Material Safety Data Sheet
37% Phosphoric Acid Etching Gel

1. Identification of the material and supplier

Names

Product name: 37% Phosphoric Acid Etching Gel
ADG: UN1805
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: Etching gel.
Product type: Gel.

2. Hazards identification

Classification: C; R34
Risk phrases: R34- Causes burns.
Safety phrases: S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Statement of hazardous/dangerous nature: HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

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>Orthophosphoric acid</td>
<td>7664-38-2</td>
<td>30-60</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, cryst.-free</td>
<td>112945-52-5</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

Australia
4. First-aid measures

Inhalation: Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Eye contact: Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing thoroughly with water before reuse. Clean shoes thoroughly before reuse.

Protection of first-aiders: 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: 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 an extinguishing agent suitable for the surrounding fire.
- Not suitable: None known.
- Special exposure hazards: 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.

In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - phosphorus oxides
  - metal oxide/oxides
  - hydrogen.

- 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: 2R
37% Phosphoric Acid Etching Gel

6. Accidental release measures

Personal precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spill material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions: 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).

Methods for cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and storage

Handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Storage: Store between the following temperatures: 20 to 25°C (68 to 77°F). 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. Separate from alkalis. 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.

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthophosphoric acid</td>
<td>Safe Work Australia (Australia, 1/2014).</td>
</tr>
<tr>
<td></td>
<td>STEL: 3 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 1 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, cryst.-free</td>
<td>Safe Work Australia (Australia, 7/2012).</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
</tbody>
</table>

Version: 1   Page: 3/8

Australia
8. Exposure controls/personal protection

**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**: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**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**: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Skin**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Environmental exposure controls**: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

**Physical state**: Liquid. [Gel]

**Colour**: Blue.

**Odour**: Odourless.

**Boiling point**: Not available.

**Melting point**: Not available.

**Vapour pressure**: Not available.

**Density**: 1 g/cm³

**Flash point**: Not available.

**Flammable limits**: Not available.

**Vapour density**: Not available.

**pH**: 1
37% Phosphoric Acid Etching Gel

9. Physical and chemical properties

- **Viscosity**: Not available.
- **Auto-ignition temperature**: Not available.
- **Solubility**: Soluble in the following materials: cold water and hot water.
- **Physical/chemical properties comments**: Solvents: water, ≥60%
  Solid: ≥2%

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**: No specific data.
- **Materials to avoid**: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, metals, acids, alkalis and moisture. Incompatible with peroxides. Amines.
- **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**: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- **Ingestion**: May cause burns to mouth, throat and stomach.
- **Skin contact**: Corrosive to the skin. Causes burns.
- **Eye contact**: Corrosive to eyes. Causes burns.

**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>Orthophosphoric acid</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2740 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1.25 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, cryst.-free</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3160 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Based on analysis and test results, this product is not considered as biocompatible per EN ISO 7405:2008 and EN ISO 10993-1:2009.

**Potential chronic health effects**

**Chronic toxicity**

**Conclusion/Summary**: Not available.

**Irritation/Corrosion**

**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.

Australia
37% Phosphoric Acid Etching Gel

11. Toxicological information

<table>
<thead>
<tr>
<th>Conclusion/Summary</th>
<th>Chronic effects</th>
<th>Carcinogenicity</th>
<th>Mutagenicity</th>
<th>Teratogenicity</th>
<th>Developmental effects</th>
<th>Fertility effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>: Not available.</td>
<td>: No known significant effects or critical hazards.</td>
<td>: No known significant effects or critical hazards.</td>
<td>: No known significant effects or critical hazards.</td>
<td>: No known significant effects or critical hazards.</td>
<td>: No known significant effects or critical hazards.</td>
<td>: No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Over-exposure signs/symptoms

- **Inhalation**: No specific data.
- **Ingestion**: Adverse symptoms may include the following: stomach pains
- **Skin**: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur
- **Eyes**: Adverse symptoms may include the following: pain, watering, redness
- **Target organs**: Contains material which may cause damage to the following organs: gastrointestinal tract, upper respiratory tract, skin, 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>
<tbody>
<tr>
<td>Orthophosphoric acid</td>
<td>Acute EC50 105 ppm Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 60 ppm Fresh water</td>
<td>Fish - Lepomis macrochirus</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Not available.

**Other ecological information**

**Persistence/degradability**

**Conclusion/Summary**: Not available.

**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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**Version**: 1
37% Phosphoric Acid Etching Gel

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>UN1805</td>
<td>PHOSPHORIC ACID, SOLUTION</td>
<td>8</td>
<td>III</td>
<td></td>
<td>Hazchem code 2R</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special provisions 223</td>
</tr>
<tr>
<td>ADR</td>
<td>UN1805</td>
<td>PHOSPHORIC ACID, SOLUTION</td>
<td>8</td>
<td>III</td>
<td></td>
<td>Hazard identification number 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limited quantity 5 L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tunnel code (E)</td>
</tr>
<tr>
<td>IMDG</td>
<td>UN1805</td>
<td>PHOSPHORIC ACID SOLUTION</td>
<td>8</td>
<td>III</td>
<td></td>
<td>Emergency schedules (EmS) F-A, S-B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special provisions 223</td>
</tr>
<tr>
<td>IATA</td>
<td>UN1805</td>
<td>Phosphoric acid, solution</td>
<td>8</td>
<td>III</td>
<td></td>
<td>Passenger and Cargo Aircraft Quantity limitation: 5 L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 852</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cargo Aircraft Only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 60 L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 856</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limited Quantities - Passenger Aircraft</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 1 L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: Y841</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special provisions A3</td>
</tr>
</tbody>
</table>

PG*: Packing group

15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

6

Control of Scheduled Carcinogenic Substances

No listed substance

Australia inventory (AICS) : All components are listed or exempted.
EU Classification : C; R34
16. Other information

Person who prepared the MSDS: IHS
Date of previous issue: No previous validation.
Date of issue/Date of revision: 08/12/2014.
Version: 1

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.