

## Hydrochloric Acid 32%

Cromag Pty Ltd

Safety Data Sheet according to WHS and ADG requirements

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### Product Identifier

Product name	TelChem Hydrochloric Acid 32% / Sigma Hydrochloric Acid 32%
Chemical Name	Hydrochloric Acid 32%
Synonyms	Muriatic Acid
Proper shipping name	HYDROCHLORIC ACID
Chemical formula	HCl
Other means of identification	Not Available

#### Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses	Acidising of petroleum wells, Boiler scale removal, Chemical intermediate, Food processing, Ore reduction, Pickling and metal cleaning, Alcohol denaturant, pH adjusting of swimming pool water.
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#### Details of the supplier of the safety data sheet

Company Name	Cromag Pty Ltd trading as Telford Industries and Sigma Chemicals
Address	7 Valentine Street Kewdale WA 6105 Australia
Telephone	+61 8 9353 2053
Website	<a href="http://www.telfordindustries.com.au">www.telfordindustries.com.au</a> / <a href="http://www.sigmachemicals.com.au">www.sigmachemicals.com.au</a>
Email	<a href="mailto:info@telfordindustries.com.au">info@telfordindustries.com.au</a> / <a href="mailto:info@sigmachemicals.com.au">info@sigmachemicals.com.au</a>

#### Emergency telephone number

Association/Organisation	Not Available
Emergency telephone numbers	DFES: 000 (HAZMAT EMERGENCIES)
Other Emergency telephone numbers	POISONS: 13 11 26

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.

Poisons Schedule	S6
Classification	Metal Corrosion Category 1, Acute Toxicity (Inhalation) Category 2, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1

#### Label Elements

GHS label elements	
SIGNAL WORD	<b>DANGER</b>



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**Hazard statement(s)**

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.

**Precautionary statement(s) Prevention**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original container.
P284	Wear respiratory protection.

**Precautionary statement(s) Response**

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Precautionary statement(s) Storage**

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

CAS No	% [weight]	Name
7647-01-0	32	hydrochloric acid
7732-18-5	balance	water

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>➤ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>➤ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>➤ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>➤ Transport to hospital or doctor without delay.</li> <li>➤ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>➤ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>➤ Quickly remove all contaminated clothing, including footwear.</li> <li>➤ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>➤ Transport to hospital, or doctor.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>➤ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>➤ Lay patient down. Keep warm and rested.</li> <li>➤ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>➤ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>➤ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>➤ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>➤ Urgent hospital treatment is likely to be needed.</li> <li>➤ If swallowed do NOT induce vomiting.</li> <li>➤ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>➤ Observe the patient carefully.</li> <li>➤ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>➤ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>➤ Transport to hospital or doctor without delay.</li> </ul>

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling. Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

#### INGESTION:

- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

#### SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

#### EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes.
- DO NOT use neutralising agents or any other additives. Several litres of saline are required.
- Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).



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## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing Media

- Water spray or fog
- Foam

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>➤ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>➤ Wear full body protective clothing with breathing apparatus.</li> <li>➤ Prevent, by any means available, spillage from entering drains or water course.</li> <li>➤ Use fire fighting procedures suitable for surrounding area.</li> <li>➤ Do not approach containers suspected to be hot.</li> <li>➤ Cool fire exposed containers with water spray from a protected location.</li> <li>➤ If safe to do so, remove containers from path of fire.</li> <li>➤ Equipment should be thoroughly decontaminated after use.</li> <li>➤ May evolve toxic gases (chlorine) when heated to decomposition.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>➤ Non combustible.</li> <li>➤ Not considered to be a significant fire risk.</li> <li>➤ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.</li> <li>➤ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>➤ May emit corrosive, poisonous fumes. May emit acrid smoke.</li> </ul> <p>Decomposition may produce toxic fumes of: hydrogen chloride</p>
<b>HAZCHEM</b>	2R

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>➤ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>➤ Check regularly for spills and leaks.</li> <li>➤ Clean up all spills immediately.</li> <li>➤ Avoid breathing vapours and contact with skin and eyes.</li> <li>➤ Control personal contact with the substance, by using protective equipment.</li> <li>➤ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>➤ Wipe up.</li> <li>➤ Place in a suitable, labelled container for waste disposal.</li> </ul>										
<b>Major Spills</b>	<p>Chemical Class: acidic compounds, inorganic</p> <p>For release onto land: recommended sorbents listed in order of priority.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">SORBENT TYPE</th> <th style="width: 10%;">RANK</th> <th style="width: 20%;">APPLICATION</th> <th style="width: 20%;">COLLECTION</th> <th style="width: 20%;">LIMITATIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS					
SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS							

LAND SPILL – SMALL				
foamed glass - pillows	1	throw	pitchfork	R, P, DGC, RT
expanded mineral - particulate	2	shovel	shovel	R, I, W, P, DGC
foamed glass - particulate	2	shovel	shovel	R, W, P, DGC
LAND SPILL – MEDIUM				
expanded mineral -particulate	1	blower	skidloader	R, I, W, P, DGC
foamed glass- particulate	2	blower	skidloader	R, W, P, DGC
foamed glass - particulate	3	throw	skidloader	R, W, P, DGC
<p>Legend</p> <p>DGC: Not effective where ground cover is dense  R: Not reusable  I: Not incinerable  P: Effectiveness reduced when rainy  RT: Not effective where terrain is rugged  SS: Not for use within environmentally sensitive sites  W: Effectiveness reduced when windy  Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;  R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988</p> <ul style="list-style-type: none"> <li>➤ Clear area of personnel and move upwind.</li> <li>➤ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>➤ Wear full body protective clothing with breathing apparatus.</li> <li>➤ Prevent, by any means available, spillage from entering drains or water course.</li> <li>➤ Stop leak if safe to do so.</li> <li>➤ Contain spill with sand, earth or vermiculite.</li> <li>➤ Collect recoverable product into labelled containers for recycling.</li> <li>➤ Neutralise/decontaminate residue (see Section 13 for specific agent).</li> <li>➤ Collect solid residues and seal in labelled drums for disposal.</li> <li>➤ Wash area and prevent runoff into drains.</li> <li>➤ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li> <li>➤ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>				

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>➤ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>➤ Avoid all personal contact, including inhalation.</li> <li>➤ Wear protective clothing when risk of exposure occurs.</li> <li>➤ Use in a well-ventilated area.</li> <li>➤ <b>WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.</b></li> <li>➤ Avoid smoking, naked lights or ignition sources.</li> <li>➤ Avoid contact with incompatible materials.</li> <li>➤ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>➤ Keep containers securely sealed when not in use.</li> <li>➤ Avoid physical damage to containers.</li> <li>➤ Always wash hands with soap and water after handling.</li> <li>➤ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>➤ Use good occupational work practice.</li> <li>➤ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>➤ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Other Information</b>	<ul style="list-style-type: none"> <li>➤ Store in original containers.</li> <li>➤ Keep containers securely sealed.</li> <li>➤ Store in a cool, dry, well-ventilated area.</li> <li>➤ Store away from incompatible materials and foodstuff containers.</li> <li>➤ Protect containers against physical damage and check regularly for leaks.</li> <li>➤ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

**Conditions for safe storage, including any incompatibilities**

<b>Suitable Container</b>	<ul style="list-style-type: none"> <li>➤ DO NOT use aluminium or galvanised containers</li> <li>➤ Check regularly for spills and leaks</li> <li>➤ Lined metal can, lined metal pail/ can.</li> <li>➤ Plastic pail.</li> <li>➤ Polyliner drum.</li> <li>➤ Packing as recommended by manufacturer.</li> <li>➤ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage Incompatibility</b>	<ul style="list-style-type: none"> <li>➤ Inorganic acids neutralise chemical bases (for example: amines and inorganic hydroxides) to form salts - neutralisation can generate dangerously large amounts of heat in small spaces.</li> <li>➤ The dissolution of inorganic acids in water or the dilution of their concentrated solutions with additional water may generate significant heat.</li> <li>➤ The addition of water to inorganic acids often generates sufficient heat in the small region of mixing to cause some of the water to boil explosively. The resulting "bumping" can spatter the acid.</li> <li>➤ Inorganic acids react with active metals, including such structural metals as aluminum and iron, to release hydrogen, a flammable gas.</li> <li>➤ Inorganic acids react with cyanide compounds to release gaseous hydrogen cyanide.</li> <li>➤ Inorganic acids generate flammable and/or toxic gases in contact with dithiocarbamates, isocyanates, mercaptans, nitrides, nitriles, sulfides, and strong reducing agents. Additional gas-generating reactions occur with sulfites, nitrites, thiosulfates (to give H<sub>2</sub>S and SO<sub>3</sub>), dithionites (SO<sub>2</sub>), and even carbonates.</li> <li>➤ Reacts vigorously with alkalis.</li> <li>➤ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.</li> <li>➤ Contact with acids, organics, reducing agents (eg. amines), metallic powders and heat sources produces toxic fumes of chlorine. May be decomposed by hot water releasing chlorine fumes.</li> </ul>

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
Australia Exposure Standards	hydrochloric acid	Hydrogen chloride	Not Available	Not Available	7.5 mg/m <sup>3</sup> / 5ppm	Not Available


**EMERGENCY LIMITS**

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
hydrochloric acid	Hydrogen chloride; (Hydrochloric acid)	Not Available	Not Available	Not Available
hydrochloric acid	Deuteriochloric acid; (Deuterium chloride)	1.8 ppm	22 ppm	100 ppm

Ingredient	Original IDLH	Revised IDLH
hydrochloric acid	100 ppm	50 ppm
water	Not Available	Not Available

**MATERIAL DATA**

**Exposure controls**

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
<b>Personal Protection</b>	

<b>Eye and Face protection</b>	<ul style="list-style-type: none"> <li>➤ Safety glasses with imperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> <li>➤ Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.</li> <li>➤ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes.</li> <li>➤ Alternatively a gas mask may replace splash goggles and face shields.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>➤ Elbow length PVC gloves</li> <li>➤ Wear chemical protective gloves, e.g. PVC.</li> <li>➤ Wear safety footwear or safety gumboots, e.g. Rubber</li> <li>➤ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> <li>➤ Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>➤ Overalls.</li> <li>➤ PVC Apron.</li> <li>➤ PVC protective suit may be required if exposure severe.</li> <li>➤ Eyewash unit.</li> <li>➤ Ensure there is ready access to a safety shower.</li> </ul>
<b>Thermal hazards</b>	Not Available

### Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Colourless to slightly yellow corrosive liquid with a pungent acidic odour; miscible with water.		
<b>Physical state</b>	Liquid	<b>Flash point (°C)</b>	Not Applicable
<b>Odour</b>	Not Available	<b>Evaporation rate</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Flammability</b>	Not Applicable
<b>Relative density (water=1)</b>	1.15 – 1.17	<b>Upper Explosive Limit (%)</b>	Not Applicable
<b>Colour</b>	Colourless - slightly yellow	<b>Lower Explosive Limit (%)</b>	Not Applicable
<b>pH (as supplied)</b>	< 1	<b>Vapour pressure (kPa)</b>	Not Available
<b>Melting point/Freezing point (°C)</b>	< -20	<b>Solubility in water (g/L)</b>	Miscible
<b>Initial boiling point and boiling range (°C)</b>	>100	<b>Vapour density (Air = 1)</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Contact with alkaline material liberates heat
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Information on toxicological effects**

<b>Inhaled</b>	Acidic corrosives produce respiratory tract irritation with coughing, choking and mucous membrane damage. Symptoms of exposure may include dizziness, headache, nausea and weakness. Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure. Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects; these may be fatal. Inhalation of the vapour is hazardous and may even be fatal.
<b>Ingestion</b>	Ingestion of acidic corrosives may produce circumoral burns with a distinct discolouration of the mucous membranes of the mouth, throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.
<b>Skin Contact</b>	Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Direct eye contact with acid corrosives may produce pain, lachrymation, photophobia and burns. Mild burns of the epithelia generally recover rapidly and completely. Severe burns produce long-lasting and possible irreversible damage. The appearance of the burn may not be apparent for several weeks after the initial contact. The cornea may ultimately become deeply vascularised and opaque resulting in blindness.
<b>Chronic</b>	Repeated or prolonged exposure to acids may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes. Repeated exposures of animals to concentrations of about 34 ppm HCl produced no immediate toxic effects. Workers exposed to hydrochloric acid suffered from gastritis and a number of cases of chronic bronchitis have also been reported. Repeated or prolonged exposure to dilute solutions of HCl may cause dermatitis.

Product Name	TOXICITY	IRRITATION
TelChem Hydrochloric Acid 32 %	Not Available	Not Available
hydrochloric acid	Inhalation (rat) LC50: 3124 ppm/1hr <sup>[2]</sup> Oral (rat) LD50: 900 mg/kg <sup>[2]</sup>	Eye (rabbit): 5mg/30s - mild
Water	Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>HYDROCHLORIC ACID</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. For acid mists, aerosols, vapours; Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
<b>HYDROCHLORIC ACID &amp; WATER</b>	No significant acute toxicological data identified in literature search.





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Acute Toxicity	✓	Carcinogenicity	⊖
Skin Irritation/Corrosion	✓	Reproductivity	⊖
Serious Eye Damage/Irritation	✓	STOT – single exposure	⊖
Respiratory or Skin sensitisation	⊖	STOT – repeated exposure	⊖
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend:   
 ✗ – Data available but does not fill the criteria for classification  
 ✓ – Data required to make classification available  
 ⊖ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
hydrochloric acid	LC50	96	Fish	70.057mg/L	3
hydrochloric acid	EC50	96	Algae or other aquatic plants	344.947mg/L	3
hydrochloric acid	EC50	9.33	Fish	0.014000mg/L	4
hydrochloric acid	NOEC	0.08	Fish	10mg/L	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

### Ecotoxicity

Prevent, by any means available, spillage from entering drains or water courses.

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
hydrochloric acid	LOW	LOW
water	LOW	LOW

### Bio accumulative potential

Ingredient	Bioaccumulation
hydrochloric acid	LOW (Log KOW = 0.5392)
water	LOW (Log KOW = -1.38)

### Mobility in Soil

Ingredient	Mobility
hydrochloric acid	LOW (KOC = 14.3)
water	LOW (KOC = 14.3)


## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product/Packaging disposal</b>	<ul style="list-style-type: none"> <li>➢ Containers may still present a chemical hazard/ danger when empty.</li> <li>➢ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>➢ If container can't be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>➢ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> <li>➢ Recycle wherever possible.</li> <li>➢ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>➢ Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with soda-ash or soda-lime followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>➢ Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
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## SECTION 14 TRANSPORT INFORMATION

### Labels Required

	
<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	2R

### Land transport (ADG)

<b>UN Number</b>	1789	
<b>UN proper shipping name</b>	HYDROCHLORIC ACID	
<b>Transport Hazard class(es)</b>	Class	8
	Sub Risk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental Hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	Not Applicable
	Limited quantity	1 L

### Air transport (ICAO-IATA / DGR)

<b>UN Number</b>	1789	
<b>UN proper shipping name</b>	HYDROCHLORIC ACID	
<b>Transport Hazard class(es)</b>	ICAO/IATA Class	8
	ICAO/IATA Sub Risk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental Hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Available
	Cargo Only Maximum Qty/Pack	Not Available
	Passenger and Cargo Packing Instructions	851
	Passenger and Cargo Maximum Qty/Pack	1 L



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	Passenger and Cargo Limited Quantity Packing Instructions	Y840
	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

### Sea transport (IMDG-Code / GGVSee)

<b>UN Number</b>	1789	
<b>UN proper shipping name</b>	HYDROCHLORIC ACID	
<b>Transport Hazard class(es)</b>	IMDG Class	8
	IMDG Sub Risk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental Hazard</b>	Not Applicable	
<b>Special precautions for user</b>	EMS, Fire	F-A
	EMS, Spillage	S-B

### Transport in bulk according to Annex II of MARPOL and the IBC code

Source	Product Name	Pollution Category	Ship Type
IMO MARPOL (Annex II) – List of Noxious Liquid Substances Carried in Bulk	Hydrochloric acid	Z	3

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

#### HYDROCHLORIC ACID (7647-01-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards  
Australia Inventory of Chemical Substances (AICS)  
Australia Hazardous Substances Information System - Consolidated Lists

#### WATER (7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (hydrochloric acid; water)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (water)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)



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## SECTION 16 OTHER INFORMATION

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The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

Name	CAS No		
<b>PC—TWA</b>	Permissible Concentration-Time Weighted Average	<b>PC—STEL</b>	Permissible Concentration-Short Term Exposure Limit
<b>IARC</b>	International Agency for Research on Cancer	<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
<b>STEL</b>	Short Term Exposure Limit	<b>TEEL</b>	Temporary Emergency Exposure Limit
<b>IDLH</b>	Immediately Dangerous to Life or Health Concentrations	<b>OSF</b>	Odour Safety Factor
<b>NOAEL</b>	No Observed Adverse Effect Level	<b>LOAEL</b>	Lowest Observed Adverse Effect Level
<b>TLV</b>	Threshold Limit Value	<b>LOD</b>	Limit Of Detection
<b>OTV</b>	Odour Threshold Value	<b>BCF</b>	BioConcentration Factors
<b>BEI</b>	Biological Exposure Index		

**END OF SDS**