1. IDENTIFICATION

Product Name **Hydrochloric Acid Solution >10-25%**

Other Names Chlorohydric Acid; Hydrochloric acid; Hydrochloric Acid >10-25%; Hydrogen Chloride; Muriatic Acid

Uses GENERAL CHEMICAL - ACID

Chemical Family No Data Available

Chemical Formula No Data Available

Chemical Name Hydrochloric Acid Solution >10-25%

Product Description No Data Available

Contact Information

Organisation	Location	Telephone	Ask For
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000	SDS Officer
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222	
Redox Inc.	2132A E. Dominguez Street Carson CA 90810 USA	+1-424-675-3200	
Redox Chemicals Sdn Bhd	No. 8, Block G, Ground Floor, Taipan 2 Jalan PJU 1A/3 Ara Damansara 47301, Petaling Jaya, Selangor, Malaysia	+60-3-7843-6833	
Poisons Information Centre	Westmead NSW	1800-251525 131126	
Chemcall	Australia	1800-127406	
Chemcall	New Zealand	0800-243622 +64-4-9179888	
National Poisons Centre	New Zealand	0800-764766	
CHEMTREC	USA & Canada	1-800-424-9300 CCN723420 +1-703-527-3887	

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 6

Safe Work Australia
Approved Criteria for Classifying Hazardous Substances (NOHSC:1008(2004))

Hazard Classification Hazardous according to the criteria of Safe Work Australia [NOHSC:1008(2004)]

Hazard Categories **C** Corrosive

Safe Work Australia
National Code of Practice for the Labelling or Workplace Substances (NOHSC:2012(1994))

Risk Phrases	**R35**	Causes severe burns.
	R37	Irritating to respiratory system.
	R41	Risk of serious eye damage.
Safety Phrases	**S23**	Do not breathe fumes/spray/vapour.
	S24/25	Avoid contact with skin and eyes.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	S7/9	Keep container tightly closed and in a well-ventilated place.

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 Act 1996

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	No Data Available	7732-18-5	<75.0 - 90.0 %
Hydrochloric Acid	No Data Available	7647-01-0	>10.0 - 25.0 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed For advice, contact a Poisons Information Centre (Phone Australia 131126, New Zealand 0800 764 766) or a doctor. If swallowed, do NOT induce vomiting.

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.
FIRST AID FACILITIES: Potable water should be available to rinse eyes or skin. Provide eye baths and safety showers.

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue

Skin	flushing until advised to stop by the Poisons Information Centre or a doctor.
Inhaled	Remove from source of exposure to fresh air. Seek medical assistance if the effects persist. ** SHOW THIS SAFETY DATA SHEET TO A DOCTOR **
Advice to Doctor	Treat symptomatically and as for strongly acidic corrosive material. Can cause corneal burns.ave
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	Contact with metals may liberate hydrogen gas which is extremely flammable.
Extinguishing Media	Water spray, foam, carbon dioxide or dry chemical powder.
Fire and Explosion Hazard	The product is non-combustible.
Hazardous Products of Combustion	The packaging material may burn to emit noxious fumes.
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) or chemical 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	Shut off all possible sources of ignition. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Use clean, non-sparking tools and equipment. Ensure adequate ventilation, work up wind or increase ventilation. Keep spectators away - rope off the area. Wear protective equipment to prevent skin and eye contamination and inhalation of vapours.
Clean Up Procedures	Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. Neutralise with lime or soda ash. When saturated collect material, transfer to suitable, labelled, dry chemical-waste containers and dispose of promptly as hazardous waste. 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. Contain the spill and prevent run off into confined areas, drains and waterways. Vapour-suppressing foam may be used to control vapours.
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.

Storage Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. 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 sunlight and away from incompatible materials and foodstuffs. Keep containers closed when not in use to ensure contamination does not occur- check regularly for leaks. Do not combine part drums of the same product, as this may be a source of contamination. Do not mix with other chemicals. 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 Store in original packaging as approved by manufacturer.

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 (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 (AS2161).
CLOTHING: Wear waterproof apron, coveralls, trousers, long sleeved shirt, closed in shoes and/or safety footwear (AS3765/2210).

Work Hygienic Practices 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid

Appearance Mobile Fuming Liquid

Odour Odour of Hydrogen Chloride Gas

Colour Clear, colourless

pH <1 Neat

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 The product is water based and is fully soluble in water

Specific Gravity 1.04

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	Product is a liquid.
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	Corrosive to metals liberating hydrogen gas.
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

General Information	Corrosive Liquid. SHELF LIFE: 2 years from manufacturing date (when stored as directed).
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.
Materials to Avoid	Chlorine containing products, alkalis, organic materials, aluminium, tin or zinc coated metals.
Hazardous Decomposition Products	The packaging material may burn to emit noxious fumes. Reacts violently with alkalis. Reacts exothermically on dilution with water. Reacts with chlorine products and oxidising agents liberating toxic chlorine gas. Corrosive to many metals with the liberation of extremely flammable hydrogen gas.
Hazardous Polymerisation	No Data Available

11. TOXICOLOGICAL INFORMATION

General Information	TOXICITY DATA FOR HYDROCHLORIC ACID: Oral LD50 (rat) 900 mg/kg Inhalation LC50 (rat) 3124 ppm/1h Inhalation LC50 (mouse) 1108 ppm/1h
EyeIrritant	Highly corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Ingestion	Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
Inhalation	Breathing in mists or aerosols may produce respiratory irritation.
SkinIrritant	Highly corrosive to skin - may cause skin burns.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity	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. 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	No Data Available
Mobility	No Data Available
Environmental Fate	No Data Available
Bioaccumulation Potential	No Data 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 disposed material is not recommended, as it is unlikely to adequately burn.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	No Data Available

Land Transport (Fiji)
NZS5433

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	No Data Available

Land Transport (New Caledonia)
NZS5433

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	No Data Available

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	

Land Transport (Papua New Guinea)
NZS5433

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	No Data Available

Land Transport (United States of America)
US DOT

Proper Shipping Name	HYDROCHLORIC ACID
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	II
Special Provision	No Data Available

Sea Transport
IMDG

Proper Shipping Name	HYDROCHLORIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1789
Hazchem	2R
Pack Group	II
Special Provision	No Data Available
EMS	FA,SB
Marine Pollutant	No

Air Transport
IATA

Proper Shipping Name	HYDROCHLORIC ACID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1789
Hazchem	2R
Pack Group	II
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)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Act 1996

Approval Code	HSR001565

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)	Not Determined
Phillipines (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	HYACID1843, HYACID1844, HYACID1845, HYACID1852, HYACID1853, HYACID1854, HYACID1855, HYACID1916, HYACID1921, HYACID1923, HYACID1925, HYACID1926, HYACID1928
Revision	1
Revision Date	09 Nov 2011
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 Heath 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