Material Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<table>
<thead>
<tr>
<th>Product Name</th>
<th>HYDROCHLORIC ACID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>500 mL - 90000, 1 L - 90010, 2.5 L - 90020, 5 L - 90030, 20 L - 90040</td>
</tr>
<tr>
<td>Company Name</td>
<td>BONDALL PTY LTD (ABN 27 008 734 996)</td>
</tr>
<tr>
<td>Address</td>
<td>113 Belmont Avenue, Belmont, WA 6104, Australia</td>
</tr>
<tr>
<td>Emergency Tel.</td>
<td>0400 705 773 or Poisons Information Centre: 13 11 26</td>
</tr>
<tr>
<td>Telephone/Fax Number</td>
<td>Tel: (08) 6272 3800, Fax: (08) 9277 4068</td>
</tr>
</tbody>
</table>

2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Classified as hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>HAZARDOUS SUBSTANCE. DANGEROUS GOODS. Hazard classification according to the criteria of NOHSC. Dangerous goods classification according to the Australia Dangerous Goods Code.</td>
</tr>
<tr>
<td>Risk Phrase(s)</td>
<td>Classified as hazardous R34 Causes burns. R37 Irritating to respiratory system.</td>
</tr>
<tr>
<td>Safety Phrase(s)</td>
<td>S25 Avoid contact with eyes. S27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of - (to be specified by the manufacturer). S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S64 If swallowed, rinse mouth with water (only if person is conscious).</td>
</tr>
</tbody>
</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water</td>
<td>7732-18-5</td>
<td>70-74 %</td>
</tr>
<tr>
<td></td>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>26-30 %</td>
</tr>
<tr>
<td></td>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>&lt;1 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>If inhaled, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.</td>
</tr>
<tr>
<td>Skin</td>
<td>Remove all contaminated clothing. Wash gently and thoroughly with water and non-abrasive soap for 15 minutes. Ensure contaminated clothing is washed before re-use or discard. Seek medical attention.</td>
</tr>
<tr>
<td>Eye</td>
<td>If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.</td>
</tr>
<tr>
<td>First Aid Facilities</td>
<td>Eye wash fountain, safety shower and normal washroom facilities.</td>
</tr>
<tr>
<td>Advice to Doctor</td>
<td>Treat symptomatically.</td>
</tr>
<tr>
<td>Other Information</td>
<td>For advice in an emergency, contact a Poisons Information Centre (Phone Australia 13 1126) or a doctor at once.</td>
</tr>
</tbody>
</table>

5. FIRE FIGHTING MEASURES

| Suitable Extinguishing Media | Use carbon dioxide, dry chemical, foam, water fog or water mist. |

Print Date: 22/11/2012

CS: 1.6.21
Material Safety Data Sheet

Product Name: HYDROCHLORIC ACID

Classified as hazardous

Hazards from Combustion Products

This product is non combustible. However heating can cause expansion or decomposition leading to violent rupture of containers.

Hazchem Code: 2R

Precautions in connection with Fire

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Wear appropriate personal protective equipment and clothing to minimise exposure. Increase ventilation. If possible contain the spill. Place inert absorbent material onto spillage. Collect the material and place into a suitable labelled container. Do not dilute material but contain. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Corrosive liquid. Attacks skin and eyes. Causes burns. Wear suitable protective clothing, gloves and eye/face protection when mixing and using. Use in designated areas with adequate ventilation. Avoid breathing in vapours, mist or fumes. Keep containers closed when not in use. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands after handling, and before eating, drinking, smoking or using the toilet facilities.

Conditions for Safe Storage

Store in a cool dry well-ventilated area. Store away from oxidising agents and bases/acids. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Provide a catch-tank in a bunded area. Store in original packages as approved by manufacturer. For information on the design of the storeroom, reference should be made to Australian Standard AS 3780-2008: The storage and handling of corrosive substances. Reference should also be made to all State and Federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure value assigned for this material by Safe Work, Australia. However, the available exposure limits for ingredients are listed below:

Safe Work, Australia Exposure Standards:

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA ppm</th>
<th>STEL mg/m³</th>
<th>NOTICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen chloride</td>
<td>5</td>
<td>7.5</td>
<td>Peak limitation</td>
</tr>
</tbody>
</table>

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Peak Limitation: A ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.

No biological limits allocated.

Biological Limit Values Engineering Controls

Provide sufficient ventilation to keep airborne levels below the exposure limits. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required.
Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable organic vapour filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection
Safety glasses with side shields, goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection
Suitable protective work wear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Clear fuming liquid

Odour
Sharp, irritating pungent acrid hydrogen chloride gas.

Freezing Point
-63 to -27°C

Boiling Point
91 - 98°C

Solubility in Water
Miscible with water

Specific Gravity
1.18

pH Value
<1

Vapour Pressure
11 - 115 at 20°C

Vapour Density (Air=1)
1.26

Colour
Colourless to yellow

Flash Point
Not available

Flammability
Non-combustible liquid

Auto-Ignition Temperature
Not available

Flammable Limits - Lower
Not available

Flammable Limits - Upper
Not available

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions of storage and handling.

Conditions to Avoid
Extremes of temperature, moisture and direct sunlight.

Incompatible Materials
Strong oxidizing agents, alkalis and most metals.

Hazardous Decomposition
Thermal decomposition may result in the release of toxic and/or irritating fumes and gases including carbon monoxide, carbon dioxide and hydrogen chloride.

Products
Contact with metals may liberate hydrogen gas. Contact with oxidizing agents may liberate chlorine gas. Contact with water causes exothermic reaction.

11. TOXICOLOGICAL INFORMATION

Toxicology
Acute toxicity data for product is given below:

Print Date: 22/11/2012
Material Safety Data Sheet

Infosafe No™ LQ1TY  Issue Date : November 2012  ISSUED by BONDALL

Product Name: HYDROCHLORIC ACID

1. IDENTIFICATION

Irritating to respiratory system. Inhalation of product vapours will cause irritation of the nose, throat and respiratory system.

Ingestion of this product will cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.

Causes burns. Corrosive to the skin. Skin contact can cause redness, itching, irritation, severe pain and chemical burns with resultant tissue destruction.

Corrosive to eyes - contact can cause corneal burns. Contamination of eyes can result in permanent injury. Eye contact with vapour or liquid will cause stinging, blurring tearing, severe pain and possible permanent eye damage and blindness.

Prolonged or repeated skin contact may cause defatting leading to dermatitis.

Hydrochloric acid is classified by the IARC (International Agency for Research on Cancer) as a group 3 carcinogen. Group 3 - Not classifiable as to its carcinogenicity to humans

Titanium oxide acid is classified by the IARC (International Agency for Research on Cancer) as a group 2B carcinogen. Group 2B - Possibly carcinogenic to humans

LD50 (Rat): 900 mg/kg

LC50 (Rat): 3124 ppm/1h

LC50 (Mouse): 1108 ppm/1h

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways. This product is highly acidic. If large spills occur a water pH drop could be responsible for an environmental effect on aquatic organisms.

Due to the acidic nature of this material, aquatic life can be affected by even small spills. Do not discharge this material into waterways, drains and sewers.

LC50 (Mosquito fish): 282 mg/L/24h

LC50 (Shore crab): 240 mg/L/48h

LC50 (Sand shrimp): 260 mg/L/48h

13. DISPOSAL CONSIDERATIONS

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

This material is classified as Dangerous Goods Class 8 Corrosive Substances according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).

Class 8 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1, Explosives
- Division 4.1, Dangerous When Wet Substances
- Division 5.1, Oxidising substances
- Division 5.2, Organic Peroxides
- Class 6, Toxic or Infectious Substances, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids
- Class 7, Radioactive Substances

and are incompatible with food and food packaging in any quantity. Strong acids must not be loaded in the same freight container or on the same vehicle with strong alkalis. Packing Group I and II acids and alkalis should be considered as strong.

U.N. Number

1789

Proper Shipping Name

HYDROCHLORIC ACID

DG Class

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Material Safety Data Sheet

Product Name: HYDROCHLORIC ACID

Classified as hazardous

Hazchem Code: 2R
Packaging Method: 3.8.8RT8
Packing Group: II
EPG Number: 8A1
IERG Number: 40

15. REGULATORY INFORMATION

Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia.
Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

16. OTHER INFORMATION

MSDS Created: November 2012