

MATERIAL SAFETY DATA SHEET

Section 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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BRAND NAME – Hydrochloric Acid 32%
TRADE NAME - Muriatic Acid
SHIPPING NAME (section 14) Hydrochloric Acid

USE – P.H. Adjustment and Chemical Reagent

RESTRICTIONS – **Incompatibilities** : A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases , metal oxides , hydroxides , amines , carbonates and other alkaline materials. Incompatible with materials such as cyanides , sulfides , sulfites , and formaldehyde.

Conditions to Avoid : Heat and direct sunlight.

Section 2 HAZARDS CLASSIFICATION / IDENTIFICATION

CLASSIFIED AS : **HAZARDOUS** – According to the criteria of NOHSC and classified as a **Dangerous Good** according to the **ADG** code.

UN NUMBER : 1789

Emergency Overview : Corrosive. Liquid and mist cause severe burns to all body tissue. May be fatal if swallowed or inhaled. Inhalation may cause lung damage.

Potential Health Effects :

Inhalation : Corrosive ! Inhalation of vapours can cause coughing , choking , inflammation of the nose, throat, and upper respiratory tract and in severe cases pulmonary oedema, circulatory failure and death.

CONTINUE HAZARDS CLASSIFICATION / IDENTIFICATION

Ingestion : Corrosive ! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth , throat , oesophagus and gastrointestinal tract. May cause nausea , vomiting and diarrhoea. Swallowing may be fatal.

Skin Contact : Corrosive ! Can cause redness , pain , and severe skin burns. Concentrated solutions cause deep ulcers and discolour skin.

Eye Contact : Corrosive ! vapours are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure : Long term exposure to concentrated vapours may cause erosion of teeth. Long term exposure seldom occur due to the corrosive properties of the acid.

Aggravation of Pre – existing Conditions : Persons with pre – existing skin disorders or eye disease may be more susceptible to the effects of this substance.

RISK PHRASES :

R 23	Toxic by inhalation
R 35	Causes severe burns
R 37	Irritating to the respiratory system

SAFETY PHRASES:

S1/2	Keep locked up and out of reach of children
S9	Keep container in well ventilated area
S 24 / 25	Avoid contact with skin and eyes
S 26	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
S 45	In case of accident or you feel unwell seek medical advice immediately (show label whenever possible)

Section 3 COMPOSITION / INFORMATION OF INGREDIENTS

Chemical Entity:	CAS No:	Proportion (% mass)
Hydrogen Chloride	7647 – 01 -0	32 (+/-1%)
Water	7732 – 18 – 5	Balance

Section 4 FIRST AID MEASURES

Inhalation : Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

FIRST AID CONT :

Ingestion : DO NOT INDUCE VOMITING . Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact : In case of contact immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Contact : Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

First Aid Facilities: **Ensure an eye bath and safety shower are available and ready for use.**

Section 5

FIRE FIGHTING MEASURES

FIRE : Extreme heat or contact with metals can release flammable hydrogen gas.

EXPLOSION : Not considered to be an explosion hazard.

FIRE EXTINGUISHING MEDIA : If involved in a fire use water spray. Neutralize with soda ash or slaked lime.

SPECIAL INFORMATION : In the event of a fire wear full protective clothing and NIOSH – approved self contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

HAZCHEM CODE : 2R

Section 6

ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL : Wear appropriate personal protective equipment as specified in section 8 . Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (Soda ash, lime) then absorb with an inert material (eg – vermiculite , dry sand , earth) and place in a chemical waste container. Do not use combustible materials such as sawdust. Do not flush to sewer.

Section 7

HANDLING AND STORAGE

Handling and storage : Store in a cool dry ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat , water and incompatible materials. Do not wash out containers and use it for other purpose. When diluting , the acid should always be added slowly to water and in a small amount. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers use non sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues, vapours and liquids. Observe all warnings and precautions listed for the product.

Section 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

NOHSC Airborne exposure Limits : TWA 5ppm (7.5 mg/m³)

Ventilation System : A system of local and or general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. 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.

Personal Respirators : (AS1715 / 1716) If the exposure limit is exceeded a full face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known use a full face piece positive pressure, air supplied respirator. **WARNING** Air purifying respirators do not protect workers in oxygen deficient atmospheres.

Skin Protection : Rubber or neoprene gloves and additional protection including impervious boots , apron , or coveralls as needed in areas of unusual exposure to prevent skin contact.

Eye Protection : Use chemical safety goggles and / or full face shield where splashing is possible. Maintain eye wash fountains and quick drench facilities in work area.

Section 9	PHYSICAL & CHEMICAL PROPERTIES
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APPEARANCE – Colourless fuming liquid

ODOUR - Pungent Odour

PH – For HCl Solutions 0.1

VAPOUR PRESSURE (mg Hg) 190@25° C

BOILING POINT °C - 109° C

VAPOUR DENSITY – 1.3 (Air=1)

FREEZING POINT °C – not available

SOLUBILITY – Infinite in water with slight evolution of heat

SPECIFIC GRAVITY – 1.16 @ 20° C

ADDITIONAL INFORMATION

Melting Point - < -20° C

Section 10	STABILITY & REACTIVITY
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Stability : Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products : When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

Hazard Polymerization : Will not occur.

Incompatibilities : A strong mineral acid concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metal oxides, hydroxides, amines, carbonates and other alkaline material. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

Conditions to Avoid : Heat and direct sunlight.

Section 11	TOXICOLOGICAL INFORMATION
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Inhalation rat LC50 : 3124 ppm / 1H oral rabbit LD50:900 mg/kg (hydrochloric acid concentrated) investigated as a tumorigen, mutagen reproductive effector.

Carcinogenicity : Hydrogen Chloride (7647 – 01 – 0) Not an NTP carcinogen, IARC cat 3

Section 12	ECOLOGICAL INFORMATION
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Environmental Fate : When released into the soil this material is not expected to biodegrade. When released into the soil this material may leach into ground water.
Environmental Toxicity : This material is expected to be toxic to aquatic life.

Section 13	DISPOSAL CONSIDERATIONS
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Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Dispose of container and unused content in accordance with federal , state and local requirements.

Section 14	TRANSPORT INFORMATION
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UN NUMBER : 1789

UN PROPER SHIPPING NAME : Hydrochloric Acid

CLASS: 8

PACKING GROUP: 11

HAZCHEM CODE: 2R

Subsidiary Risk SUSDP Schedule 6

Section 15	REGULATORY INFORMATION
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POISONS SHEDULE (SUSDP)

Australia Inventory of Chemical Substances : Hydrochloric acid is listed in the AICS.

SUSDP poison Schedule : S26 (requires child proof lid on 5 lts or less.

SAFETY DIRECTIONS : Avoid contact with skin and eyes. Avoid breathing vapour or spray mist.

FIRST AID : For advise contact a Poisons Information Centre

(Phone Australia 131 126) or a doctor at once. If swallowed do not induce vomiting. If in eyes hold eyelids apart and flush the eye continuously with running water.

Continue flushing until advised to stop by poisons information centre or a doctor, or for at least 15 minutes. If skin or hair contact occurs remove contaminated clothing and flush skin and hair with running water.

Cont : Regulatory Information

NOHSC (Work Safe) Classification : Corrosive Xi irritant R34 Cause burns R37 Irritating to the respiratory system , S1 / 2 Keep locked up and out of reach of children ,S26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice. S45 In case of accident or you feel unwell seek medical advise immediately (Show label whenever possible)

Section 16	OTHER INFORMATION
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NFPA Rating : Health : 3 Flammability : 0 Reactivity : 0

Label Precautions : Do not get in eyes on skin or on clothing . Do not breathe vapour or mist. Use only with adequate ventilation. Wash thoroughly after handling. Store in a tightly closed container. Remove and wash contaminated clothing promptly.

DATE OF LAST REVISION OF MATERIAL SAFETY DATA SHEET :

CONTACT POINT – Les Buss – TELEPHONE (08) 9309 4222

AUTHORISATION FOR ISSUE _____ **DATE**

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Les Buss

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