SAFETY DATA SHEET
HYDROCHLORIC ACID, >25%
REVISION 7, DATE 13 DEC 23

1. IDENTIFICATION

Product Name	**Hydrochloric acid, >25%**
Other Names	Hydrochloric acid 31 - 33%; Hydrochloric acid 32%; Hydrochloric acid 33%
Uses	Industrial use.
Chemical Family	No Data Available
Chemical Formula	HCl
Chemical Name	Aqueous hydrogen chloride
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox 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			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
Hazard Statements		**H290**	May be corrosive to metals.
		H314	Causes severe skin burns and eye damage.
		H335	May cause respiratory irritation.
Precautionary Statements	Prevention	**P260**	Do not breathe fume/mist/vapours/spray.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
		P271	Use only outdoors or in a well-ventilated area.
	Response	**P303 + P361 + P353**	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
		P310	Immediately call a POISON CENTER or doctor.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P390	Absorb spillage to prevent material-damage.
		P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
		P363	Wash contaminated clothing before reuse.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep 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)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	**6.1B**	Substances that are acutely toxic - Fatal

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Water	H2O	7732-18-5	<75 %
Hydrochloric acid	HCl	7647-01-0	>25 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed
IF SWALLOWED: Rinse mouth, then give a glass of water. Do NOT induce vomiting. For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Never give anything by mouth to an unconscious person.
*DO NOT attempt to neutralize 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 fluids to one or two glasses in an adult.

Eye
IF IN EYES: 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 flushing until advised to stop by a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes. Continue to wash with large amounts of water until medical help is available.
*DO NOT use neutralizing agents or any other additives. Several litres of saline are required.

Skin
IF ON SKIN (or hair): Remove and isolate contaminated clothing and shoes. Immediately flush skin and hair with running water for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice. Wash contaminated clothing and shoes before reuse.
*If spilt on large areas of skin or hair, immediately drench with running water before removing clothing. For minor skin contact, avoid spreading material on unaffected skin. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.

Inhaled
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove contaminated clothing and loosen remaining clothing. Immediately call a Poison Centre or doctor/physician for advice. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.

Advice to Doctor
Treat symptomatically. Keep victim calm and warm. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
*Most important symptoms and effects, both acute and delayed: Harmful if swallowed and in contact with skin. Causes severe skin burns and eye damage. Fatal if inhaled.

Medical Conditions Aggravated by Exposure
No information available.

5. FIRE FIGHTING MEASURES

General Measures
Move containers from fire area if you can do it without risk. Do not approach containers suspected to be hot. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

Flammability Conditions	Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Use water spray or fog; do not use straight streams.
Fire and Explosion Hazard	Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. Vapours may accumulate in confined areas. Contact with metals may evolve flammable hydrogen gas.
Hazardous Products of Combustion	Fire will produce irritating, corrosive and/or toxic gases, including Hydrogen chloride.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may be corrosive and/or toxic and cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing - It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
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 - Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Slippery when spilt. Avoid accidents, clean up immediately! Do not breathe mist/vapours and prevent contact with eyes, skin and clothing.
Clean Up Procedures	Use clean, non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. *A vapour-suppressing foam may be used to reduce vapours. Use water spray to reduce vapours or divert vapor cloud drift.
Decontamination	Neutralise residues with lime or soda ash. Wash area down with excess water. *Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
Environmental Precautionary Measures	Prevent runoff into drains and waterways. If contamination of sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Evacuate personnel to safe areas. Keep unauthorised & unprotected personnel away. Stay upwind and/or uphill.
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. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Do not breathe mist/vapours/aerosols and prevent contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection and suitable respirator (see SECTION 8). Always release caps or seals slowly to ensure slow dissipation of vapours. Keep away from heat and sources of ignition - No smoking. CORROSIVE TO METALS: Absorb spillage to prevent material damage. *WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed - check regularly for leaks. Keep away from heat and sources of ignition - No smoking. Keep away from food/feedstuffs and incompatible materials (see SECTION 10). Store locked up. Keep only in the original container.

Container	*Do not store in aluminium containers. Do not store in galvanised containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Hydrochloric acid (CAS No. 7647-01-0): - Safe Work Australia Exposure Standard: TWA = 5 ppm (7.5 mg/m3) Peak limitation. - New Zealand Workplace Exposure Standard [Next review 2023]: Ceiling = 5 ppm (7.5 mg/m3). - OSHA PEL/NIOSH REL: TWA = 5 ppm (7 mg/m3) Ceiling. *Immediately dangerous to life or health (IDLH) concentration: 50 ppm.
Exposure Limits	No Data Available
Biological Limits	No information available.
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. *Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards.
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection if, determined by a risk assessment, an inhalation risk exists. Recommended: wear an air-supplied mask (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles, full face shield. - Hand protection: Wear protective gloves. Recommended: Elbow-length impervious gloves, e.g. PVC. - Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: Wear overalls, apron or equivalent chemical impervious outer garment, and rubber boots. When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear liquid
Odour	Pungent
Colour	Colourless to slightly yellow
pH	<1 (Neat)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	81.5 - 110 °C
Melting Point	-74 °C
Freezing Point	No Data Available
Solubility	Miscible with water
Specific Gravity	1.0 - 1.2
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	>1 (Butyl acetate = 1)
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 information 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; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Reactions That Release Gases or Vapours	Fire/decomposition will produce irritating, corrosive and/or toxic gases, including Hydrogen chloride.
Release of Invisible Flammable Vapours and Gases	Contact with metals may evolve flammable hydrogen gas.

10. STABILITY AND REACTIVITY

General Information	Contact with metals may evolve flammable hydrogen gas.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from incompatible materials. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with alkalis, oxidising agents, sodium hypochlorite, cyanides and metals.
Hazardous Decomposition Products	Fire/decomposition will produce irritating, corrosive and/or toxic gases, including Hydrogen chloride.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	Information on toxicological effects: - Acute toxicity: Acute lethal effects are expected due to the corrosive nature of the chemical. The chemical is classified for its corrosive effects and, therefore, an additional hazard classification for acute oral toxicity is not required. Due to the corrosive nature of the chemical, it is not possible to conduct acute dermal toxicity studies in animals. - Skin corrosion/irritation: Causes severe skin burns and eye damage. - Serious eye damage/irritation: Causes serious eye damage. - Respiratory/skin sensitisation: Only limited data are available due to the corrosive nature of the chemical. The chemical is not expected to be a skin sensitiser.

- Germ cell mutagenicity: Based on the in vitro data available, the chemical is not considered to be genotoxic.
- Carcinogenicity: Based on the information available, the chemical is not considered to be carcinogenic. Hydrochloric acid (CAS No. 7647-01-0) is Classified by the IARC Monographs as "Not classifiable as to its carcinogenicity to humans" (Group 3).
- Reproductive toxicity: Only limited data are available. However, the constituent ions are present in the human body at high concentrations, particularly in the stomach, and only short-term local effects are expected.
- STOT (single exposure): May cause respiratory irritation.
- STOT (repeated exposure): Based on the available data, 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.

Information on likely routes of exposure:
- Ingestion: Harmful if swallowed. Corrosive! Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
- Eye contact: Corrosive! Causes serious eye damage. Contamination of eyes can result in permanent injury.
- Skin contact: Harmful in contact with skin. Corrosive! Causes severe skin burns.
- Inhalation: Fatal if inhaled. Breathing in mists or aerosols will produce respiratory irritation.

Chronic effects: Repeated exposure to low levels of hydrochloric acid may produce discolouration and erosion of teeth and ulceration of the nasal passages.

Acute

Ingestion

Acute toxicity (Oral):
COMPONENT: Hydrochloric acid (CAS No. 7647-01-0):
- LD50, Rats (female): 238 - 277 mg/kg bw (3.3% conc.) [NICNAS].

Carcinogen Category

None

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic toxicity:
- LC50, Fish (Gambusia affinis): 282 mg/L (96 h) [Hydrochloric acid].
- EC50, Daphnia (Water flea): 56 mg/L (72 h) [Hydrochloric acid].

Persistence/Degradability

Persistence is unlikely based on available information.

Mobility

No information available.

Environmental Fate

Large discharges may contribute to the acidification of water and be fatal to fish and other aquatic life. Can cause damage to vegetation. Can cause severe damage to aquatic plants.

Bioaccumulation Potential

No information available.

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS

General Information

Dispose of contents/container through a licensed waste contractor and in accordance with local/regional/national regulations. Decontamination and destruction of containers should be considered.

Special Precautions for Land Fill

Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together, if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

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)

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 (Malaysia)

ADR Code

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)

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)

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 Code

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	F-A, S-B
Marine Pollutant	No

Air Transport
IATA DGR

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	HYDROCHLORIC ACID
Poisons Schedule (Aust)	Schedule 6

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR001557

National/Regional Inventories

Australia (AIIC)	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	HYACIB0025, HYACIB1000, HYACIB1500, HYACIB1600, HYACIB1893, HYACIB1895, HYACIB1897, HYACIB1900, HYACIB1901, HYACIB1902, HYACIB1903, HYACIB1904, HYACIB1940, HYACIB1941, HYACIB1959, HYACIB2000, HYACIB2100, HYACIB2200, HYACIB2300, HYACIB2500, HYACIB2510, HYACIB3000, HYACIB3001, HYACIB3002, HYACIB3003, HYACIB3004, HYACIB3005, HYACIB3006, HYACIB3007, HYACIB3012, HYACIB3016, HYACIB3050, HYACIB3060, HYACIB3200, HYACIB3500, HYACIB3600, HYACIB3700, HYACIB3701, HYACIB3702, HYACIB3703, HYACIB3705, HYACIB4000, HYACIB4005, HYACIB5000, HYACIB6000, HYACIB6700, HYACIB6900, HYACIB7500, HYACIB7900, HYACIB8000, HYACIB8001, HYACIB8100, HYACIB8500, HYACIB8501, HYACIB8502, HYACIB9000, HYACIB9500, HYACIB9600, HYACIB9601, HYACIB9602, HYACIB9603, HYACIB9604, HYACIC1000, HYACIC1001, HYACIC1300, HYACIC1500, HYACIC1861, HYACIC1893, HYACIC2000, HYACIC2001, HYACIC3000, HYACIC3001, HYACIC3002, HYACIC3003, HYACIC3004, HYACIC3005, HYACIC3006, HYACIC3007, HYACIC3008, HYACIC3050, HYACIC3070, HYACIC3300, HYACIC3400, HYACIC3700, HYACIC4003, HYACIC4004, HYACIC4400, HYACIC5000, HYACIC6000, HYACIC6300, HYACIC6301, HYACIC6500, HYACIC7300, HYACIC7500, HYACIC7501, HYACIC7502, HYACIC7505, HYACIC8000, HYACID0800, HYACID1000, HYACID1001, HYACID1002, HYACID1003, HYACID1004, HYACID1005, HYACID1006, HYACID1007, HYACID1008, HYACID1009, HYACID1010, HYACID1011, HYACID1012, HYACID1013, HYACID1014, HYACID1015, HYACID1016, HYACID1017, HYACID1018, HYACID1019, HYACID1020, HYACID1021, HYACID1022, HYACID1023, HYACID1024, HYACID1025, HYACID1026, HYACID1027, HYACID1028, HYACID1030, HYACID1200, HYACID1300, HYACID1301, HYACID1400, HYACID1500, HYACID1501, HYACID1600, HYACID1700, HYACID1701, HYACID1730, HYACID1733, HYACID1801, HYACID1802, HYACID1803, HYACID1804, HYACID1805, HYACID1806, HYACID1807, HYACID1808, HYACID1812, HYACID1813, HYACID1814, HYACID1815, HYACID1816, HYACID1817, HYACID1818, HYACID1821, HYACID1822, HYACID1823, HYACID1824, HYACID1825, HYACID1826, HYACID1827, HYACID1828, HYACID1829, HYACID1830, HYACID1831, HYACID1832, HYACID1833, HYACID1834, HYACID1835, HYACID1836, HYACID1837, HYACID1838, HYACID1839, HYACID1840, HYACID1841, HYACID1842, HYACID1857, HYACID1858, HYACID1859, HYACID1860, HYACID1861, HYACID1862, HYACID1863, HYACID1864, HYACID1865, HYACID1866, HYACID1867, HYACID1868, HYACID1869, HYACID1870, HYACID1871, HYACID1872, HYACID1873, HYACID1874, HYACID1875, HYACID1876, HYACID1877, HYACID1878, HYACID1879, HYACID1880, HYACID1881, HYACID1882, HYACID1883, HYACID1884, HYACID1885, HYACID1886, HYACID1887, HYACID1888, HYACID1889, HYACID1890, HYACID1891, HYACID1892, HYACID1893, HYACID1894, HYACID1895, HYACID1896, HYACID1897, HYACID1898, HYACID1899, HYACID1900, HYACID1901, HYACID1902, HYACID1903, HYACID1904, HYACID1905, HYACID1906, HYACID1907, HYACID1908, HYACID1909, HYACID1910, HYACID1911, HYACID1912, HYACID1913, HYACID1914, HYACID1915, HYACID1917, HYACID1919, HYACID1924, HYACID1927, HYACID1930, HYACID1932, HYACID1934, HYACID1935, HYACID1936, HYACID1937, HYACID1940, HYACID1941, HYACID1942, HYACID1943, HYACID1948, HYACID1956, HYACID1957, HYACID1958, HYACID2000, HYACID2001, HYACID2002, HYACID2003, HYACID2024, HYACID2034, HYACID2040, HYACID2100, HYACID2200, HYACID2300, HYACID2400, HYACID2500, HYACID2501, HYACID2505, HYACID2506, HYACID2507, HYACID2508, HYACID2509, HYACID2510, HYACID2600, HYACID2900, HYACID3000, HYACID3001, HYACID3002, HYACID3006, HYACID3050, HYACID3100, HYACID3500, HYACID3600, HYACID3700, HYACID3701, HYACID4000, HYACID4200, HYACID5000, HYACID5100, HYACID5500, HYACID6000, HYACID6010, HYACID6050, HYACID6500, HYACID6501, HYACID7000, HYACID7100, HYACID7200, HYACID7300, HYACID7500, HYACID8000, HYACID8100, HYACID9500, HYACID9501, HYACID9502, HYACID9503, HYACID9505, HYACID9506, HYACID9507, HYACID9508, HYACIL1000
Revision	7
Revision Date	13 Dec 2023
Reason for Issue	SDS updated
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** 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/cm^3** 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/m^3 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
m^3 Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m^3 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