



## Section 1: Identification of the Material and Supplier

**Product Name:** Scale Off

**Other Names:** Hydrochloric acid solution containing surfactant.

**Proper shipping name (ADG Code):** Hydrochloric acid 16.5 %

**Recommended use:** As a descaling solution.  
Use as directed on the product label.

**Supplier:** Hunters Products (TAS) Pty. Ltd.,  
A.C.N. 004 601 263

**HEAD OFFICE**  
60 Gleadow Street,  
INVERMAY TAS 7248  
Tel: 03 6331 4755  
Fax: 03 6334 1065

**HOBART OFFICE**  
105 Albert Road,  
MOONAH TAS 7009  
Tel: 03 6228 7955  
Fax: 03 6228 7988

**BURNIE OFFICE**  
22 Pearl Street,  
WIVENHOE TAS 7320  
Tel: 03 6431 9627  
Fax: 03 6432 2083

**Emergency Phone Numbers:**

|                           |               |                              |
|---------------------------|---------------|------------------------------|
| Transport/Fire Emergency: | <b>000</b>    | (Emergency services)         |
| Medical Emergency:        | <b>131126</b> | (Poisons Information Centre) |

## Section 2: Hazards Identification

Classified as hazardous according to criteria of Worksafe Australia.

Dangerous goods.

**Risk Phrases:** R: 23 Toxic by inhalation.  
R: 35 Causes severe burns.

**Safety Phrases:** S: 1/2 Keep locked up and out of the reach of children.  
S: 9 Keep container in a well ventilated place.  
S: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S: 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S: 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## Section 3: Composition/Information on Ingredients

**Ingredients:**

|                      |             |           |
|----------------------|-------------|-----------|
| Hydrochloric acid    | [7647-01-0] | 10 - 30 % |
| Non-ionic surfactant |             | < 10 %    |
| Water                | [7732-18-5] | to 100 %  |

## Section 4: First Aid Measures

**For advice, contact a Poisons Information Centre (Phone 131126) or a doctor.**

**Swallowed:** If swallowed, do NOT induce vomiting.

**Skin:** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

**Eyes:** 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.

**Inhaled:** Remove from exposure, rest and keep warm. Seek medical advice.

**First Aid facilities:**

**Mandatory:** Eye wash. Hand wash basin.

**Recommended:** Emergency shower.

**Advice to Doctor:**

Product is a strong hydrochloric acid solution containing a surfactant. If swallowed, vomiting should not have been induced because of risk of aspiration of strongly acidic froth into the lungs. Toxic by inhalation. Causes severe burns. Contact Poisons Information Centre.

**Aggravated medical conditions:**

No specific information found.

## Section 5: Fire Fighting Measures

**HAZCHEM Code:** 2 R

**Evacuate:** No.

**Extinguishant:** Water fog or fine water spray.

**Risk of violent reaction or explosion:** No.

**Products of combustion:** Hydrogen chloride, water vapour, oxides of carbon.

**Protective Equipment:** Full protective clothing including breathing apparatus and protective gloves.

## Section 6: Accidental Release Measures

**Emergency Procedures:**

Dilute.  
Increase ventilation.

**For large spills:**

Contain spillages with sand or earth. Transfer both liquid and solids to suitable container(s). Treat residues as for small spills.

**For small spills:**

Spills may be neutralised by the liberal application of soda ash or crushed limestone.  
If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise, absorb on inert absorbent and transfer to suitable closed container. Wash site of spillage thoroughly with water and detergent. Ventilate area to dispel any residual vapours.

## Section 7: Handling and Storage

**Precautions for safe handling:**

Avoid contact with skin and eyes.  
Avoid breathing vapours.  
Keep away from other acids, alkalis, metals, oxidising agents, metal salts.  
Prevent exposure to formaldehyde vapours.

**Conditions for safe storage:**

Store in a cool, well ventilated place, out of reach of children. Large quantities should be stored in a bonded dangerous goods store. Store in original container. Keep container tightly closed and out of direct sunlight. Prevent vapours from collecting in enclosed or low lying spaces. Keep away from other acids, alkalis, oxidising agents, metals. Protect from physical damage. Clean up all spills and splashes promptly; avoid secondary accidents.

**Incompatibles:**

Mineral acids, alkalis, concrete, formaldehyde, metals, metal salts, oxidising agents.

## Section 8: Exposure Controls/Personal Protection

**National Exposure Standards:**

**ES-TWA:** Hydrogen chloride 5 ppm, 7.5 mg/m<sup>3</sup>

**ES-STEL:** None assigned by NOHSC.

**ES-PEAK:** Hydrogen chloride 5 ppm, 7.5 mg/m<sup>3</sup>

**Notations:** None.

*[Peak] indicates a ceiling concentration which should not be exceeded, even momentarily.*

**Biological Limit Values:** No data found.

**Engineering Controls:**

Avoid using active metals (such as aluminium, tin, zinc, galvanised iron, mild steel) as materials of construction.  
Protect concrete floors and walls.  
Ensure adequate ventilation (same as outdoors) when using.  
If handling industrial quantities, or if vapour risk exists, consider local mechanical exhaust/extraction to keep airborne contamination as low as possible and at least below the TLV.

**Personal Protective Equipment:**

Avoid contact with skin and eyes. Avoid breathing vapours.  
Personal protection to be selected from those recommended below, as appropriate to mode of use, quantity handled and degree of hazard:-

**Normal Use:**

Eye/face protection  
Gloves, rubber or plastic.

**Industrial Quantities:**

Positive pressure air hood or full face respiratory fitted with acid vapour cartridges  
Face shield, goggles or safety glasses  
Gloves, rubber or plastic  
Plastic apron, sleeves and boots  
Impervious overalls.

## Section 9: Physical and Chemical Properties

|                                   |   |
|-----------------------------------|---|
| Appearance:                       | Clear, colourless to pale yellow, frothing liquid.  |
| Odour:                            | Characteristic pungent odour of hydrochloric acid.<br>Odour threshold: 0.77 ppm.                                |
| pH:                               | < 1   |
| Vapour Pressure:                  | About 12 hPa @ 20 °C  |
| Vapour Density:                   | 1.26 (Air = 1)  |
| Boiling Point:                    | About 106 °C<br>Loses water on boiling to form a constant boiling mixture at 20.2 % hydrogen chloride in water. |
| Melting Point:                    | No data.  |
| Volatiles:                        | > 95 %  |
| Volatile Organic Compounds (VOC): | < 1 %   |
| Evaporation Rate:                 | No data.  |
| Solubilities:                     | Miscible with water in all proportions.   |
| Specific Gravity/Density:         | About 1.1 g/mL @ 20 °C  |
| Flash Point:                      | None.   |
| Flammable Limits:                 | None.   |
| Dust Explosion:                   | Not applicable.   |
| Auto-ignition Temperature:        | No data.  |

**Other Information:**

Strong mineral acid. Reacts vigorously or violently with alkalis. Contact with carbonates or bicarbonates will generate carbon dioxide, a simple asphyxiant. Corrosive to most metals, concrete. Vapour forms a dense fog with ammonia vapours. Incompatible with other mineral acids, oxidising agents, cyanides, sulphides, sulphites. Forms a potent carcinogen on exposure to formaldehyde vapours. Forms a dense fog on exposure to ammonia vapours. May turn yellow on exposure to sunlight, due to the formation of free chlorine.

## Section 10: Stability and Reactivity

- Chemical Stability:** Stable under normal conditions.
- Conditions to Avoid:** Incompatible materials, sunlight.
- Incompatible Materials:** Other mineral acids, alkalis including carbonates and bicarbonates, formaldehyde, metals, metal salts, oxidising agents.
- Hazardous Decomposition Products:** Hydrogen chloride, chlorine.
- Hazardous Reactions:** Reacts vigorously or violently with alkalis. Contact with carbonates or bicarbonates generates carbon dioxide. Corrosive to concrete, most metals. In contact with formaldehyde vapours, hydrogen chloride forms *bis(chloromethyl) ether*, a potent carcinogen.

## Section 11: Toxicological Information

**Health Effects:**

No data available for the mixture. Information presented relates to individual ingredients.

- Acute:**
- Swallowed:** Corrosive. May be fatal. Will cause immediate pain, burns to the mouth, throat, oesophagus and gastrointestinal tract. May cause permanent tissue destruction of the oesophagus and digestive tract. Small quantities are likely to cause gastric upset, nausea, vomiting and diarrhoea. An aspiration risk.
- Skin:** Causes severe burns. Will cause redness, pain and severe skin burns. May cause deep ulcers, and discolour the skin. May be absorbed through the skin in harmful amounts. May cause skin sensitisation.

**Eyes:** Causes severe burns. Vapours will cause severe irritation to the eyes. Liquid will cause severe burns and permanent eye damage. May cause painful sensitisation to light.

**Inhaled:** Corrosive vapours. May cause coughing, choking, inflammation of the nose, throat and upper respiratory tract, sore throat and shortness of breath. May cause tissue damage to the mucous membranes. Severe exposure may cause pulmonary oedema (fluid build-up in the lungs), circulatory failure and death. Aspiration of acidic froth into the lungs during swallowing or vomiting may cause severe tissue damage and pulmonary oedema, which may become a medical emergency. Onset of symptoms may be delayed.

**Chronic:** Repeated or prolonged eye exposure to vapours may result in total loss of vision. Long term exposure to vapours may lead to erosion of the teeth.

|                          |                   |  |
|--------------------------|-------------------|--|
| <b>LD<sub>50</sub> :</b> | Hydrochloric acid | 900 mg/kg oral, rabbit.  |
| <b>LC<sub>50</sub> :</b> | Hydrochloric acid | 3,700 ppm/30 minutes, rat.<br>3,940 mg/kg/30 minutes, mouse.                               |
| <b>LDLo:</b>             | Hydrochloric acid | 2,875 µg/kg oral, human.<br>420 µL/kg oral, woman.   |
| <b>LCLo:</b>             | Hydrochloric acid | 1,300 ppm/30 minutes, human.<br>3,000 ppm/5 minutes, human.<br>75 mg/m <sup>3</sup> human. |
| <b>TCLo:</b>             | Hydrochloric acid | 50 mg/m <sup>3</sup> human.  |

## Section 12: Ecological Information

**Ecotoxicity:** Harmful to aquatic organisms.

**Persistence and degradability:** The surfactant used in this product is not considered to be readily biodegradable.

**Mobility:** Readily transported by water.

**Environmental Fate:** No data.

**Bioaccumulative potential:** No data.

**Other adverse environmental effects:** Also contains a surfactant. Local concentrations may be harmful to aquatic organisms, including fish.

## Section 13: Disposal Considerations

The generator of any wastes from this product is responsible for its proper classification, transport and disposal.

Consult appropriate local and State regulations.

Disposal of acidic materials, particularly to concrete sewer systems, may be regulated by local authorities.

**Disposal methods and containers:**

Do not empty into sewer, unless properly neutralised.  
Avoid using unlined metal containers.

**Special precautions for landfill or incineration:**

Unsuitable for incineration.  
May be unsuitable for landfill sites unless properly neutralised.

## Section 14: Transport Information

|                                      |  |
|--------------------------------------|--|
| <b>UN Number:</b>                    | UN 1789  |
| <b>UN Proper shipping name:</b>      | Hydrochloric acid 16.5 %   |
| <b>Class and subsidiary risk:</b>    | 8 Corrosive.   |
| <b>Packaging group:</b>              | II   |
| <b>Special precautions for user:</b> | Do not store or transport with dangerous goods of classes 1, 4.3, 5.1, 5.2, 6 (cyanides), 7, 8 (alkalis), or foodstuff or foodstuff empties. Dilute spillages. |
| <b>HAZCHEM Code:</b>                 | 2 R  |
| <b>Material for export:</b>          | Regulated.<br>Refer to <b>IMO/IMDG</b> and <b>IATA/ICAO</b> .  |

## Section 15: Regulatory Information

|  |   |
|--|---|
| <b>Poisons (SUSDP):</b>                                    | Schedule 6<br><i>Hydrochloric acid &gt; 10 %</i>                        |
| <b>Dangerous Goods:</b>                                    | Yes. UN 1789 8/II 2 R.  |
| <b>Carcinogen:</b>   | <b>Australia</b> <b>IARC</b> <b>NTP</b> <b>RTECS</b><br>No. No. No. No. |
| <b>Agricultural and Veterinary Chemicals Act:</b>          | Not applicable.   |
| <b>Australian Inventory of Chemical Substances (AICS):</b> | Listed.   |
| <b>Other National/International Regulations:</b>           | No data.  |

## Section 16: Other information

**Date of MSDS update:** May 2008  
Complete review and re-write of all sections.

**Abbreviations:**

NOHSC - National Occupational Health and Safety Commission.  
ACGIH - American Conference of Governmental Industrial Hygienists.  
MAK - Maximum workplace concentration - Germany,  
(*maximale Arbeitsplatzkonzentration*)  
IARC - International Agency for Research on Cancer (France).  
NPT - National Toxicology Program (USA).  
RTECS - Registry of Toxic Effects of Chemical Substances.

**Literature references:**

**Other Available Sources of Data:**

*National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [2011(2003)] - NOHSC.*  
*Australian Dangerous Goods Code.*  
*Standard for the Uniform Scheduling of Drugs and Poisons - AHMAC.*  
*Exposure Standards for Atmospheric Contaminants in the Occupational Environment [1003]- NOHSC.*  
*List of Designated Hazardous Substances [10005] - NOHSC.*  
*Merck Index - Merck Inc.*  
*Sax's Dangerous Properties of Industrial Materials - Lewis.*  
*Handbook of Toxic and Hazardous Chemicals and Carcinogens - Sittig.*  
*Handbook of Reactive Chemical Hazards - Bretherick.*  
*Hawley's Condensed Chemical Dictionary - Wiley Interscience.*  
*AUSREG's Chemical Data Package for PCs - AUSREG Consultancy.*