

1. IDENTIFICATION

Product Name	Hydrochloric acid, Solution (10 - <17%)
Other Names	No Data Available
Uses	No Data Available
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Hydrochloric acid, Solution (10 - <17%)
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Schedule 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 Skin Corrosion/Irritation - Category 2
 Serious Eye Damage/Irritation - Category 2A
 Specific Target Organ Toxicity (Single Exposure) - Category 3
 Corrosive to Metals - Category 1

Pictograms



Signal Word Warning

Hazard Statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statements

Prevention	P280	Wear protective gloves/eye protection/face protection.	
	P261	Avoid breathing mist/vapours/spray.	
	P271	Use only outdoors or in a well-ventilated area.	
	Response	P390	Absorb spillage to prevent material damage.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P337 + P313	If eye irritation persists: Get medical advice/attention.
		P312	Call a POISON CENTER or doctor/physician if you feel unwell.
		P332 + P313	If skin irritation occurs: Get medical advice/attention.
		P362	Take off contaminated clothing and wash before reuse.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	
Storage	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.	
	P406	Store in corrosive resistant container with a resistant inner liner.	
	P405	Store locked up.	
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)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

Health Hazards	6.1D	Substances that are acutely toxic - Harmful
	8.1A	Substances that are corrosive to metals
	8.2B	Substances that are corrosive to dermal tissue UN PGII
	8.3A	Substances that are corrosive to ocular tissue
Environmental Hazards	9.3C	Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Water	H ₂ O	7732-18-5	>83 - 90 %
Hydrochloric acid	HCl	7647-01-0	10 - <17 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	If swallowed: Rinse mouth, then drink plenty of water. Call a Poison Centre or doctor/physician if you feel unwell. Do NOT induce vomiting. If vomiting occurs spontaneously, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Never give anything by mouth to an unconscious person.
Eye	Eye contact: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	Skin contact: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes - Wash with plenty of soap and water. For minor skin contact, avoid spreading material onto unaffected skin. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician if experiencing respiratory symptoms, or if you feel unwell. Apply resuscitation if victim is not breathing. Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Non-combustible; Does not burn but may produce toxic and/or corrosive fumes upon heating.
Extinguishing Media	In case of fire: Use Carbon dioxide, dry chemical, dry sand or flooding quantities of water for extinction.
Fire and Explosion Hazard	Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.
Hazardous Products of Combustion	Fire will produce irritating, toxic, and/or corrosive gases, including Hydrogen chloride.
Special Fire Fighting Instructions	Runoff from fire control or dilution water may pollute waterways. Spillages and contaminated runoff may be washed to drains with large quantities of water. Due care must be exercised to avoid unnecessary pollution of watercourses.
Personal Protective Equipment	Wear self-contained breathing apparatus and chemical protective clothing (splash suit).
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	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid breathing vapours. Avoid contact with eyes, skin and clothing.
Clean Up Procedures	Absorb with dry earth and/or other non-combustible material. Use clean, non-sparking tools to collect material and place it into suitable containers for later disposal.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Absorb spillage to prevent material damage.
Decontamination	Use soda ash or slaked lime to neutralise residue.
Environmental Precautionary Measures	Spillages and decontamination runoff may be washed to drains with large quantities of water. Due care must be exercised to avoid unnecessary pollution of watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Handle in accordance with good industrial hygiene and safety practice. Use only outdoors or in a well-ventilated area. Avoid breathing mist/vapours/spray. Avoid contact with eyes, skin and clothing. Wear protective gloves/eye protection/face protection (see SECTION 8). In case of inadequate ventilation, wear respiratory protection.
Storage	Store in a cool, dry, well-ventilated area. Keep containers securely sealed. Store away from incompatible materials (oxidisers and strong alkalis). Protect containers against physical damage and check regularly for leaks. Store locked up.
Container	Keep ONLY in original (corrosive resistant) container - Clearly labelled and free from leaks.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	COMPONENT: Hydrochloric acid (CAS No. 7647-01-0): - Safe Work Australia Exposure Standard: TWA = 5 ppm (7.5 mg/m ³) Peak limitation.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	Provide mechanical general and/or local exhaust ventilation to prevent release of vapour or mist into work environment.
Personal Protection Equipment	Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended filter type: E - for use against acidic gases and vapours. Eye/face protection: Wear eye protection/face protection. Recommended: Safety glasses with side shields; Chemical goggles. Hand protection: Wear protective gloves. Recommended: Chemical protective gloves (e.g. PVC). Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls or PVC apron; Safety footwear/gumboots (e.g. rubber).
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear liquid
Odour	Sharp
Colour	Colourless

pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Miscible with water
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Does not burn but may produce toxic and/or corrosive fumes upon heating.
Reactions That Release Gases or Vapours	Fire/thermal decomposition will produce irritating, toxic, and/or corrosive gases, including Hydrogen chloride.
Release of Invisible Flammable Vapours and Gases	Contact with metals may evolve flammable Hydrogen gas.

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperature conditions and recommended use.
Conditions to Avoid	Avoid heat.
Materials to Avoid	Incompatible/reactive with oxidising agents and alkali metals.
Hazardous Decomposition Products	Fire/thermal decomposition will produce irritating, toxic, and/or corrosive gases, including Hydrogen chloride.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Acute toxicity: Not classified for acute oral/dermal toxicity due to the corrosive nature of the chemical. May be harmful if inhaled. Skin corrosion/irritation: Causes skin irritation. Eye damage/irritation: Causes serious eye irritation. Respiratory/skin sensitisation: Not expected to be a skin sensitiser. Germ cell mutagenicity: Not considered to be genotoxic. Carcinogenicity: Not considered to be carcinogenic. Reproductive toxicity: This product does not contain any known or suspected reproductive hazards. STOT - single exposure: May cause respiratory irritation. STOT - repeated exposure: The constituent ions are present in the human body at high concentrations, particularly in the stomach, and only short-term local effects are expected following oral exposure. The chemical is not considered to cause serious damage to health from repeated inhalation exposure. However, local irritation effects are expected due to the corrosivity of the chemical. Aspiration toxicity: No information available.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Hydrochloric acid: - LC50, Fish: 70.057 mg/L (96 h). - EC50, Algae/other aquatic plants: 344.947 mg/L (96 h).
Persistence/Degradability	Low persistence in water/soil. Low persistence in air.
Mobility	Low mobility in soil (KOC = 14.3).
Environmental Fate	Avoid release to the environment. Prevent entry into drains and waterways.
Bioaccumulation Potential	Low bioaccumulative potential (Hydrochloric acid, LogKOW = 0.5392).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. Treat and neutralise at an effluent treatment plant; Use soda ash or slaked lime to neutralise.
Special Precautions for Land Fill	Contaminated packaging: Recycle wherever possible, otherwise dispose of in an authorised landfill.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	40 Toxic And/Or Corrosive Substances Non-Combustible - Water Reactive
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	40 Toxic And/Or Corrosive Substances Non-Combustible - Water Reactive
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	40 Toxic And/Or Corrosive Substances Non-Combustible - Water Reactive
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
ERG	157 Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-B
Marine Pollutant	No

Air Transport

IATA

Proper Shipping Name	HYDROCHLORIC ACID (10 - <17%)
Class	8 Corrosive Substances

Subsidiary Risk(s)	No Data Available
UN Number	1789
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

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)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Schedule 6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR001565
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National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	HYACIB3008, HYACIB3009, HYACIB3010, HYACID1843, HYACID1844, HYACID1845, HYACID1852, HYACID1853, HYACID1854, HYACID1855, HYACID1916, HYACID1921, HYACID1923, HYACID1925, HYACID1926, HYACID1928, HYACID1951, HYACID3010
Revision	1
Revision Date	11 Dec 2016
Key/Legend	< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound 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 or L 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 or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present. mm Millimetre mmH₂O Millimetres of Water mPa.s Millipascals per Second N/A Not Applicable NIOSH National Institute for Occupational Safety and Health NOHSC National Occupational Health and Safety Commission OECD Organisation for Economic Co-operation and Development Oz Ounce PEL Permissible Exposure Limit Pa Pascal ppb Parts per Billion ppm Parts per Million ppm/2h Parts per Million per 2 Hours ppm/6h Parts per Million per 6 Hours psi Pounds per Square Inch R Rankine 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 wt Weight