

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

**1.1 Product identifier**

**Product Name** HYDROCHLORIC ACID SOLUTION

**1.2 Other means of identification**

Muriatic acid, Spirit of salts, Hydrogen chloride solution, HCl

**1.3 Recommended use of the product and restrictions on use**

Swimming pool chemical, pH neutraliser, General chemical – boiler scale removal, ore reduction, pickling and metal cleaning, laboratory reagent

**1.4 Details of supplier of the safety data sheet**

**Supplier name** LIBERATO BULK CHEMICAL & REPACK SPECIALISTS PTY. LTD.

**Address** 1 Kalinga Way, Landsdale, WA, 6065, AUSTRALIA

**Telephone** 1300 377 696

**Email** [sales@liberato.com.au](mailto:sales@liberato.com.au)

**Website** <http://www.liberato.com.au>

**1.5 Emergency telephone number(s)**

**Emergency** 1300 377 696

**2. HAZARDS IDENTIFICATION**

**2.1 GHS Classification**

Corrosive to metals (Category 1)  
Skin corrosion (Category 1)  
Serious eye damage (Category 1)  
Specific target organ toxicity - single exposure (Category 3), Respiratory system

**GHS Label elements, including precautionary statements**



**Signal Word** Danger

**Hazard statement(s)**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

**Precautionary statement(s) Prevention**

P234 Keep only in original container.  
P261 Avoid breathing fume/ gas/ mist/ vapours/ spray.  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.  
Rinse skin with water/shower.  
P363 Wash contaminated clothing before re-use.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).  
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.  
P390 Absorb spillage to prevent material damage.

**Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P406 Store in corrosive resistant container with a resistant inner liner.

**Disposal**

P501 Dispose of contents/ container to an approved waste disposal plant.

**2.2 Other hazards**

None.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	CAS Number	Classification	Concentration (%)
Hydrochloric acid	7647-01-0	Met. Corr. 1; Skin Corr. 1; Eye Dam. 1; STOT SE 3; H290; H314; H335	100 – 35
Water	7732-18-5	-	Balance

For the full text of the H-Statements mentioned in this section, see Section 16

**4. FIRST AID MEASURES****4.1 Description of First Aid measures****General advice**

Contact the Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm.  
Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

**In case of skin contact**

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. Continue to wash skin and hair with plenty of water (and soap if material is insoluble) until advised to stop by the Poisons Information Centre or a doctor.

**In case of eye contact**

In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water until advised to stop by a Poisons Information Centre or doctor, or for at least 15 minutes, keeping eyelids open. Consult a doctor/physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek immediate medical assistance.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

Treat symptomatically. Can cause corneal burns

**4.4 First Aid facilities**

Eye wash facilities and safety shower should be available.

**5. FIRE FIGHTING MEASURES**

**5.1 Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the chemical**

Hydrogen chloride gas.

**5.3 Special protective equipment and precautions for fire fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Hazchem code**

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**6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see Section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

**6.3 Methods and materials for containment and cleaning up**

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material).

Neutralise with lime or soda ash. Collect and seal in properly labelled containers or drums for disposal. Wash area down with excess water.

**7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Avoid skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children. Always add the acid to water, never the reverse.

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

Store in cool place and out of direct sunlight. Store away from incompatible materials described in Section 10. Store away from foodstuffs. Do not store in aluminium containers. Do not store in galvanised containers. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Dangerous Goods Class 8 Corrosive by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

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## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

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### 8.1 Control parameters

#### Occupational Exposure Limits

Chemical Name	Reference	TWA – Peak Limitation		STEL		Carcinogen Category	Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>		
Hydrochloric acid (7647-01-0)	ASCC	5	7.5			-	-

As published in “*Workplace Exposure Standards for Airborne Contaminants, December 2011*” by SWA.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

#### Biological Limits

None allocated for this product.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE Requirements.

#### Personal protective equipment (PPE)

The selection of PPE is dependent on a risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

#### Eye/face protection

Tightly fitting safety glasses, full face-shield (where appropriate). See Australian Standards (AS/NZS 1336 & 1337).

#### Skin protection

Wear protective gloves, protective clothing and safety footwear and splash apron appropriate for the risk of exposure. See Australian Standards (AS 2161 & 2919 and AS/NZS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS/NZS 1715 & 1716).

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance</b>	Form : Liquid Colour : Clear, colourless to slightly yellow
<b>Odour</b>	Pungent
<b>Odour Threshold</b>	No data available
<b>pH</b>	<1
<b>Melting Point</b>	< -20°C
<b>Boiling Point/Range</b>	98°C (for 28% concentration)
<b>Decomposition Temperature:</b>	Not available

<b>Evaporation Rate:</b>	No data available
<b>Flash Point:</b>	Not applicable
<b>Flammability Limits:</b>	Not applicable
<b>Specific Gravity:</b>	1.14 (for 28% concentration) 1.16 (for 32% concentration)
<b>Vapour Density (air=1):</b>	1.3
<b>Vapour Pressure:</b>	2 kPa
<b>% Volatiles:</b>	100
<b>Solubility in water:</b>	Miscible with water

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## 10. STABILITY AND REACTIVITY

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### 10.1 Reactivity

Corrosive to many metals with the liberation of extremely flammable hydrogen gas.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Reacts with oxidising agents and sodium hypochlorite liberating toxic chlorine gas.

### 10.4 Conditions to avoid

Keep away from heat and sources of ignition. Protect from moisture. Avoid dust generation. Avoid exposure to direct sunlight.

### 10.5 Incompatible materials

Incompatible with alkalis, oxidising agents, sodium hypochlorite, permanganates, cyanides and many metals.

### 10.6 Hazardous decomposition products

Hydrogen chloride and chlorine gases.

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## 11. TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

#### Acute toxicity

No data available (Hydrochloric acid)

Inhalation: no data available (Hydrochloric acid)

However, for constituent HYDROGEN CHLORIDE:

LD50 Oral, rabbit is 900 mg/kg

LC50 Inhalation, rat is 3124 ppm/1h

#### Skin corrosion/irritation

Skin – Rabbit : Result : Causes burns

#### Serious eye damage/eye irritation

Eyes – Rabbit : Result : Corrosive to eyes

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. (Hydrochloric acid)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Hydrochloric acid)

### Reproductive toxicity

No data available.

### Specific target organ toxicity (STOT) - single exposure

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. (Hydrochloric acid)

### Specific target organ toxicity (STOT) - repeated exposure

No data available

### Aspiration hazard

No data available (Hydrochloric acid)

### Health Effects

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

- Eye contact:** A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury..
- Skin contact:** Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns.
- Ingestion:** Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
- Inhalation:** Breathing in mists or aerosols will produce respiratory irritation

### 11.2 Information on possible routes of exposure

The substance can be absorbed into the body by inhalation of its aerosol, ingestion, skin and/or eye contact.

### 11.3 Additional Information

RTECS: MW4025000

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## 12. ECOLOGICAL INFORMATION

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### 12.1 Ecotoxicity

Avoid contaminating waterways.

### Toxicity to fish:

LC<sub>50</sub> (Gambusia affinis, mosquito fish) = 282 mg/L, 96h

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Other adverse effects

No data available.

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## 13. DISPOSAL CONSIDERATIONS

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### 13.1 Disposal methods and containers

Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.

### 13.3 Special precautions for landfill or incineration

Contact a specialist disposal company or the local waste regulator for advice.

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## 14. TRANSPORT INFORMATION

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Classified as a Dangerous Goods by the criteria of the ADG Code for transport by road or rail

Classified as a Dangerous Goods by the criteria of the IMDG Code for transport by sea

Classified as a Dangerous Goods by the criteria of the IATA Code for transport by air

### 14.1 UN Number

ADG: 1789

IMDG: 1789

IATA: 1789

### 14.2 Proper Shipping Name

ADG: HYDROCHLORIC ACID

IMDG: HYDROCHLORIC ACID

IATA: HYDROCHLORIC ACID

### 14.3 Transport hazard class

ADG: 8 Corrosive

IMDG: 8 Corrosive

IATA: 8 Corrosive

### 14.4 Packing group

ADG: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADG: No

IMDG Marine Pollutant: No

IATA: No

### 14.6 Special precautions for users

No data

### 14.7 Hazchem code

ADG: 2R

IMDG EMS: F-A, S-B

### 14.8 Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010)

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## 15. REGULATORY INFORMATION

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### 15.1 Safety, health and environmental regulations

#### Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

S6 Poison

#### Carcinogen classification under WHS Regulations 2011, Schedule 10

Not listed

#### Notification status

AICS On the inventory, or in compliance with the inventory.

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## 16. OTHER INFORMATION

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### Key / legend to abbreviations and acronyms used in the MSDS

ADG	Australian Dangerous Goods
ASCC	Australian Safety and Compensation Council
DEC	Department of Environment and Conservation
GHS	Globally Harmonised System of Classification & Labelling of Chemicals
NOHSC	National Occupational Health and Safety Commission
RTECS	Registry of Toxic Effects of Chemical Substances.
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
Eye Dam.	Serious eye damage
Met. Corr.	Corrosive to metals
Skin Corr.	Skin corrosion
STOT SE3	Specific target organ toxicity (single exposure) - Category 3
TWA	Time weighted average
STEL	Short term exposure level
SWA	Safe Work Australia
Peak Limitations	A ceiling concentration that should not be exceeded over a measurement period, which should be as short as possible, but not exceeding 15 minutes
LD <sub>50</sub>	Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation
LC <sub>50</sub>	Lethal concentration that kills 50% of an animal population within a specified time
TD Lo	The lowest dose of a substance known to have produced signs of toxicity
RTECS	Registry of Toxic Effects of Chemical Substances
g/L	Grams per litre
g/cm <sup>3</sup>	Grams per cubic centimetre
mg/m <sup>3</sup>	Milligrams per cubic metre
mg/kg	Milligrams per kilogram
pH	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline
WHS	Work Health and Safety

### Literature references

"Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA Work Health and Safety Regulations 2011

"Registry of Toxic Effects of Chemical Substances". Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2012.

**End of Report**