1. Identification of the material and supplier

**Names**
- **Product name**: TempSpan® Transparent Temporary Cement - Base
- **ADG**: UN3077
- **Manufacturer**: Pentron Clinical
  1717 West Collins Avenue
  Orange, CA 92867-5422
  Telephone no.: 1-203-265-7397, Toll Free: 1-800-551-0283

**Emergency telephone number**
- CHEMTREC® (24 hours) U.S.: 1-800-424-9300
  International: +1-703-527-3887

**Uses**
- **Area of application**: Professional applications.
- **Material uses**: Dental product (Kit)
- **Product type**: Paste.

2. Hazards identification

**Classification**
- Repr. Cat. 2; R61
- Repr. Cat. 3; R62
- R43
- N; R50/53

**Risk phrases**
- R61- May cause harm to the unborn child.
- R62- Possible risk of impaired fertility.
- R43- May cause sensitisation by skin contact.
- R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases**
- S53- Avoid exposure - obtain special instructions before use.
- S36/37- Wear suitable protective clothing and gloves.
- S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

**Statement of hazardous/dangerous nature**
- HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

Health effects are based on the uncured material.

3. Composition/information on ingredients

**Mixture**
- Yes.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous, fumed, cryst.-free</td>
<td>112945-52-5</td>
<td>10-30</td>
</tr>
<tr>
<td>dibutyl phthalate</td>
<td>84-74-2</td>
<td>&lt;10</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>868-77-9</td>
<td>&lt;10</td>
</tr>
<tr>
<td>triclosan</td>
<td>3380-34-5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>128-37-0</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>

Other ingredients, determined not to be hazardous according to Safe Work Australia criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
4. First-aid measures

First-aid measures

Inhalation: No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

Skin contact: No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.

Eye contact: No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Protection of first-aiders: In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Advice to doctor: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

Extinguishing media

Suitable: In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Not suitable: None known.

Special exposure hazards: In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

No specific fire or explosion hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code: 2Z

6. Accidental release measures

Personal precautions: Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely.

Environmental precautions: Low release. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods for cleaning up

Small spill: Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.
6. Accidental release measures

Large spill: Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

7. Handling and storage

Handling: No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose of in a safe manner.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Combustible liquid: Not applicable.

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Silica, amorphous, fumed, cryst.-free | Safe Work Australia (Australia, 7/2012).  
TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction |
| dibutyl phthalate             | Safe Work Australia (Australia, 4/2013).  
TWA: 5 mg/m³ 8 hours. |
| Butylated hydroxytoluene      | Safe Work Australia (Australia, 4/2013).  
TWA: 10 mg/m³ 8 hours. |

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Exposure controls

Engineering measures: No special measures are required for small quantities under normal and intended conditions of product use.

Hygiene measures: No special measures are required for small quantities under normal and intended conditions of product use.

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory: No special measures are required for small quantities under normal and intended conditions of product use.

Skin: No special measures are required for small quantities under normal and intended conditions of product use.
8. Exposure controls/personal protection

**Environmental exposure controls**: No special measures are required for small quantities under normal and intended conditions of product use.

9. Physical and chemical properties

**Physical state**: Solid. [Paste.]

**Colour**: Various

**Odour**: Fruity.

**Boiling point**: Not available.

**Melting point**: Not available.

**Vapour pressure**: Not available.

**Relative density**: 2.5

**Flash point**: Not available.

**Flammable limits**: Not available.

**Vapour density**: Not available.

**pH**: Not available.

**Viscosity**: Not available.

**Auto-ignition temperature**: Not available.

**Solubility**: Insoluble in the following materials: cold water and hot water.

10. Stability and reactivity

**Chemical stability**: The product is stable.

**Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

**Conditions to avoid**: Keep away from heat. Light.

**Materials to avoid**: Reactive or incompatible with the following materials: oxidizing materials and reducing materials. Peroxide.

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

11. Toxicological information

**Potential acute health effects**

- **Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

- **Ingestion**: No known significant effects or critical hazards.

- **Skin contact**: May cause sensitisation by skin contact.

- **Eye contact**: No known significant effects or critical hazards.

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous, fumed, cryst.-free</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3160 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>dibutyl phthalate</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;25000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate triclosan</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7499 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4230 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>9300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>890 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

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Australia
11. Toxicological information

**Conclusion/Summary**: Based on the criteria of the protocol, this product is considered cytotoxic per ISO 10993-5.

**Potential chronic health effects**

**Chronic toxicity**

**Conclusion/Summary**: Not available.

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>triclosan</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 Percent 24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>48 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>48 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Not available.

**Sensitiser**

**Conclusion/Summary**: Not available.

**Carcinogenicity**

**Conclusion/Summary**: Not available.

**Mutagenicity**

**Conclusion/Summary**: Not available.

**Teratogenicity**

**Conclusion/Summary**: Not available.

**Reproductive toxicity**

**Conclusion/Summary**: Not available.

**Product name**

<table>
<thead>
<tr>
<th>Carcinogenic effects</th>
<th>Mutagenic effects</th>
<th>Developmental effects</th>
<th>Fertility effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibutyl phthalate</td>
<td>-</td>
<td>Repr. Cat. 2; R61</td>
<td>Repr. Cat. 3; R62</td>
</tr>
</tbody>
</table>

**Chronic effects**: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity**: No known significant effects or critical hazards.

**Mutagenicity**: No known significant effects or critical hazards.

**Teratogenicity**: May cause birth defects.

**Developmental effects**: No known significant effects or critical hazards.

**Fertility effects**: May impair fertility, based on animal data.

**Over-exposure signs/symptoms**

**Inhalation**: Adverse symptoms may include the following:
- reduced foetal weight
- increase in foetal deaths
- skeletal malformations

**Ingestion**: Adverse symptoms may include the following:
- reduced foetal weight
- increase in foetal deaths
- skeletal malformations

**Skin**: Adverse symptoms may include the following:
- irritation
- redness
- reduced foetal weight
- increase in foetal deaths
- skeletal malformations

**Eyes**: No specific data.
### 11. Toxicological information

**Target organs**
Contains material which may cause damage to the following organs: kidneys, the nervous system, the reproductive system, liver, gastrointestinal tract, upper respiratory tract, skin, eye, lens or cornea, testes.

### 12. Ecological information

**Ecotoxicity**
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibutyl phthalate</td>
<td>Acute EC50 3.4 μg/l Marine water</td>
<td>Gymnodinium breve</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2990 μg/l Fresh water</td>
<td>Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 480 μg/l Fresh water</td>
<td>Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 210 μg/l Fresh water</td>
<td>Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>Acute LC50 227000 μg/l Fresh water</td>
<td>Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td>triclosan</td>
<td>Acute EC50 0.7 μg/l Fresh water</td>
<td>Scenedesmus subspicatus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 62.5 μg/l Fresh water</td>
<td>Lemna gibba</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.18 ppm Fresh water</td>
<td>Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 0.53 μg/l Fresh water</td>
<td>Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 91.3 μg/l Marine water</td>
<td>Ampelisca abdita</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.25 ppm Fresh water</td>
<td>Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.2 μg/l Fresh water</td>
<td>Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>Chronic NOEC 18 μg/l Fresh water</td>
<td>Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 15.1 μg/l Fresh water</td>
<td>Oncorhynchus mykiss</td>
<td>35 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.77 mg/l Fresh water</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**
Not available.

### Other ecological information

#### Persistence/degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>301C Ready Biodegradability - Modified MITI Test (I)</td>
<td>92 to 100 % - 14 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>&lt;10 % - 20 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**
Not available.

#### Aquatic half-life

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>
TempSpan® Transparent Temporary Cement - Base

12. Ecological information

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibutyl phthalate</td>
<td>4.46</td>
<td>165.96</td>
<td>high</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>0.42</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>triclosan</td>
<td>4.7</td>
<td>4157</td>
<td>high</td>
</tr>
<tr>
<td>Butylated hydroxytoluene</td>
<td>5.1</td>
<td>330 to 1800</td>
<td>high</td>
</tr>
</tbody>
</table>

Other adverse effects: No known significant effects or critical hazards.

13. Disposal considerations

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14. Transport information

International transport regulations

<table>
<thead>
<tr>
<th>Regulation</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG&lt;sup&gt;*&lt;/sup&gt;</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG</td>
<td>UN3077</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (dibutyl phthalate, triclosan)</td>
<td>9</td>
<td>III</td>
<td></td>
<td>The product is not regulated as a dangerous good when transported by road or rail in either an IBC, or in other container types if ≤500 kg. The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hazchem code 2Z</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special provisions 179, 274, 331, 335, AU01</td>
</tr>
<tr>
<td>ADR</td>
<td>UN3077</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (dibutyl phthalate, triclosan)</td>
<td>9</td>
<td>III</td>
<td></td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hazard identification number 90</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limited quantity 5 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special provisions 274, 335, 601</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tunnel code (E)</td>
</tr>
</tbody>
</table>
14. Transport information

<table>
<thead>
<tr>
<th>IMDG</th>
<th>UN3077</th>
<th>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (dibutyl phthalate, triclosan). Marine pollutant (dibutyl phthalate, triclosan)</th>
<th>9</th>
<th>III</th>
<th>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules (EmS) F–A, S–F Special provisions 274, 335, 966, 967</th>
</tr>
</thead>
<tbody>
<tr>
<td>IATA</td>
<td>UN3077</td>
<td>Environmentally hazardous substance, solid, n.o.s. (dibutyl phthalate, triclosan)</td>
<td>9</td>
<td>III</td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Passenger and Cargo Aircraft Quantity limitation: 400 kg Packaging instructions: 966 Cargo Aircraft Only Quantity limitation: 400 kg Packaging instructions: 966 Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y956 Special provisions A97, A158, A179</td>
</tr>
</tbody>
</table>

PG*: Packing group

15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons
Not regulated.

Control of Scheduled Carcinogenic Substances
Australia inventory (AICS) : Not determined.
EU Classification : Repr. Cat. 2; R61 Repr. Cat. 3; R62 R43 N; R50/53

16. Other information

Person who prepared the MSDS : IHS
Date of previous issue : No previous validation.
Date of issue/ Date of revision : 6/17/2014.
Version : 1
16. Other information

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.