Material Safety Data Sheet

Bond-1™ Primer/Adhesive

1. Identification of the material and supplier

Names

Product name : Bond-1™ Primer/Adhesive
ADG : UN1090
Manufacturer : Pentron Clinical
Unit 10, 112-118 Talavera Road
North Ryde, NSW 2113
Australia
Telephone no.: 1 800 643 603
Email general queries: kerraust.orders@sybrondental.com
Email technical queries: peter.green@sybrondental.com

Emergency telephone number : 61 401 690 670 (24 hours)

Uses

Area of application : Professional applications.
Material uses : Dental product: Total-etch bonding system
Product type : Liquid.

2. Hazards identification

Classification : F; R11
Xi; R36/38
R43, R67

Risk phrases : R11- Highly flammable.
R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R67- Vapours may cause drowsiness and dizziness.

Safety phrases : S24- Avoid contact with skin.
S37- Wear suitable gloves.

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>acetone</td>
<td>67-64-1</td>
<td>30-60</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>868-77-9</td>
<td>10-30</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. 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 : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Extinguishing media

Suitable : Use dry chemical, CO₂, water spray (fog) or foam.
Not suitable : Do not use water jet.

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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Highly flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials: carbon dioxide carbon monoxide

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 : 2YE

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 split 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).

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.

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 between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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>
| acetone         | Safe Work Australia (Australia, 4/2013).  
|                 | STEL: 2375 mg/m³ 15 minutes.  
|                 | STEL: 1000 ppm 15 minutes.  
|                 | TWA: 1185 mg/m³ 8 hours.  
|                 | TWA: 500 ppm 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: chemical splash goggles.

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.

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: Liquid. [Clear.]
Colour: Yellowish.
Odour: Acetone-like
Boiling point: Not available.
Melting point: Not available.
Vapour pressure: 24.5 kPa (184 mm Hg) [room temperature]
Flash point: Closed cup: -17.8°C (-0.04°F) [Acetone]
Flammable limits: Not available.
Vapour density: Not available.
Viscosity: Not available.
Auto-ignition temperature: 360°C (680°F)
Solubility: Easily soluble 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, sparks and flame. Initiators. Loss of inhibitor or heat may cause polymerization.
Materials to avoid: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids and alkalis. Amines Ammonia. Chlorinated compounds

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: Vapours may cause drowsiness and dizziness.
Ingestion: Irritating to mouth, throat and stomach.
Skin contact: Irritating to skin. May cause sensitisation by skin contact.
Eye contact: Irritating to eyes.

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>acetone</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>76 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>30000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>&gt;15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5800 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>2-hydroxyethyl methacrylate</td>
<td>LC50 Oral</td>
<td>Rat</td>
<td>76 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Oral</td>
<td>Rat</td>
<td>30000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4230 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

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

Potential chronic health effects
Chronic toxicity
Conclusion/Summary: Not available.

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Australia
11. Toxicological information

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>acetone</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>395 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.

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

No known significant effects or critical hazards.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation

Adverse symptoms may include the following:

- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo

Ingestion

No specific data.

Skin

Adverse symptoms may include the following:

- irritation
- redness

Eyes

Adverse symptoms may include the following:

- irritation
- watering
- redness

Target organs

Contains material which may cause damage to the following organs: blood, kidneys, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.
12. Ecological information

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
</table>
| acetone | Acute EC50 20.565 mg/l Marine water  
Acute LC50 6000000 μg/l Fresh water  
Acute LC50 10000 μg/l Fresh water  
Acute LC50 100 mg/l Fresh water | Algae - Ulva pertusa  
Crustaceans - Gammarus pulex  
Daphnia - Daphnia magna  
Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours  
48 hours  
48 hours  
96 hours |
| 2-hydroxyethyl methacrylate | Acute LC50 227000 μg/l Fresh water | Algae - Ulva pertusa  
Crustaceans - Daphniidae  
Daphnia - Daphnia magna - Neonate  
Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours  
21 days  
21 days  
96 hours |

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>acetone</td>
<td>OECD 301B Ready Biodegradability - CO2 Evolution Test 301C Ready Biodegradability - Modified MITI Test (I)</td>
<td>90.9 % - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>92 to 100 % - 14 days</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

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>acetone</td>
<td>-0.23</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>2-hydroxyethyl methacrylate</td>
<td>0.42</td>
<td>-</td>
<td>low</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*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG</td>
<td>UN1090</td>
<td>ACETONE solution</td>
<td>3</td>
<td>II</td>
<td></td>
<td>Hazchem code 2YE</td>
</tr>
</tbody>
</table>
| ADR        | UN1090    | ACETONE solution     | 3       | II  |       | Hazard identification number 33  
Limited quantity 1 L  
Tunnel code (D/E) |
| IMDG       | UN1090    | ACETONE solution     | 3       | II  |       | Emergency schedules (EmS) F-E, S-D |
| IATA       | UN1090    | Acetone solution     | 3       | II  |       | Passenger and Cargo Aircraft Quantity limitation: 5 L  
Packaging instructions: 353  
Cargo Aircraft Only Quantity limitation: 60 L  
Packaging instructions: 364  
Limited Quantities - Passenger Aircraft Quantity limitation: 1 L  
Packaging instructions: Y341 |

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 : F; R11  
Xi; R36/38  
R43, R67

16. Other information

Person who prepared the MSDS : IHS
Date of previous issue : 10/16/2014.
Date of issue/ Date of revision : No previous validation.
Version : 1

Australia
Indicates information that has changed from previously issued version.

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.