Infosafe No™ 1CH34 Issue Date :July 2022 RE-ISSUED by CHEMSUPP

Product Name **HYDROCHLORIC ACID 25 - 36%**

Classified as hazardous

Section 1 - Identification

Product Identifier	HYDROCHLORIC ACID 25 - 36%
Company Name	CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number	Tel: (08) 8440-2000
Emergency Phone Number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)
E-mail Address	www.chemsupply.com.au
Recommended use of the chemical and restrictions on use	Acidising (activation) of petroleum wells; boiler scale removal; as catalyst and solvent in organic synthesis; chemical intermediate in the production of chlorides (ammonium chloride), phosphoric acid, chlorine dioxide, isocyanate; used in the manufacture of fertilizers, dyes and dyestuffs, artificial silk and pigments for paints and synthetic rubber; ore reduction; food processing as a starch modifier, alcohol denaturant (manufacture of corn syrup, sodium glutamate, gelatin, in the brewing industry, in sugar refining); pickling and metal cleaning; recovery of zinc from galvanized iron scrap; industrial acidising in electroplating, leather tanning, photographic industry, soap refining, textile industry; pharmaceutic aid (acidifier); general cleaning, e.g. of membrane in desalination plants; ion-exchange resin regeneration (water treatment, chemical purification); pH control (water treatment); and laboratory reagent.

Other Names

Name	Product Code
HYDROCHLORIC ACID 32% AR	HA020
HYDROCHLORIC ACID 32% LR	HL020
HYDROCHLORIC ACID 32% TG	HT020
Muriatic acid, Spirits of salts, Hydrogen chloride solution	

Other Information

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Section 2 - Hazard(s) Identification

GHS Classification of the Substance/Mixture	Skin Corrosion/Irritation: Category 1B Specific Target Organ Toxicity Single Exposure Category 3 (respiratory tract irritation) Corrosive to Metals: Category 1
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.
Pictogram (s)	Corrosion, Exclamation mark

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Precautionary Statement – Prevention
P234 Keep only in original container.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statement – 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.
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.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P390 Absorb spillage to prevent material damage.

Precautionary Statement – 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.

Precautionary Statement – Disposal
P501 Dispose of contents/container according to local, state and federal regulations.

Section 3 - Composition and Information on Ingredients

Ingredients

Name	CAS	Proportion
Water	7732-18-5	64-75 %
Hydrochloric acid	7647-01-0	25-36 %

Information on Composition
Aqueous solution of the gas hydrogen chloride.

Section 4 - First Aid Measures

Inhalation
Remove from exposure, rest and keep warm. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. If rapid recovery does not occur, obtain medical attention.

Ingestion
Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Skin
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Remove contaminated clothing and wash before re-use. Seek urgent medical assistance.

Eye
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. Seek immediate medical assistance.

First Aid Facilities
Maintain eyewash fountain and drench facilities in work area.

Advice to Doctor
Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Treat symptomatically as for strong acids.

Other Information
For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

Section 5 - Firefighting Measures

Suitable Extinguishing Media
Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Hazards from Combustion Products	Irritating and highly toxic fumes of hydrogen chloride. Can react with metals generating flammable hydrogen gas.
Specific Methods	When material is not involved in fire: Do not use water on material itself.
Hazchem Code	2R
Decomposition Temperature	>1500 °C (decomposition of hydrogen chloride to hydrogen and chlorine).
Precautions in connection with Fire	Wear SCBA and acid-resistant chemical splash suit.

Section 6 - Accidental Release Measures

Spills & Disposal	Evacuate unprotected personnel from danger area. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours - Water spray may be used to knock down or divert vapour clouds. DO NOT GET WATER INSIDE CONTAINERS. Small Spill: Cover with DRY earth, sand or other non-combustible material followed by a plastic sheet to minimize spreading or contact with rain. Use clean non-sparking tools to collect material and place it into loosely-covered plastic containers for later disposal.
Personal Precautions	Avoid contact with substance, do not breathe vapours.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Large Spillages	Seek expert advice on handling and disposal.
Environmental Precautions	Do not discharge to the environment or sewer ststem. Prevent further leaking if safe to do so. If product contaminates rivers and lakes or drains inform respective authorities.

Section 7 - Handling and Storage

Precautions for Safe Handling	Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture/water.
Conditions for safe storage, including any incompatibilities	Store in original container, tightly closed, in a cool, dry, well-ventilated storage area with acid resistant floors. Store away from incompatible substances. Do not store in metal containers. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.
Corrosiveness	Very corrosive to most metals. Rubber-lined steel, Haveg, Hastelby and tantalum, are the most commonly used corrosion-resistant materials of construction. Rubber, glass, plastic and ceramic ware are also resistant to corrosion.
Storage Regulations	Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'.
Storage Temperatures	Store in a cool place (below 25 °C).

Section 8 - Exposure Controls and Personal Protection

Occupational Exposure Limit (OEL) Values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote

	Hydrochloric acid	7.5	5	Hydrogen chloride Peak Limitation

Other Exposure Information A time weighted average (TWA) has been established for Hydrogen chloride (Safe Work Australia) of 7.5 mg/m³ (Peak limitation), (5 ppm). 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.

Engineering Controls Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average).In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

Respiratory Protection Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.

Eye and Face Protection The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: NR latex. Good: Vinyl, nitrile, neoprene gloves.

Personal Protective Equipment Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.

Footwear Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Recommendation: Natural rubber apron

Hygiene Measures Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties

Form Liquid

Appearance Clear, colourless or slightly yellow liquid. Tendency to fume at higher concentrations.

Odour Strong, pungent, choking, irritating odour of hydrogen chloride.

Melting Point -52 °C (30%); -46.2 °C (31.24%); -43 °C to -42 °C (32%); -34 °C (33%); -36 °C (34%); -35 °C (35%); -30 °C (36%).

Boiling Point 90 °C (30%); 83 °C @ 760 mm Hg (31%); 79 °C at 1013 hPa (32%); 71 °C (34%); 61 °C (36%) (Boiling weaker or stronger aqueous solution results in loss of either component until constant boiling acid is obtained.)

Decomposition Temperature >1500 °C (decomposition of hydrogen chloride to hydrogen and chlorine).

Solubility in Water Soluble in all proportions with slight evolution of heat (56.1 g/100 ml at 60 °C; 67 g/100 ml at 30°C; 82.3 g/100 ml at 0 °C).

Solubility in Organic Solvents Very soluble in alcohols; soluble in diethyl ether and benzene; insoluble in hydrocarbons.

Specific Gravity 1.15 (29.57%); 1.159 (32%); 1.19 (33%); 1.169 (34%); 1.18 (35%); 1.179 (36%).

pH -1.0 (30% (w/w)); -1.0 (32% (w/w)); -1.0 (34% (w/w)); -1.1 (36% (w/w)) (strongly acidic).

Vapour Pressure	0.76 kPa (25%); 1.41 kPa (30%); 3.13 kPa (32%); 6.73 kPa (34%); 11.2 kPa (35%); 14.1 kPa (36%).
Relative Vapour Density (Air=1)	1.268.
Evaporation Rate	>1 (36%)
Odour Threshold	1-5 ppm (detectable); 10 ppm (irritating); 35 ppm (irritating) (~35%). Warning Properties: NOT RELIABLE - odour threshold is about the same magnitude as TLV.
Volatile Component	Hydrogen Chloride Gas
Partition Coefficient: n-octanol/water (log value)	log Pow: 0.25.
Flammability	Non combustible material.
Molecular Weight	36.46
Dynamic Viscosity	1.70 mPa·s (30%); 1.80 mPa·s (32%); 1.90 mPa·s (34%); 1.99 mPa·s (36%).
Saturated Vapour Concentration	130,000 ppm at 20 °C (calculated) (~35%).
Other Information	Index of refraction: 1.34168 @ 18 °C/D (1.0 N solution). Critical Temperature 51.5 °C (36-38%). Conversion Factor: 1 ppm = 1.49 mg/m³; 1 mg/m³ = 0.67 ppm at 25 °C (about 35%). Concentration (Baumé): 19 (30% (w/w)); 20 (32% (w/w)); 21 (34% (w/w)); 22 (36% (w/w)). Molarity: 9.45 M (30% (w/w)); 10.17 M (32% (w/w)); 10.90 M (34% (w/w)); 11.64 M (36% (w/w)). Taste: Taste threshold: 1.60 x 10-4 moles/l (recognition in water, chemically pure); 1.30 x 10-4 M/l (recognition in water, chemically pure); 1.10 x 10-4 M/l (recognition in water, chemically pure).

Section 10 - Stability and Reactivity

Chemical Stability	Stable at normal temperatures, pressures and conditions of use or storage.
Possibility of Hazardous Reactions	Large amounts of heat can be released when concentrated HCl is mixed with water or with organic solvents. Can react with most metals, generating flammable hydrogen gas. Reacts violently with bases (e.g. sodium hydroxide, amines), generating heat and pressure. Reaction with aldehydes, or epoxides may cause violent polymerization, generating heat and pressure. Reaction with reducing agents may produce heat, fire and flammable hydrogen gas. May react with oxidizing agents, generating heat and toxic or corrosive chloride gases. Contact with explosives may generate heat which could cause detonation. May react with acetylides, borides, carbides, silicides, producing flammable gas (e.g., acetylene). May react with cyanides, or sulfides to release toxic gas (HCN or H2S). May react with phosphide to release toxic, flammable phosphine gas.
Conditions to Avoid	Metals, excess heat and incompatible materials.
Incompatible Materials	Metals, bases (e.g. sodium hydroxide, amines), aldehydes, epoxides, reducing agents, oxidizing agents, permanganates, explosives, acetylides, borides, carbides, silicides, cyanides, sulfides and phosphide.
Hazardous Decomposition Products	Hydrogen chloride gas. Hydrogen chloride is thermally stable up to temperatures of about 1500 °C.

Section 11 - Toxicological Information

Ingestion	May be fatal if swallowed. Corrosive! HCl solutions can cause immediate pain, severe irritation, severe corrosive burns, or ulceration to mouth, throat and gastrointestinal tract. Risk of perforation in the oesophagus and stomach.

	Symptoms may include difficulty in swallowing, intense thirst, salivation, nausea, vomiting (with 'coffee ground' emesis), diarrhoea, abdominal pain, strictures and stenosis (oesophageal, gastric, pyloric), peritonitis, gastric haemorrhage and infection, chills, fever, central nervous system effects (uneasiness, excitement), cardiovascular effects (weak rapid pulse, tachycardia), respiratory effects (shallow respiration, lung injury due to aspiration of acid (may be fatal)), urinary system effects (kidneys- renal failure, nephritis) and in severe cases, circulatory shock, cardiovascular failure (delayed), collapse and death. Can also cause erosion of tooth enamel.
Inhalation	May be fatal if inhaled. Corrosive! The severity of effects depends on the concentration of the solution and the duration of contact. In general, HCl solutions and mist with a pH of 3 or less are a significant health concern. Vapour irritates and may cause severe irritation or possible corrosive effects on the mucous membranes of the respiratory tract with inflammation of the nose, throat, and upper respiratory tract, sore throat, coughing, shortness of breath and delayed lung oedema. Exposure to the mist and vapour may erode exposed teeth. Vapour or mist from concentrated solutions can cause severe nasal irritation, sore throat, choking, coughing and difficulty breathing. Prolonged exposures can cause burns and ulcers to the nose and throat, necrosis of bronchial epithelium, constriction of the larynx and bronchi, nasal perforation, and glottal closure. Severe exposures (1000 to 2000 ppm and higher) for even a few minutes, can cause an accumulation of fluid in the lungs (pulmonary oedema), circulatory failure, and death. Symptoms of pulmonary oedema such as shortness of breath can be delayed for several hours after the exposure. May affect the liver.
Skin	Strongly corrosive! Contact with liquid is corrosive and causes severe burns and ulceration. The severity of injury depends on the concentration of the solution and the duration of exposure. Concentrated solution causes deep ulcers and skin discolouration. Hydrochloric acid liquid can cause severe irritation (redness, swelling, and pain) and corrosive skin damage with permanent scarring (or even death). High vapour or mist concentration may cause redness, irritation and burns to skin if contact is prolonged. Skin covered by perspiration-dampened clothing can also be affected.
Eye	Strongly corrosive! Low concentrations of vapour or mist can be immediately irritating, causing redness. Concentrated vapour, mist or splashed liquid can cause severe irritation, conjunctivitis, burns (may be severe), and irreversible eye damage (corneal necrosis). Risk of blindness! May cause painful sensitization to light.
Carcinogenicity	Hydrochloric acid [7647-01-0] is evaluated in the IARC Monographs (Vol. 54; 1992) as Group 3: Not classifiable as to carcinogenicity to humans.
Mutagenicity	No human information is available. Questionable positive results reported in some short-term tests. Negative results in some in-vitro mammalian cell tests.
Chronic Effects	Repeated exposure to low concentrations of HCl acid mist or vapour may cause bleeding of nose and gums, damage to the mucous membranes, and brownish discolouration and damage to tooth enamel. Dental erosion becomes more severe with increased exposure. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Prolonged exposure may cause dyspnoea, chronic bronchitis, chemical pneumonitis and pulmonary oedema. Chronic stomach pain (gastritis) has also been reported. May cause damage to the kidneys, liver, or circulatory system. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated exposure to low concentrations of acid solutions, mist or vapour can cause redness, swelling and pain (dermatitis). Long term exposures seldom occur due to the corrosive properties of the acid. Prolonged exposure may cause conjunctivitis, photosensitization, and possible blindness.

Section 12 - Ecological Information

Ecotoxicity	Toxic for aquatic organisms. Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Damage to plant growth. Does not cause biological oxygen deficit.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

Section 13 - Disposal Considerations

Disposal Considerations	Dispose of according to relevant local, state and federal government regulations.

Section 14 - Transport Information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
ADG UN Number	1789
ADG Proper Shipping Name	HYDROCHLORIC ACID
ADG Transport Hazard Class	8
ADG Packing Group	II
Hazchem Code	2R
EPG Number	8A1
IERG Number	40
Environmental Hazards	Toxic for aquatic organisms. Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Damage to plant growth. Does not cause biological oxygen deficit.

Section 15 - Regulatory Information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
Poisons Schedule	S6

Section 16 - Any Other Relevant Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals'. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand. Safe Work Australia, 'Hazardous Chemical Information System'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
Empirical Formula & Structural Formula	Cl-H; HCl·H2O; HCl·3H2O; HCl·6H2O. (There are four constant-crystallization eutectic points for hydrochloric acid, between the crystal form of HCl·H2O (68% HCl), HCl·2H2O (51% HCl), HCl·3H2O (41% HCl), HCl·6H2O (25% HCl), and ice (0% HCl). There is also a metastable eutectic point at 24.8% between ice and the HCl·3H2O crystallization.)

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...End Of MSDS...