MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Scalex
Synonyms: N/A
Chemical Family: Acid
Application: Descaler
Distributed By: Chem-Wipe Industries Ltd.
24 - Hour Emergency Telephone Number (CANUTEC): (613) 996 6666 - Collect Calls Accepted
*666 Cellular Service
Preparation Date of MSDS: Feb 22/10
Prepared By: Chem-Wipe Industries Ltd.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percent</th>
<th>LD50s &amp; LC50s Route &amp; Species:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid 20 BE</td>
<td>31-37</td>
<td>Inhalation LC50 (mouse) 1108 ppm/1H</td>
</tr>
<tr>
<td>CAS #7647-01-0</td>
<td></td>
<td>Inhalation LC50 (rat) 3124 ppm/1H</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: Corrosive. Vapors are moderately irritating to the eyes. May cause permanent eye damage.
Skin Contact: Corrosive. Causes severe burns. May cause ulcers, discoloration, and eczema.
Inhalation: Corrosive to respiratory passages. Causes irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain and coughing. Vapors may cause pulmonary edema.
Ingestion: Corrosive. Causes burns to the mouth, throat and stomach. Causes vomiting, nausea, and diarrhea. May be fatal if swallowed.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing. In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact: Remove contaminated clothing and launder before reuse.
Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.
**Ingestion:**
Do not induce vomiting. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Seek immediate medical attention.

**Notes to Physician:**
Treatment based on sound judgment of physician and individual reactions of patient.

## 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point (°C):</td>
<td>None - will not burn.</td>
</tr>
<tr>
<td>Flash Point Method:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Auto Ignition Temperature (°C):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammable Limits in Air - Lower (%):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammable Limits in Air - Upper (%):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Extinguishing Media:</td>
<td>Use extinguishing media appropriate for surrounding fire.</td>
</tr>
<tr>
<td>Special Exposure Hazards:</td>
<td>Reacts with metals to generate flammable hydrogen gas.</td>
</tr>
<tr>
<td>Special Protective Equipment:</td>
<td>Fire fighters should wear full protective clothing, including self-contained breathing equipment.</td>
</tr>
<tr>
<td>HMIS Ratings for this product are:</td>
<td>HEALTH 3, FLAMMABILITY 0, REACTIVITY 1</td>
</tr>
</tbody>
</table>

## 6. ACCIDENTAL RELEASE MEASURES

| Procedure for Clean Up:                     | Isolate spill and stop leak where safe. Isolate hazard area and restrict access. Ventilate area. Neutralize with lime slurry, limestone, or soda ash. Avoid contact with combustible materials. Absorb with an inert dry material and place in an appropriate waste disposal container. |
| Personal Precautionary Measures:           | Wear appropriate protective equipment             |
| Environmental Precautionary Measures:      | Prevent entry into sewers or streams, dike if needed. Consult local authorities. |

## 7. HANDLING AND STORAGE

| Handling:                                   | When diluting, add this product to water in small amounts to avoid spattering. Never add water to this material. Use of non-sparking or explosion proof equipment may be necessary, depending upon the type operation. Empty containers may contain hazardous product residues. Handle and open containers with care |
| Storage:                                   | Store in a cool, dry, well ventilated area, away from heat and ignition sources. Keep away from direct sunlight. Do not reuse containers. Protect against moisture, water and physical damage. Store in accordance with good industrial practices. |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Engineering Controls:                      | Local exhaust ventilation as necessary to maintain exposures to within applicable limits. |
|                                          | If airborne concentrations exceed the Occupational Exposure Limit, use a NIOSH/MSHA approved full face piece respirator with acid gas cartridges. Warning: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. |
| Respiratory Protection:                   |                                             |
| Skin Protection:                          | The selection of personal protective equipment varies depending upon conditions of use. Apron, coveralls and/or other resistant protective clothing. Impervious boots. |
| Eyes:                                     | Chemical goggles; also wear a face shield if splashing hazard exists. |
| Other Personal Protection Data:           | Ensure that eyewash stations and safety showers are proximal to the work-station location. |
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Color: Colorless
Odor: Sharp Pungent
pH: For HCL solutions: 0.1(1.0 N), 1.1 (0.1 N), 2.02 (0.01 N)
Specific Gravity: 1.16
Boiling Point (˚C): 81.111
Freezing Point (˚C): 0
Vapor Pressure: ++1
Vapor Density: +1
% Volatile by Volume: 100%
Evaporation Rate: Slow
Solubility: Not available.
VOCs (lbs/gallon): Not available.
Viscosity: 0.0148 centipoises
Molecular Weight: Not available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Heat. Direct sunlight.
Hazardous Decomposition Products: When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
Additional Information: No additional remark.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: Corrosive. Causes burns to the mouth, throat and stomach. Causes vomiting, nausea, and diarrhea. May be fatal if swallowed.
Shin Contact: Corrosive. Causes severe burns. May cause ulcers, discoloration, and eczema.
Inhalation: Corrosive to respiratory passages. Causes irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain and coughing. Vapors may cause pulmonary edema.
Eye Contact: Corrosive. Vapors are moderately irritating to the eyes. May cause permanent eye damage.
Other:
Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.

Acute Test of Product:

Acute Oral LD50: Not Available
Acute Dermal LD50: Not Available
Acute inhalation LC50: Not Available

Carcinogenicity:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percent</th>
<th>IARC - Group 1 (carcinogenic to humans)</th>
<th>IARC - Group 2A (probably carcinogenic)</th>
<th>IARC - Group 2B (possibly carcinogenic)</th>
<th>IARC - Group 3 (not classified)</th>
<th>IARC - Group 4 (probably not carcinogenic)</th>
</tr>
</thead>
</table>

Hazardous Components:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percent</th>
<th>ACGIH 2000 - Carcinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid 20 BE</td>
<td>31-37</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Carcinogenicity Comment:
Not listed with IARC, NTP, ACGIH or OSHA as a carcinogen.

Genotoxicity:
Not available.

Reproductive / Developmental Toxicity:
Not available.

Teratogenicity:
Not available.

Embryo Toxicity:
Not available.

Mutagenicity:
Not available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percent</th>
<th>Ecotoxicity - Fish Species Data</th>
<th>Acute Crustaceans Toxicity</th>
<th>Ecotoxicity - Freshwater Algae Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid 20 BE</td>
<td>31-37</td>
<td>48 Hr LC50 (bluegill) 3.6 mg/L</td>
<td>Not Available.</td>
<td>Not Available.</td>
</tr>
</tbody>
</table>

Other Information:
This material is expected to be toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:
Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging:
Empty containers should be recycled or disposed of through an approved waste management facility.
14. TRANSPORTATION INFORMATION

TDG (Canada):

TDG Proper Shipping Name: Hydrochloric Acid
Hazard Class: 8 (9.2)
UN Number: 1789
Packaging Group: II
Note: No additional remark.
Marine Pollutant: No.

15. REGULATORY INFORMATION

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.

WHMIS Hazardous Class: D1A VERY TOXIC MATERIALS & CORROSIVE MATERIAL

Symbols:

16. OTHER INFORMATION

Additional Information: This product has been classified in accordance with the hazard criteria of the Canadian controls Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis.

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