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SAFETY DATA SHEET – Hydrochloric Acid

1. IDENTIFICATION

Revision Date	July 2023 (*valid for 5 years from this date)*
Product Name	HYDROCHLORIC ACID SOLUTION > 25%
Other Names	MURIATIC ACID
Uses	GENERAL CHEMICAL - ACID
Contact Information	Chlorine Discounters Address: 43 Clapham Road, Regents Park NSW 2143 P: 02-96454433 F: 02-96454030 E: info@chlorinediscounters.com.au W: www.chlorinediscounters.com.au
Emergency Contact	Managing Director or Operations Manager

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	6
Globally Harmonised System	
Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Corrosive to Metals - Category 1 Skin Corrosion/Irritation - Category 1B Serious Eye Damage/Irritation - Category 1 Specific Target Organ Toxicity (Single Exposure) - Category 3
Pictograms	



Signal Word	Danger	
Precautionary Statements		
Prevention	P260	Do not breathe mist/vapour/spray.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P310	Immediately call a POISON CENTER or doctor/physician.
	P321	Specific treatment (see First Aid Measures on Safety Data Sheet).
	P363	Wash contaminated clothing before reuse.
	P390	Absorb spillage to prevent material damage.
	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.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	P405	Store locked up.
	P406	Store in corrosive resistant container with a resistant inner liner.
	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	CAS Number	Proportions (%)
HYDROCHLORIC ACID	[7647-01-0]	28.0 – 36.0
WATER	[7732-18-5]	Balance

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

For advice, contact a Poison Information centre or a doctor at once. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration. Observe patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness i.e. becoming unconscious. Give water to rinse mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital without delay.

Eye

Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping the eyelids apart and away from eye and moving the eyelids occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin

Immediately flush body and clothing with large amounts of water, using safety shower if available. Quickly remove contaminated clothing including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poison Information centre. Transport to hospital or doctor.

Inhaled

If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag valve mask, or pocket mask as trained. Perform CPR is necessary. Transport to hospital or doctor without delay.

Advice to Doctor

Treat symptomatically. For acute or short term repeated exposure to strong acids: Airway problems may arise from laryngeal oedema 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 fluid to one or two glasses in an adult.

	Charcoal has no place in acid management. Some authors suggest the use of lavage with 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 mins. 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 depending on the severity of the injury. Steroid drops should only be administered with the approval of a consulting ophthalmologist.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, remove containers from the path of fire.
Flammability Conditions	Non flammable.
Extinguishing Media	Substance is non flammable; use water spray, fog or foam.
Fire and Explosion Hazard	The product is non-combustible.
Hazardous Products of Combustion	HCL can liberate highly flammable hydrogen gas when in contact with certain metals.
Special Fire Fighting Instructions	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) and acid-resistant chemical splash unit.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	2R

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Spillages are slippery. Ensure adequate ventilation, work up wind or increase ventilation. Keep spectators away - rope off the area. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and inhalation of vapours. Contain the spill and prevent run off into confined areas, drains and waterways. Vapour-suppressing foam may be used to control vapours.
Clean up Procedures	Absorb with dry earth, sand or other non-combustible material. Neutralise with lime or soda ash. Use clean non- sparking tools to collect and seal in

	properly labelled drums for disposal in an area approved by local authority by- laws. Incineration of disposed material is not recommended, as it is unlikely to adequately burn.
Containment	Stop leak if safe to do so.
Decontamination	Wash area down with excess water to remove residual material.
Environmental Precautionary Measures	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean-up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Keep containers closed at all times - check regularly for leaks or spills. Transport and store upright. Addition to water releases heat which can result in violent boiling and splattering. Always add slowly and in small amounts. Never add water to acids - always add acids to water. Avoid eye contact and repeated or prolonged skin contact and breathing in vapour, mists and aerosols. Do not eat, drink or smoke in contaminated areas. Always remove contaminated clothing and wash hands before eating, drinking, smoking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Do not combine part drums of the same product, as this may be a source of contamination. Do not mix with other chemicals.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use to ensure contamination does not occur. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Keep out of direct sunlight. Keep away from foodstuffs. This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations. This product has a UN classification of 1789 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Container type/packaging must comply with all applicable local legislation. Store in original packaging as approved by manufacturer. Do NOT use aluminium or galvanised containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC); Hydrochloric Acid CAS 7647-01-0: TWA = 5ppm Peak Limitation (7.5 mg/m3 Peak Limitation) NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak limitation is a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes. These 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 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.

Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded. If inhalation risk exists then use with local exhaust ventilation or while wearing a suitable respirator. Keep containers closed when not in use.
Personal Protection Equipment	RESPIRATOR: Avoid breathing mist, sprays or vapours. Where ventilation is not adequate, respiratory protection may be required. Any air-purifying respirator with an acid gas filters or any chemical cartridge respirator with an acid gas cartridge(s) providing protection against the compound of concern (AS/NZS1715/1716). EYES: Wear safety glasses/goggles with side shield protection and/or full-face shield (AS1336/1337). HANDS: Wear elbow-length laminate film, natural rubber, nitrile, neoprene, neoprene/natural rubber blend or PVC impervious gloves. Always check with the glove manufacturer or your personal protective equipment supplier regarding the correct type of glove to use. (AS2161). CLOTHING: Wear waterproof apron, coveralls, trousers, long sleeved shirt, closed in shoes and/or safety footwear (AS3765/2210).
Special Hazards Precautions	**Protective equipment must be worn at all times.** Risk assessments should always be conducted to identify the hazards and in turn determine the appropriate personal protective equipment for the hazard.
Work Hygienic Practices	No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless to pale yellow, pungent, fuming
Formula	HCL
Odour	Characteristically Pungent
Vapour Pressure	11 (28% HCL, 20 o C) TORR @ 20 o C
Vapour Density	Not applicable.
Boiling Point	97.7 deg C (28% HCL)
Melting Point	Not applicable.
Solubility in Water	Soluble
Specific Gravity	1.14 (Water = 1) (28% HCL)
Flash Point	Not applicable.
pH	<1 Neat
Lower Explosion Limit	Not applicable.
Upper Explosion Limit	Not applicable.
Ignition Temperature	Not applicable.
Flame Propagation/ Burning Rate of Solid Material	Not applicable.
Properties of Materials That May Initiate or Contribute to Fire Intensity	Not applicable.

Potential for Dust Explosion	Product is a liquid.
Reactions that Release Gases or Vapours	Corrosive to metals liberating hydrogen gas.
Fast of Intensely Burning Characteristics	Not applicable.
Non-flammables That Could Contribute Unusual Hazards to a Fire	Not applicable.
Release of Invisible Flammable Vapours and Gases	Not applicable.
Decomposition Temperature	Not applicable.

10. STABILITY AND REACTIVITY

General Information	Corrosive Liquid. Contact with alkaline material liberated heat.
Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Do not combine part drums of the same product, as this may be a source of contamination. Avoid Excess heat.
Materials to Avoid	Oxidising agents eg. Hypochlorites, alkalis, most metals etc. alcohols and amines.
Hazardous Decomposition Products	HCL can liberate highly flammable hydrogen gas when in contact with certain metals.
Hazardous Polymerisation	Reacts violently with alkalis. Reacts exothermically on dilution with water. Reacts with chlorine products and oxidising agents liberating toxic chlorine gas. Corrosive too many metals with the liberation of extremely flammable hydrogen gas.

11. TOXICOLOGICAL INFORMATION

General Information Inhalation, Rat LC50: 4.2 - 4.7 mg/l/1h

Chronic

Other	Substance accumulation, in the human body may occur and may cause some concern following repeated or long term occupational exposure. Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of the mouth lining.
Eye Irritant	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.
Ingestion	Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.
Inhalation	Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.
Skin Irritant	The material can produce chemical burns following direct contact with the skin. 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.

Carcinogen Category No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity ECOTOXICITY DATA FOR HYDROCHLORIC ACID:
LC50 Mosquito fish (female) 282 mg/L/24hr
LC50 Shore Crab 240 mg/L/48hr
LC50 Sand shrimp 260 mg/L/48hr

Persistence/Degradability Persistence is unlikely based on information available.

Mobility No information available

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

Bioaccumulation Potential No information available

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information 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.

Special Precautions for Land Fill Contact a specialist disposal company or the local waste regulator for advice. The product is suitable for disposal by landfill through an approved agent. Incineration of the product is not recommended, as it is unlikely to adequately burn.

14. TRANSPORT INFORMATION

Land Transport (Australia)

Regulation Name ADG

UN Number 1789

Shipping Name HYDROCHLORIC ACID

Dangerous Goods Class 8 Corrosive Substance

Subsidiary Risk Not applicable.

Pack Group II

Precaution for User CORROSIVE

Hazchem Code 2R



EPG 40 TOXIC AND/OR CORROSIVE SUBSTANCES Non-Combustible – Water Reactive

Special Provision	Not applicable.

Sea Transport

Regulation Name	IMDG
UN Number	1789
Shipping Name	HYDROCHLORIC ACID
Dangerous Goods Class	8 Corrosive Substance
Subsidiary Risk	Not applicable.
Pack Group	II
Precaution for User	CORROSIVE
Hazchem Code	2R



EPG	40 TOXIC and/or CORROSIVE SUBSTANCES Non-Combustible-Water Reactive
Special Provision	Not applicable.

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR001557

16. OTHER INFORMATION

Literature References	No data available.
Sources for Data	No data available.

Legend to Abbreviations and Acronyms

<	less than
<	greater than
ADG	Australian Dangerous Goods Code
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
cm2	square centimetres
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C ('C)	degrees Celsius

ERMA	Environmental Risk Management Authority
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
HSNO	Hazardous Substance and New Organism
IATA	International Air Transport Association Dangerous Goods Regulations
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods Code
Immiscible	liquids are insoluble in each other
Kg	kilogram
kg/m3	kilograms per cubic metre
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
ltr	Litre
m3	cubic metre
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic metre
Misc	miscible
Miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
mPa.s	milli Pascal per second
N/A	Not Applicable
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
tne	tonne
TWA	Time Weighted Average

ug/24H	micrograms per 24 hours
UN	United Nations (number)
wt	weight

This SDS summarises Chlorine Discounters best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Chlorine Discounters expressly disclaims that the SDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the SDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.