

Safety Data Sheet - Sodium Hypochlorite Solution 10-30%

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Version One



1. IDENTIFICATION

Product Name	Sodium Hypochlorite Solution 10-30%, Aquachem liquid pool chlorine, Maxi chlor liquid pool chlorine
Other Names	Hypochlorite Solution; Hypochlorous acid-sodium salt; Mixture - All components listed on AICS
Uses	Dairy, Sanitizing processing equipment. Water treatment: Sanitizing agent for swimming pools. Avail. chlorine = 10-15%
Chemical Family	NoData
Chemical Formula	Available NaOCl Sodium Hypochlorite Solution * 10-30% No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation
Wobelea Pty Ltd

Location
18 Embrey Court, Pakenham Vic 3810

Telephone
(03) -5940 1077

Emergency Contact Details

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

Organisation

Location

Telephone

Poisons Information Centre

13 11 26

After hours

(03) 5997 1690 or 0427 367 561

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 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 1B
Serious Eye Damage/Irritation - Category 1
Acute Hazard To The Aquatic Environment - Category 1

Pictograms



Signal Word Danger

Hazard Statements

EUH031	Contact with acids liberates toxic gas.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.

Precautionary Statements	Prevention	P273	Avoid release to the environment.
		P264	Wash exposed skin thoroughly after handling.
		P260	Do not breathe fume/gas/mist/vapours/spray.
	Response	P280	Wear protective gloves/protective clothing/eye protection.
		P303 + P361 + P353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
		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 POISONCENTER or doctor/physician.
		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 at rest in a position comfortable for breathing.
	Storage	P321	Specific treatment (see First Aid Measures on Safety Data Sheet).
		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)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium Hydroxide	HNaO	1310-73-2	0.7 - 2.0 %
Sodium Hypochlorite	ClHO.Na	7681-52-9	10.5 (m/m as avail Cl2) %
Water	H2O	7732-18-5	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cups of water. Get medical aid immediately.
Eye	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.
Skin	Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner, which limits further exposure.
Inhaled	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration.
Advice to Doctor	Symptoms caused by exposure: Chlorine gas released from sodium hypochlorite causes irritation of respiratory system, consisting in coughing, difficult breathing, stomatitis, nausea and pulmonary edema. Contact with skin can cause skin irritation, followed by blisters and eczema (especially at 12% concentration). The eye contact causes serious damages of eyes. Ingestion of tens of grams of sodium hypochlorite solution (12% concentration) can cause mucous membrane burns, perforation of the esophagus and stomach, and laryngeal oedema. Medical Attention and Special Treatment: In case of eyes and face splashing, treat eyes firstly. Treat symptomatically and supportively.
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	Not considered to be a fire hazard. Sodium hypochlorite itself does not burn, but poisonous gases are produced in fire.
Extinguishing Media	Suitable Extinguishing Media: Water. Use water spray to cool fire-exposed containers, to dilute liquid, and control vapour.
Fire and Explosion Hazard	Contact with combustible materials can cause explosions. Hazchem Code: 2X
Hazardous Products of Combustion	Emits toxic fumes of chlorine (hypochlorous acid and sodium chlorate) when heated to decomposition. The decomposition is an exothermal process.
Special Fire Fighting Instructions	Keep containers cool with water spray. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Containers may explode when heated.
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. Please note: Structural fire fighters uniform will provide limited protection.
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	2X

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Emergency procedures, Evacuate the danger area or to consult an expert. Approach from upwind. Isolate the area. Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions. Prevent further leakage or spillage if safe to do so. Keep away from incompatible products.
Clean Up Procedures	Spills/Leaks: The spills can be neutralized using light reducing agents such as sodium sulphite sodium bisulphite or sodium thiosulphate. Do not use sulphates or bi-sulphate! Contain and recover when is possible.
Containment	Stop leak if safe to do so.
Decontamination	Special precautions: Do not use combustible materials, such as saw dust! Do not use sulphates or bisulphates for spill neutralizing! 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.

Environmental Precautionary Measures

Evacuation Criteria Evacuate all unnecessary personnel. Personal Precautionary Measures Personnel involved in the cleanup should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Protect against physical damage. Personnel which handling the product must wear protective equipment for hand, skin or eyes, and including protective breathing apparatus. Area should be well ventilated. Advice on general occupational hygiene: Avoid inhalation or ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. Chemicals should be used only by those trained in handling potentially hazardous materials. The electrical equipment should be corrosion resistant.
Storage	Keep in tightly closed containers, store in a cool, dry, well ventilated area. Isolate from incompatible substances. The aqueous solutions are sensitive to light and air. Avoid storage for long period because the product degrades over time. The recommended storing temperature is 15-25 C. Storage at 15 C reduces the rate of decomposition. This product has a UN classification of 1791 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous goods By Road and Rail.
Container	Materials used for storage tanks: <ul style="list-style-type: none"> • polyethylene; 5-7 years life time. The outdoor tanks will be UV proof. • glass fibre reinforced plastics – designed accordingly • steel rubber-lined (thickness of lining - 3/4") • steel Halar lined (Halar is a copolymer 1:1 ethylene- chlorotrifluoroethylene) ; 3-6 years life time function of quality of lining application. • titanium – the best material used for tank construction but because the high price is used only for specific applications. <p>Incompatible materials: reducing agents, combustible materials (wood, cellulose), organic materials, metals, acids. Materials to avoid: carbon steel, stainless steel, copper and its alloys, aluminium, unprotected metals.</p>

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	<p>HSIS Airborne Exposure Limits: Chlorine: TWA 1 ppm (3 mg/m³ peak limitation)</p> <p>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.</p> <p>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.</p>
Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
Engineering Measures	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.
Personal Protection Equipment	<p>RESPIRATOR: Self-contained breathing apparatus with full face-piece operated in the pressure demand. For emergencies or instances where 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 (AS1715/1716).</p> <p>EYES: Chemical splash goggles and/or face shield must be worn when possibility exist for eye contact due to splashing or spraying liquid or vapor (AS1336/1337).</p> <p>HANDS: Wear PVC, rubber or neoprene gloves. Glove thickness has to be of minimum 1.2 mm. Do not use leather gloves (AS2161).</p> <p>CLOTHING: Wear impervious protective clothing including boots, lab coat, apron or coveralls and safety footwear (AS3765/2210).</p>
Work Hygienic Practices	Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.x

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Chlorine odour
Colour	Clear, colourless
pH	>12
Vapour Pressure	2500 Pa Pa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	100 approx °C
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Miscible in water
Specific Gravity	1.09 for 5.25% - 1.21 for 12.0%
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	-3.42 (calculated value)
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	2.6 mPas (@ 20 °C)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Specific density (water=1) 1.09 for 5.25%; 1.15 for 8.0%; 1.21 for 12.0% Sodium hypochlorite solution is an aqueous mix of inorganic salts; therefore by heating of solution, water evaporates. At temperatures above 60C, the water evaporates with depositing of white crystals on the bottom of tank. For this reason the boiling point can not be determined
Potential for Dust Explosion	Product is aliquid.
Fast or Intensely Burning Characteristics	NoDataAvailable
Flame Propagation or Burning Rate of Solid Materials	NoDataAvailable
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	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

Reactivity: Reacts violently with acids with chlorine released.

General Information Possibility of Hazardous Reactions: Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate, ammonium acetate, ammonium carbonate, cellulose and methanol.

Chemical Stability Unstable. Stability decreases with concentration, heat, light exposure, decrease in pH and contamination with heavy metals, such as nickel, cobalt, copper and iron. In practice, a factor of 2 decrease in concentration produces nearly a factor of 5 decrease in decomposition rate at any given temperature with a pH range of approximately 11 to 13. At pH<11, sodium hypochlorite is unstable and decomposes with the release of chlorine. Conditions to Avoid Light, heat and incompatibles.

Materials to Avoid Incompatible materials and possible hazardous reactions: aluminum, brass, cellulose, steel, stainless steel, bronzes.

Strong acids, strong oxidizers, heavy metals (which act as catalysts), reducing agents, ammonia and ammonium salts, ether, and many organic and inorganic chemicals such as paint, kerosene, paint thinners, shellac.

Hazardous Decomposition Products

Emits toxic fumes of chlorine (hypochlorous acid and sodium chlorate) when heated to decomposition. The decomposition is an exothermal process.

Hazardous Polymerisation Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia, urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate, ammonium acetate, ammonium carbonate, cellulose and methanol.

11. TOXICOLOGICAL INFORMATION

General Information

Acute toxicity: Sodium Hypochlorite: Rat male Oral LD50 = 1100 mg/kg bw (for sodium hypochlorite sol.. 12% free chlorine). Mouse male Oral LD50, = 880 mg/kg bw (for sodium hypochlorite sol.. 12% free chlorine). Other routes : intra-peritoneal Rat LD 50, (1h) > 10,7 mg/L air, causes abundant tearing. Rabbit male/female LD50, >20 g/kg bw. Causes serious skin irritation. Mouse LD= 240-250mg/kg bw, Guinea pig LD: 63 mg/kg bw. Repeated dose toxicity: Oral NOAEL: 50 mg/kg bw/day

Respiratory or skin sensitisation: Not sensitising

Germ cell mutagenicity: No genetic toxicity effects

Carcinogenicity: No carcinogenic potential

Reproductive toxicity: Sodium hypochlorite has no genotoxic potential, therefore no classification is required

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according to 67/548/EEC and 1272/2008/EC (CLP) requirements.

Information on Possible routes of exposure: Ingestion, Inhalation, Skin/ eye exposure.

Interactive Effects: Sodium hypochlorite reacts rapidly with the organic molecules and cellular components, forming organic chlorinated compounds which have their own toxicity (BIBRA 1990)

Eye/Irritant	Causes eye damage. Eye damage, category 1. Eye contact causes serious burns and discomfort.
Ingestion	Causes severe pain, nausea, vomiting, diarrhoea, and shock. May cause haemorrhaging of the digestive tract. May cause corrosion and permanent tissue destruction of the oesophagus and digestive tract. May be harmful if swallowed.
Inhalation	Irritant. Inhalation of sprayed solution and vapours can cause respiratory system irritation caught, difficulty of breathing, stomatitis, nausea and pulmonary edema. Classified as STOT Single Exposure 3.
Skin/Irritant	Light irritant at low concentrations. Moderate irritant at medium concentrations (>5%). Corrosive at concentration higher than 10%. Skin corrosive category 1B.
Chronic	
Other	Prolonged inhalation may cause respiratory tract inflammation and lung damage. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis to serious eye damage.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity

Tests demonstrate NOEC (7 days)= 0,0021 mg/L. Factor M=10.

Short-term toxicity to invertebrates (molluscs, Daphnia magna, Ceriodaphnia dubia)

- Fresh water: EC50/LC50=0,141 mg/L

- Marine water: EC50/LC50=0.026 mg/L

Long-term toxicity to invertebrates

- Marine water: LC100 (36days) 0,005mg/L

- NOEC for aquatic invertebrates = 0.007 mg/L

Short-term toxicity to fish

- Fresh water LC 50 =0,06 mg/l

- Marine water LC 50= 0.032 mg/l

Long-term toxicity to fish

- Marine water: NOEC= 0,04 mg CPO/L

Short-term toxicity to algae and aquatic plants: Not applicable, sodium hypochlorite decomposes rapidly. Long-term toxicity to algae and aquatic plants

- Fresh water EC50/LC50=0,1 mg/l

- Marine water EC10/LC10 or NOEC =0,02 mg/L PNEC (Predicted No Effect

Concentration)

PNEC fresh water = Minimum long-term aquatic toxicity/10 = 0.21 µg/L PNEC marine water = Minimum long-

term aquatic toxicity /50 = 0.042 µg/L Toxicity to sediment micro-organisms

There are not predicted exposures due to the fact that sodium hypochlorite is destroyed quickly by oxy-reduction. Sodium hypochlorite can not exist in presence of organic carbon.

PNEC=0 fresh water sediment / marine water sediment. Terrestrial toxicity

Short/long-term toxicity to terrestrial invertebrates

Substance is not absorbed in soil and is not persistent in soil. TD50<1 min, PEC/PNEC soil<1. Toxicity to soil micro-organisms

Short/long term toxicity to plants

Due to the fact that PEC/PNEC for terrestrial toxicity is <1 and at contact with soil hypochlorite dissipates quickly (TD50

<1 min) there is not estimated short/long toxicity to plants. In accordance with column 2 of REACH Annexes IX and X, there is no need to further investigate the effects of the substance on plants.

Long-term toxicity to birds

EC10/LC10 or NOEC on long term : 200 mg/kg food

Persistence/

Degradability

Biotic: The inorganic water cannot be tested for biodegradability.

Abiotic: Hypochlorite degrades quickly during the transport through sewage system. Photo-transforming (Photolysis)

Atmospheric degradation: At medium pH (6, 5-8, 5) value, half of sodium hypochlorite is present as hypochlorous acid and the other half is dissociate as hypochlorite ions. In the atmosphere, hypochlorous acid degrades, generating atomic chlorine, which is destroyed by UV radiation. The half life is 15 days. Does not react with ozone layer.

Photolysis in water

Half-life for sodium hypochlorite solution, active chlorine 12-15%, at 25°C is 220 days. In presence of light, the half-life decreases 3-4 times. The UV radiation decomposes the hypochlorite, generating chlorate, chlorite and oxygen:

$3 \text{ ClO}^- \Rightarrow \text{ClO}_3^- + 2 \text{ Cl}^-$ (1)

$2 \text{ ClO}^- \Rightarrow 2 \text{ Cl}^- + \text{O}_2$ (2)

In water, under photolysis, sodium hypochlorite with concentration of 13-18 mg/L, has a half-life of 12 min. at pH =8. This increases up to 60 min. with pH decreasing

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Mobility	At medium pH (6,5-8,5) value, half of sodium hypochlorite is present as hypochlorous acid and the other half is dissociate as hypochlorite ions. The absorption of hypochlorous acid particles, the air volatilization and soil absorption are very low. Thus, hypochlorite remains in aqueous phase and degrades to chlorine.
Environmental Fate	Do NOT let product reach waterways, drains and sewers.
Bioaccumulation Potential	Hypochlorite reacts instantaneously with organic and oxidant materials. Has not potential for bioaccumulation. PBT/vPvB: Hypochlorite does not fulfil the PBT criteria (not PBT) and not the vPvB criteria (not vPvB).
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. Waste packaging should be recycled. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice. Incineration or landfill should only be considered when recycling is not feasible.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG

Proper Shipping Name	HYPOCHLORITE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	1791
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	HYPOCHLORITE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And / Or Corrosive Substances Non-Combustible
UN Number	1791
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG

Proper Shipping Name	HYPOCHLORITE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1791
Hazchem	2X
Pack Group	III
Special Provision	No Data Available
EMS	FA,SB
Marine Pollutant	Yes

Air Transport

IATA

Proper Shipping Name	HYPOCHLORITE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1791
Hazchem	2X
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)	6

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

Approval Code	Not Assessed
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National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	231-668-3
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

Key/	< Less Than
Legend	> 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. LC ₅₀ 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. LD ₅₀ 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

Disclaimer:

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. Wobelea 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.

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***** END OF SDS *****