful effects to aquatic life.

   Precautionary statements
   P201 Obtain special instructions before use.
   P273 Avoid release to the environment.
   P280 Wear protective gloves/protective clothing/eye protection.
   P302+P352 IF ON SKIN: Wash with plenty of soap and water.
   P308+P313 IF exposed or concerned: Get medical advice/attention.
2.3. Other hazards

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acrylic resin</td>
<td>60-80 %</td>
</tr>
<tr>
<td>72869-86-4</td>
<td>Urethane dimethacrylate (UDMA)</td>
<td>5-20 %</td>
</tr>
<tr>
<td>2455-24-5</td>
<td>Tetrahydrofurfuryl methacrylate (THFMA)</td>
<td>10-25 %</td>
</tr>
<tr>
<td>75980-60-8</td>
<td>Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO)</td>
<td>&lt; 1 %</td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**General information**

Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours. Take off all contaminated clothing immediately.

**After inhalation**

Provide fresh air. Medical treatment necessary.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary.

**After contact with eyes**

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

**After ingestion**

Do NOT induce vomiting. Medical treatment necessary.

#### 4.2. Most important symptoms and effects, both acute and delayed

No information available.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
- Foam
- Extinguishing powder
- Carbon dioxide

Unsuitable extinguishing media
- Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon monoxide. Carbon dioxide
Hazardous decomposition products

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information
- Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.
- Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Larger quantities: Take up mechanically (by pumping). Smaller quantities and/or residues: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
- Provide good room ventilation even at ground level (vapours are heavier than air). Keep container tightly closed. If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion
- In the event of fire, cool the endangered containers with water. Keep away from sources of ignition — No smoking. Take precautionary measures against static discharges. When heated above the flash point and/or during spraying (atomizing), ignitible mixtures may form in air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
- Protect from the action of light. Keep only in the original container at a temperature between 5 -30 °C. Can polymerize with intense heat release. Keep container tightly closed.

Advice on storage compatibility
- No special measures are necessary.

7.3. Specific end use(s)

light curing resin for hearing aid devices
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures
Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection
tightly fitting goggles

Hand protection
butyl rubber gloves (0.7 mm), Break through time ca. 60 min (EN 374). Gloves should be replaced regularly, especially after extended contact with the product. For each work-place a suitable glove type has to be selected.

Skin protection
Wear suitable protective clothing.

Respiratory protection
Breathing apparatus in case of high concentrations, short term: filter appliance, filter A In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>various, depending on coloration</td>
</tr>
<tr>
<td>Odour:</td>
<td>characteristic</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>pH-Value:</td>
<td>not determined</td>
</tr>
<tr>
<td>Changes in the physical state</td>
<td></td>
</tr>
<tr>
<td>Melting point:</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point:</td>
<td>&gt; 150 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td></td>
</tr>
<tr>
<td>Solid:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Gas:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Lower explosion limits:</td>
<td>not determined</td>
</tr>
<tr>
<td>Upper explosion limits:</td>
<td>not determined</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
</tr>
<tr>
<td>Solid:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Gas:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>not determined</td>
</tr>
<tr>
<td>Density:</td>
<td>not determined</td>
</tr>
</tbody>
</table>
**Safety Data Sheet**

**e-shell 600 clear**

Revision date: 28.10.2016  
Product code: 1500420  
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**Water solubility:**  
Insoluble

**Solubility in other solvents**  
The substance is not soluble in water.

**Partition coefficient:**  
Not determined

**Viscosity / dynamic (at 20 °C):**  
400 mPa·s

**Vapour density:**  
Not determined

**Evaporation rate:**  
Not determined

**9.2. Other information**

**Solid content:**  
Not determined

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**  
No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**  
The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**  
Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

**10.4. Conditions to avoid**  
Protect from the action of light. Keep only in the original container at a temperature between 5 -30 °C. Can polymerize with intense heat release.

**10.5. Incompatible materials**  
Oxidising agent, Reducing agent, Heavy metals, acids, Alkali (lye)

**10.6. Hazardous decomposition products**  
No known hazardous decomposition products.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Acute toxicity**  
Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>72869-86-4</td>
<td>Urethane dimethacrylate (UDMA)</td>
<td>oral</td>
<td>LD50</td>
<td>&gt;2000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>2455-24-5</td>
<td>Tetrahydrofurfuryl methacrylate (THFMA)</td>
<td>oral</td>
<td>LD50</td>
<td>4000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>75980-60-8</td>
<td>Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO)</td>
<td>oral</td>
<td>LD50</td>
<td>&gt; 5000 mg/kg</td>
<td>Rat</td>
</tr>
</tbody>
</table>

**Irritation and corrosivity**  
Based on available data, the classification criteria are not met.  
May cause mild skin and eye irritation.

**Sensitising effects**
May cause an allergic skin reaction. (Urethane dimethacrylate (UDMA));
(Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO))
Possible sensitization in case of persons suffering from hypersensitivity.

**Carcinogenic/mutagenic/toxic effects for reproduction**
May damage the unborn child. Suspected of damaging fertility. (Tetrahydrofurfuryl methacrylate (THFMA))
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.

**STOT-single exposure**
Based on available data, the classification criteria are not met.

**STOT-repeated exposure**
Based on available data, the classification criteria are not met.
Repeated dose toxicity (Tetrahydrofurfuryl methacrylate (THFMA)) : Rat, oral, OECD 422, NOAEL: 300 mg/kg

**Aspiration hazard**
Based on available data, the classification criteria are not met.

**Additional information on tests**
This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

**Further information**
Product has not been tested. The statement is derived from the properties of the components.

**SECTION 12: Ecological information**

**12.1. Toxicity**
Aquatic toxicity: The classification criteria for this hazard class are not met by definition.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>72869-86-4</td>
<td>Urethane dimethacrylate (UDMA)</td>
<td>LC50</td>
<td>10,1 mg/l</td>
<td>96 h</td>
<td>Brachydanio rerio  (zebra-fish)</td>
<td>OECD 203</td>
</tr>
<tr>
<td>2455-24-5</td>
<td>Tetrahydrofurfuryl methacrylate (THFMA)</td>
<td>LC50</td>
<td>34,7 mg/l</td>
<td>96 h</td>
<td>Pimephales promelas (fathead minnow)</td>
<td></td>
</tr>
<tr>
<td>75980-60-8</td>
<td>Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO)</td>
<td>EC50</td>
<td>3,53 mg/l</td>
<td>48 h</td>
<td>Daphnia</td>
<td></td>
</tr>
</tbody>
</table>

**12.2. Persistence and degradability**
The product has not been tested.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>72869-86-4</td>
<td>Urethane dimethacrylate (UDMA)</td>
<td>Biodegradation</td>
<td>22 %</td>
<td>28</td>
<td>OECD 301 F</td>
</tr>
</tbody>
</table>

**12.3. Bioaccumulative potential**
The product has not been tested.

**12.4. Mobility in soil**
The product has not been tested.

**12.5. Results of PBT and vPvB assessment**
The product has not been tested.

**12.6. Other adverse effects**
No information available.
Further information
Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products
070208 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other still bottoms and reaction residues
Classified as hazardous waste.

Waste disposal number of used product
070208 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other still bottoms and reaction residues
Classified as hazardous waste.

Waste disposal number of contaminated packaging
070208 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other still bottoms and reaction residues
Classified as hazardous waste.

Contaminated packaging
This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)
Other applicable information (land transport)
No dangerous good in sense of these transport regulations.

Inland waterways transport (ADN)
Other applicable information (inland waterways transport)
No dangerous good in sense of these transport regulations.

Marine transport (IMDG)
Other applicable information (marine transport)
No dangerous good in sense of these transport regulations.

Air transport (ICAO-TI/IATA-DGR)
Other applicable information (air transport)
No dangerous good in sense of these transport regulations.

14.6. Special precautions for user
No information available.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
not applicable

SECTION 15: Regulatory information

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

National regulatory information
### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information

**Changes**

Matter of revision: change of Classification

**Abbreviations and acronyms**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service
- LC50: Lethal concentration, 50%
- LD50: Lethal dose, 50%

**Relevant H and EUH statements (number and full text)**

- **H317** May cause an allergic skin reaction.
- **H360Df** May damage the unborn child. Suspected of damaging fertility.
- **H361** Suspected of damaging fertility or the unborn child.
- **H411** Toxic to aquatic life with long lasting effects.
- **H412** Harmful to aquatic life with long lasting effects.
- **H413** May cause long lasting harmful effects to aquatic life.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(\textit{The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor’s safety data sheet.})