



# PRICE CHEMICALS PTY LIMITED

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## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION

**Revision Date** JULY 2011

**Product Name** HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

**Other Names** HYDROGEN PEROXIDE; HYDROGEN PEROXIDE SOLUTION;

**Uses** Used as an oxidant in bleaching paper pulp, cotton, cotton/synthetic blends and wool fabrics. Used in wastewater and sewage treatment plants to reduce sulphide corrosion and odours and to supply supplemental dissolved oxygen.

#### Contact Information

Organisation	Location	Telephone	Ask For
Price Chemicals Pty Ltd	10 Pile Rd Somersby NSW 2250 Australia	+61 2 43400088	Technical Officer
Poison Information Centre	Westmead NSW Australia	131126	
Chemcall 24 Hour Emergency Number	Australia New Zealand	1800-127406 0800-243622	
National Poisons Centre	New Zealand	0800-764766	

### 2. HAZARD IDENTIFICATION

Hazardous according to criteria of NOHSC/ASCC.

Dangerous According to the Australian Code for the Transport of Dangerous Goods.

Classified as Dangerous Goods According to NZS 5433:1999.

OXIDIZING CORROSIVE

#### Risk Phrases

- R8 Contact with combustible material may cause fire.
- R20/22 Harmful by inhalation and if swallowed.
- R34 Causes burns.

## Safety Phrases

S17	Keep away from combustible material.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28:HYPERO	After contact with skin, wash immediately with plenty of soap and water.
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).

ERMA New Zealand Approval Code HSR001326

HSNO Hazard Classification 5.1.1B 6.1D 6.9B 8.2B 8.3A 9.1D 9.3C

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA Web Site should be consulted for a full list of triggered controls and cited regulations.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

Chemical Entity	CAS Number	Proportions (%)
HYDROGEN PEROXIDE	[7722-84-1]	20.0-60.0
WATER	[7732-18-5]	40.0-80.0

## 4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure.

**Swallowed** General Advice: Observe self-protection (eye protection, body protection). DO NOT induce vomiting. Danger of penetration of the lungs when swallowed or vomited, due to gas evolution and foam formation. Rinse mouth with water and give plenty of water to drink provided person is conscious and alert. Seek immediate medical attention.

**Eye** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical treatment at an ophthalmologist.

**Skin** Wash affected area with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear immediately. Consult a physician. Thoroughly wash clothing and protective equipment before re-use or discard.

**Inhaled** Remove victim from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

**Advice to Doctor** Treat symptomatically based on judgement of doctor and individual reactions of patient. Therapy as for chemical burn. Following inhalation: formation of a toxic lung oedema is possible if product continues to be inhaled despite acute irritative effect (e.g if it is not possible to leave the danger area). Prophylaxis of a toxic lung oedema with inhalative steroids (Dexamethasone aerosol dosing spray, f.ex.auxilosone). If substance has been swallowed; risk of gaseous embolisms! In case of excessive strain on the stomach due to gas evolution, inert siphon tube. Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, suck away left over substance. Do not administer activated charcoal, since risk of release of large amounts of gas from hydrogen peroxide.

**Aggravated medical conditions caused by exposure** No information available on medical conditions aggravated by exposure to this product. Genotoxicity in Vitro: Micro organisms, cell cultures. Mutagenic/genotoxic effects (Literature) In the presence of metabolic systems no mutagenic effects were observed. Genotoxicity in Vivo : Micronucleus test mouse intraperitoneal (i.p.) Negative (OECD TG 474) : Micronucleus test (mouse) Oral. Negative (Literature) : Unscheduled DNA synthesis-test (UDS) rat Negative (Literature)

## 5. FIRE FIGHTING MEASURES

**Extinguishing Media** In case of fire, appropriate extinguishing media include water spray and carbon dioxide. Do not use organic compounds. In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely, or in the case of fire, cool the containers that are at risk with water or dilute with water (flooding). With a large scale fire, violent decomposition or even explosion is possible.

**Hazards from Combustion Products** Product is fire-stimulating. Contact with flammable substances may cause inflammation. The product itself does not burn. Risk of over pressure and burst due to decomposition in confined spaces and pipes. Incompatible with metals, alkalis, reducing agents, organic solvents (risk of explosion), flammable substances (risk of fire), impurities, metallic salts (risk of decomposition), decomposition catalysts, hydrochloric acid, and sources of heat and ignition. Danger of decomposition if exposed to heat. Decomposition products under conditions of thermal decomposition include steam and oxygen. release of oxygen may support combustion. The product is very reactive. When coming in contact with the product, impurities, decomposition catalysts, metallic salts, alkalis, reducing agents may lead to self-accelerated, exo- thermic decomposition and the formation of oxygen.

**Special Protective Precautions and Equipment for Fire Fighters** 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. 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. Ensure there are sufficient retaining facilities for water used to extinguish fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities. Fire residues should be disposed of in accordance with the regulations.

**Flammability Conditions** Strong oxidising agent. Product is fire-stimulating.

Additional Information

**Hazchem Code** 2P

## 6. ACCIDENTAL RELEASE MEASURES

**Emergency Procedures** Personnel involved in the clean up should wear full protective clothing as listed in section 8. Evacuate personnel to safe areas. Keep out unprotected persons. Keep unauthorised persons away. Product causes chemical burns. Make safe or remove all sources of ignition. Isolate defective containers immediately, if possible and safe to do. Shut off leak, if possible and safe to do. Keep away from flammable substances. Keep away from incompatible substances. Observe regulations on prevention of water pollution (check, dam up, cover up). Do not permit to enter into surface water, stretches of water, soil undiluted. Dam with sand or earth. Do NOT use: textiles, saw dust, combustible substances.

**Methods and Materials for Containment and Clean Up** The recommended dilution/flushing agent: Water. To handle a small quantity of spilt product, dilute with copious amounts of water to <3%. Drain to an approved chemical sewer, waste treatment system or municipal sewer; OR In the case of a larger spill or where there is insufficient water available for dilution, contain the spill and leave to decompose naturally until <3% is reached. Keep away from flammable substances. Keep away from incompatible substances. Rinse away any residue with plenty of water. Place defective containers in waste receptacle (waste packaging receptacle) made of plastic (not metal). Do not seal defective containers or waste receptacles

airtight (danger of bursting due to product decomposition). Never return spilled product into its original container for re-use (risk of decomposition).

## 7. HANDLING AND STORAGE

**Precautions for Safe Handling** This substance must be under the control of an Approved Handler. Handle in accordance with good industrial hygiene and safety practice. Avoid impurities and heat effect. Ensure peroxide storage and work areas are well ventilated. Avoid contact with skin, eyes and clothing. Do not inhale vapour, aerosols, mist. Wear personal protective equipment as listed in section 8. Immediately change moistened and saturated work clothes. Immediately rinse contaminated or saturated clothing with water. Provide for installation of emergency shower and eyewash. Set up safety and operation procedures. Regularly verify the availability of water to deal with emergencies and check correct operation periodically. Do NOT confine product in unvented vessels or between closed valves. DO NOT confine product in unvented containers. Always close container tightly after removal of product. Ensure tightness at all times. Avoid leakage. Avoid residues of the product on the containers. Do NOT empty container by means of pressure. Prior to the first filling and operation of a tank installation, all pipes must be thoroughly cleaned and flushed through.

**Conditions for Safe Storage (Including Any Incompatibles)** Store in a cool, dry, clean, well-ventilated area. Store on Jointless, smooth concrete floor. Recommendation: Acid-proof floor. Packages, containers and tanks should regularly be checked by visual observation for any sign of abnormality e.g. corrosion, exert pressure (bulging), temperature increase etc. Transport and store container in upright position only. Always close container tightly after removal of product. DO NOT confine product in unvented containers. Ensure tightness at all times. Avoid leakage. Store away from incompatible materials as listed in section 10. Prior to the first filling and operation of a tank installation, all parts of the facility, including all pipes, must be thoroughly cleaned and flushed through. Metal elements of the installation must first be pickled and passivated sufficiently. Measures for storing in tank installations should include at least Temperature measurement, Earthing (grounding), bund in case of leakage. This product has a UN classification of 2014 and a Dangerous Goods Class 5.1 Oxidiser according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.

**Container Type** Only use containers which are specially permitted for: hydrogen peroxide and/or For transport, storage and tank installations, only use suitable materials: 304L and 316L stainless steel, aluminium: min. 99.5% passivated, aluminium magnesium alloys, passivated, polyethylene, polypropylene. Unsuitable materials: Iron, mild steel, copper, bronze, brass, zinc, tin. Use adequate venting devices on all packages, containers and tanks and check correct operation periodically. Do NOT confine product in unvented vessels or between closed valves. Risk of overpressure and burst due to decomposition in confined spaces and pipes. DO NOT confine product in unvented containers.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**National Exposure Standards** The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC); Hydrogen Peroxide Solution CAS 7722-84-1: TWA = 1ppm (1.4mg/m<sup>3</sup>) 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. 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.

**Biological Limit Values** No information available on biological limit values for this product.

**Engineering Controls** 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.

**Personal Protection** RESPIRATOR: If workplace exposure limit is exceeded apply Respiratory protective equipment. If open handling is unavoidable wear self-contained breathing apparatus: Respirator with A2B2E2K192 combination filter ( Draeger); ABEK2P3 combination filter (3M); or OV/AG combination filter (3M) (AS1715/1716). EYES: Tight fitting chemical splash goggles and full face shield (AS1336/1337). HANDS: Gloves of synthetic rubber (neoprene, butyl rubber or vinyl) (AS2161). CLOTHING: Wear synthetic clothing. Avoid natural fibre clothing such as cotton, rayon or wool. Use full rain suit or 'acid' suit of neoprene, PVC, butyl rubber or polyethylene when appropriate to avoid exposure to peroxide. Wear a hard hat with brim, boots of synthetic rubber (neoprene, butyl rubber or vinyl). Do NOT wear leather shoes or boots as they can catch fire (AS3765/2210).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** Colourless, Clear Liquid

**Formula** H<sub>2</sub>O<sub>2</sub>

**Odour** Slightly Pungent

**Vapour Pressure** 2400Pa (30°C) mm Hg (1 atmosphere)

**Vapour Density** Not applicable.

**Boiling Point** 114°C deg C

**Melting Point** -52°C deg C

**Solubility in Water** Completely Miscible

**Specific Gravity** 1196g/cm<sup>3</sup> (20°C) (Water = 1)

**Flash Point** Test Unknown Does not flash

**pH** >1-3 (20°C)

**Lower Explosion Limit** Not applicable.

**Upper Explosion Limit** Not applicable.

**Ignition Temperature** Not applicable.

**Specific Heat Value** Not applicable.

**Particle Size** Not applicable.

**Volatile Organic Compounds (VOC) Content** Not applicable.

**Evaporation Rate** Not applicable.

**Viscosity** 1.9mPa.s (0°C)

**Percent Volatile** Not applicable.

**Octanol/Water partition coefficient** Not applicable.

**Saturated Vapour Concentration** Not applicable.

**Additional Characteristics** Not applicable.

**Flame Propagation/Burning Rate of Solid Materials** Not applicable.

**Properties of Materials That May Initiate or Contribute to Fire Intensity** Not applicable.

**Potential for Dust Explosion** Product is a liquid.

**Reactions that Release Flammable Gases** Not applicable. ]

**Fast or Intensely Burning Characteristics** Not applicable.

**Non-flammables That Could Contribute Unusual Hazards to a Fire** Risk of explosion with organic solvents.

**Release of Invisible Flammable Vapours and Gases** Not applicable.

**Decomposition Temperature** Not applicable.

**Additional Information** Molecular Weight: 34.02g/Mol Other Info : Oxidising Agent - Oxidising.

## 10. STABILITY AND REACTIVITY

**Chemical Stability** Product is stable under normal conditions of use, storage and temperature. Product is a strong oxidizing agent. Product is very reactive. Commercial products are stabilized to reduce risk of decomposition due to contamination.

**Conditions to Avoid** Avoid excessive heat, elevated temperatures, sunlight, flame, sources of ignition and shock, dust generation, moisture/high humidity, contamination with combustible materials and incompatible materials.

**Incompatible Materials** Incompatible with metals, alkalis, reducing agents, organic solvents (risk of explosion), flammable substances (risk of fire), impurities, metallic salts (risk of decomposition), decomposition catalysts, hydrochloric acid, and sources of heat and ignition.

**Hazardous Decomposition Products** Danger of decomposition if exposed to heat. Decomposition products under conditions of thermal decomposition include steam and oxygen. Release of oxygen may support combustion. The product is very reactive. When coming in contact with the product, impurities, decomposition catalysts, metallic salts, alkalis, reducing agents may lead to self-accelerated, exothermic decomposition and the formation of oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes.

**Hazardous Reactions** Product is strong oxidising agent. Product is very reactive. Stable under recommended storage conditions. Commercial products are stabilised to reduce risk of decomposition due to contamination. Danger of decomposition if exposed to heat. When coming in contact with the product, impurities, decomposition catalysts, metallic salts, alkalis, reducing agents may lead to self-accelerated, exothermic decomposition and the formation of oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Release of oxygen may support combustion. Mixtures with organic materials (solvents) can display explosive properties.

## 11. TOXICOLOGICAL INFORMATION

**Toxicity Data** Oral LD50 Rat: 805mg/Kg (OECD Test Guideline 401) Oral LD50 Rat: 1193mg/Kg (Test Substance: hydrogen peroxide, 35%) Oral LD50 Rat: 801mg/Kg (Test Substance: hydrogen peroxide, 60%) Inhale LC50 Rat: >0.17mg/L/4hr (Test Substance: hydrogen peroxide, 50%) Skin LD50 Rabbit: >6500mg/Kg (Literature) Skin Irritation Rabbit: Strong corrosive (Literature) Eye Irritation Rabbit: Corrosive (Literature) Repeated Dose Toxicity: Mouse Test Period: 60d. Subsequent Observation Period: 6 wks: Changes of parameters of the blood, body, weight development negative, irritative effect: Gastrointestinal tract. Carcinogenicity : To date there is no evidence of increased tumour risk. Hydrogen Peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH. Sensitization : Maximisation test guinea pig: not sensitizing.

Health Effects – Acute

**Swallowed** Swallowing can lead to bleeding of the mucosa in the mouth, oesophagus and stomach. The rapid releasing of oxygen can cause distension and bleeding of the mucosa in the stomach and lead to severe damage of the internal organs, especially in the event of greater intake of the product.

**Eye** Extreme irritation up to cauterisation. Can cause severe conjunctivitis, cornea damage or irreversible eye damage. Symptoms may occur with delay after any exposure.

**Skin** Causes caustic burns. With increasing contact length, local erythema or extreme irritation (whitening) up to blistering (caustic burn) can occur.

**Inhaled** Inhalation of vapour/aerosols can lead to irritation of the respiratory tract and cause inflammation of the respiratory tract and pulmonary oedema. Symptoms may occur with delay after any exposure.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Fish *Ictalurus Punctatus* LC50 96hr: 37.4mg/L (Literature) 100% product Fish *Ictalurus Punctatus* LC0 96hr: 17mg/L (Literature) 100% product Fish *Oncorhynchus Mykiss* LC50 24hr: 31.3mg/L (Literature) 100% product *Daphnia Magna* EC50 24hr: 7.7mg/L (Literature) 100% product *Daphnia Magna* EC0 24hr: 3.8mg/L 100% product *Algae Chlorella Vulgaris* IC50 72hr: 2.5mg/L (OECD TG 201) 100% product *Algae Chlorella Vulgaris* NOEC 72hr: 0.1mg/L (OECD TG 201) 100% product *Algae Blue-green Algae* IC94 48hr: 1.7mg/L (Literature) 100% product *Bacteria Pseudomonas Putida* EC10 16hr: 11mg/L (DEV,DIN 38412, T.8) **Terrestrial Plant** *Ceratophyllum* EC80 7d: 34mg/L **Further Information:** AOX: The product does not contain any organically bonded halogen. Does not contain any heavy metals and compounds from EC directive 76/464.

**Persistence and Degardability** Photo-decomposition: 50% degradation within approx. 20 hours; medium: air **Physico-chemical Removability:** The product can be degraded by abiotic (e.g. chemical or photolytic) processes. **Further information:** Under ambient conditions quick hydrolysis, reduction of decomposition occurs. The following substances are formed: oxygen and water.

**Mobility** No information available on mobility for this product. Completely Miscible

**Environmental Fate (Exposure)** Do NOT let product reach waterways, drains and sewers. **MARINE POLLUTANT** This material is classified as a marine Pollutant according to the International Maritime Dangerous Goods Code.

**Bioaccumulative Potential** None.. Hydrogen peroxide quickly decomposes to oxygen and water.

## 13. DISPOSAL CONSIDERATIONS

**Disposal** 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. Rinse empty containers before disposal; recommended cleaning agent: water. Offer rinsed packaging material to local recycling facilities. Do NOT dispose of containers that have not been emptied completely and/or cleaned of substance.

**Special Precautions for Land Fill or Incineration** Contact a specialist disposal company or the local waste regulator for advice. This should be done in accordance with 'The Hazardous Waste Act'. Recommendation: Dilute with copious amounts of water to <3% strength. Drain to an approved chemical sewer, waste treatment system or municipal sewer. Offer surplus and non-recyclable solutions to a reputable disposal company. If necessary: Because of recycling/disposal contact the relevant authorities. Do NOT remove by effluent disposal truck (not adequately vented or of compatible material).

## 14. TRANSPORT INFORMATION

Land Transport (Australia)

**Regulation Name** ADG

**UN Number** 2014

**Shipping Name** HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

**Dangerous Goods Class** 5.1 Oxidising Agent (not an organic peroxide)

**Subsidiary Risk** 8 Corrosive Substance

**Pack Group II**

**Precaution for User** OXIDIZING CORROSIVE

**Hazchem Code** 2P

**EPG** 31 OXIDIZING SUBSTANCES

**Special Provision** Not applicable.



Sea Transport

**Regulation Name** IMDG

**UN Number** 2014

**Shipping Name** HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

**Dangerous Goods Class** 5.1 Oxidising Agent (not an organic peroxide)

**Subsidiary Risk** 8 Corrosive Substance

**Pack Group II**

**Precaution for User** OXIDIZING CORROSIVE

**Hazchem Code** No data available.

**EPG** 31 OXIDIZING SUBSTANCES

**Special Provision** Not applicable.



Air Transport

**Regulation Name** IATA

**UN Number** Not applicable.

**Shipping Name** FORBIDDEN

**Dangerous Goods Class** Not applicable.

**Subsidiary Risk** Not applicable.

**Pack Group** Not applicable.

**Precaution for User** OXIDIZING CORROSIVE

**Hazchem Code** No data available.

**EPG** No data available.

**Special Provision** A2, A75

Land Transport (New Zealand)

**Regulation Name** NZS5433

**UN Number** 2014

**Shipping Name** HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

**Dangerous Goods Class** 5.1 Oxidising Agent (not an organic peroxide)

**Subsidiary Risk** 8 Corrosive Substance

**Pack Group** II

**Precaution for User** OXIDIZING CORROSIVE

**Hazchem Code** 2P

**EPG** 31 OXIDIZING SUBSTANCES

**Special Provision** Not applicable.



## 15. REGULATORY INFORMATION

**Poisons Schedule** 6

**EPG** 31

**AICS Name** HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>)

**NZ Toxic Substance** 3

**HSNO Hazard Classification** 5.1.1B 6.1D 6.9B 8.2B 8.3A 9.1D 9.3C

**ERMA Approval Code** HSR001326

## 16. OTHER INFORMATION

**Literature References** No data available.

**Sources for Data** No data available.

## Legend to Abbreviations and Acronyms

< less than

> greater than

**ADG** Australian Dangerous Goods Code

**AICS** Australian Inventory of Chemical Substances

**CAS** Chemical Abstracts Service (Registry Number)

**cm<sup>2</sup>** square centimetres

**CO<sub>2</sub>** Carbon Dioxide

**COD** Chemical Oxygen Demand

**deg C ( °C )** degrees Celsius

**ERMA** Environmental Risk Management Authority

**g** gram

**g/cm<sup>3</sup>** grams per cubic centimetre

**g/l** grams per litre

**HSNO** Hazardous Substance and New Organism

**IATA** International Air Transport Association Dangerous Goods Regulations

**IDLH** Immediately Dangerous to Life and Health

**IMDG** International Maritime Dangerous Goods Code

**immiscible** liquids are insoluble in each other

**kg** kilogram

**kg/m<sup>3</sup>** kilograms per cubic metre

**LC<sub>50</sub>** LC stands for lethal concentration. LC<sub>50</sub> 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.

**LD<sub>50</sub>** LD stands for Lethal Dose. LD<sub>50</sub> 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** Litre

**m<sup>3</sup>** cubic metre

**mbar** millibar

**mg** milligram

**mg/24H** milligrams per 24 hours

**mg/kg** milligrams per kilogram

**mg/m<sup>3</sup>** milligrams per cubic metre

**Misc** miscible

**miscible** liquids form one homogeneous liquid phase regardless of the amount of either component present

**mm** millimetre

**mPa.s** milli Pascal per second

**N/A** Not Applicable

**NOHSC** National Occupational Health and Safety Commission  
**OECD** Organization for Economic Co-operation and Development  
**PEL** Permissible Exposure Limit  
**ppb** parts per billion  
**ppm** parts per million  
**ppm/2h** parts per million per 2 hours  
**ppm/6h** parts per million per 6 hours  
**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 (number)  
**wt** weight

This MSDS summarises Price Chemicals Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Price Chemicals Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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