

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Hydrogen Peroxide 50% Solution

Other Identifier: No other names identified

Recommended Use: For industrial use, For oxidation, Manufacture of substances

Supplier: Big Bubble
ABN: 51 290 656 636

Street Address: 18 Elliott Street
Midvale
Western Australia

Telephone Number: +61 08 9274 1992

Poisons Information Centre: 131 126 Australia

2. HAZARDS IDENTIFICATION

Road and Rail; Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; DANGEROUS GOODS.

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Oxidizing liquids (Category 1)
Acute toxicity, Oral (Category 4)
Skin corrosion (Category 1)
Serious eye damage (Category 1)

Pictogram



Name of pictogram
Oxidising



Corrosive



Exclamation

Signal Word

Danger

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Hazard Statements

H271 May cause fire or explosion; strong oxidiser.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.

Precautionary Statement

Prevention

P210 Keep away from heat.
P221 Take any precaution to avoid mixing with combustibles.
P280 Wear protective gloves / protective clothing / eye protection / face protection.

Response

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
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.
P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P310 Immediately call a POISON CENTER or doctor / physician.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Storage

P410 + P403 Protect from sunlight. Store in well ventilated place.

Disposal

P501 Dispose of contents / container to an approved waste disposal plant.

Poisons Schedule:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Classification	Proportion
Hydrogen Peroxide	7722-84-1	Ox. Liq. 1; Acute Tox. 4; Skin Corr. 1; Eye Dam. 1; H271, H302, H314, H332	50%
Water	7732-18-5		50%

4. FIRST AID MEASURES

Ingestion:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek immediate medical assistance.
Eye Contact:	In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical assistance.
Skin Contact:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician. Launder clothing before reuse.
Inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Medical attention and special treatment:	The most important known symptoms and effects are described in Section 2.2 and/or Section 11.
First Aid Facilities	Eye wash facilities and safety shower should be available.

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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, alcohol-resistant foam, dry powder, carbon dioxide (CO ₂). Do NOT use organic compounds. In the case of fire, cool the containers that are at risk with water or dilute with water (flooding).
Hazardous combustion products:	Risk of overpressure and burst due to decomposition in confined spaces and pipes. With large-scale fire, violent decomposition or even explosion is possible. Strong oxidising agent. Product is fire-stimulating. The product itself does not burn. Involved in fire, it may decompose to yield oxygen. Release of oxygen may support combustion.
Precautions for fire fighters and special protective equipment:	Wear self-contained breathing apparatus and suitable protective clothing.
Hazchem Code:	2P

6. ACCIDENTAL RELEASE MEASURES

Personal precautions and protective equipment:	Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.
Methods and materials for Containment and clean up:	Slippery when spilt. Avoid accidents, clean up immediately. Eliminate all sources of ignition. Use clean, non-sparking tools and equipment. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. With small spills – dilute product with lots of water and rinse away. Prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Do not use textiles, saw dust or combustible substances. Collect and seal in properly labelled containers or drums for disposal according to local regulations (see Section 13). Never return spilled product into its original container for re-use.

7. HANDLING AND STORAGE

This material must be stored, maintained and used in accordance with the relevant regulations.

Precautions for safe handling:	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Keep away from sources of ignition - No smoking. Wear personal protective equipment. For personal protection see section 8.
Conditions for safe storage:	For precautions see Section 2.2. Store in a cool, dry, well-ventilated area. 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. Protect against physical damage. Store away from incompatible materials as listed in section 10. Jointless smooth concrete floor. Recommendation: Acid-proof floor. Only use containers which are specially permitted for: hydrogen peroxide and/or for transport, storage and tank installations.

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Use adequate venting devices on all packages, containers and tanks and check correct operation periodically. Do not confine product in un-vented vessels or between closed valves. Risk of overpressure and burst due to decomposition in confined spaces and pipes.

Transport and store container in upright position only.

Avoid sunlight and heat. Keep away from sources of ignition - No smoking. Keep away from flammable substances. Keep away from incompatible substances.

Measures for storing in tank installations should include at least: Compatible materials, adequate separation, adequate venting area, venting devices, temperature measurement, earthing (grounding), bund in case of leakage. 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.

Regularly verify the availability of water to deal with emergencies (for cooling, tank flooding, fire fighting) and check correct operation periodically.

Do not store together with: alkalis, reductants, metallic salts (risk of decomposition), organic solvents.

This material is classified as a Dangerous Goods Class 5.1 (Oxidiser) and a Subsidiary Risk 8 (Corrosive) Substance by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure control measures:

Hydrogen Peroxide: TWA Peak Limitation 1PPM 1.4mg/m³
As published in "Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA.

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 Workplace 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 workplace 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 Monitoring

None allocated for this product.

Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

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Personal Protective Equipment	The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.
Eye and Face	Tight fitting chemical splash goggles and full face shield or basket shaped glasses. See Australian Standards (AS/NZS 1336 & 1337).
Skin	Wear protective gloves (Natural rubber: 1mm thickness. Break through time >480 min / Nitrile rubber: 0.33mm thickness. Break through time > 480 min / Butyl-rubber: 0.7mm thickness. Break through time > 480 min) and protective, acid-proof clothing (splash apron or equivalent chemical impervious outer garment and rubber boots) appropriate for the risk of exposure. See Australian Standards (AS 2161, AS 3765 & AS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands. Wash contaminated clothing and other protective equipment before storage or re-use.
Respiratory	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS 1715 & AS 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Colour:	Clear, colourless
Auto Ignition temperature:	No Data Available
Decomposition Temperature:	114°C @ 1013 hPa
Evaporation Rate:	No Data Available
Flammability:	No Data Available
Flash Point:	No Data Available
Initial Boiling Point:	108°C
Melting/Freezing Point:	-52.2°C
Freezing Point:	No Data Available
Odour:	Slight Odour
Odour Threshold:	No Data Available
Partition coefficient: n-octanol/water	No Data Available
pH:	≤ 3.5
Relative Density:	No Data Available
Solubility:	Miscible
Specific Gravity:	1.195 @ 20°C
Upper Flammability Limit	No Data Available
Lower Flammability Limit:	No Data Available
Explosive limits:	No Data Available
Vapour density:	1
Vapour pressure;	48 Pa (H ₂ O ₂) / 3070 Pa (H ₂ O ₂ & water) @ 30°C
Viscosity:	No Data Available
Biopersistence:	No Data Available
Crystallinity:	No Data Available
Dustiness:	No Data Available
Particle size:	No Data Available
Redox potential:	No Data Available
Release of invisible flammable vapours and gases	No Data Available
Saturated Vapour Concentration	No Data Available

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10. STABILITY AND REACTIVITY

Chemical stability:	Product is an oxidising agent and reactive. Stable under recommended storage conditions. Commercial products are stabilised to reduce risk of decomposition due to contamination.
Conditions to avoid:	Sunlight and heat
Incompatible materials:	Metals (brass, copper, copper alloys, powdered metals, iron and iron salts), alkalis, hydrochloric acid, reducing agents, decomposition catalysts, impurities, flammable substances & organic solvents.
Hazardous decomposition products:	Decomposition products under conditions of thermal decomposition: steam, oxygen. Release of oxygen may support combustion.
Hazardous reactions or Polymerisation:	Hydrogen peroxide solutions ($\geq 30\%$) are strong oxidizing agents capable of reacting explosively with many substances. The degree of hazard associated with hydrogen peroxide depends on concentration. Some organic compounds react with hydrogen peroxide to form unstable peroxides. Contact with combustible materials (e.g. wood, paper, textiles, oil, grease) may cause spontaneous fire or explosion. Drying of concentrated hydrogen peroxide on clothing or other combustible materials may cause fire. Reaction with strong bases (e.g. potassium hydroxide or sodium hydroxide) may be violently explosive. Mixtures with $\geq 35\%$ hydrogen peroxide with nitric acid ($> 50\%$) or sulphuric acid can explode violently. Contact with organic compounds (e.g. carboxylic acids and anhydrides, nitrogen-containing bases, aldehydes, ketones, ethers, alcohols, charcoal, organic dust) may result in spontaneous combustion, violent decomposition and/or explosion. Contact with metals (powdered or metal surfaces), metal oxides, metal sulphides, metal salts, or iodates may cause violent decomposition. Reaction with reducing agents (e.g. metal hydrides) may be violent. May attack or ignite some forms of plastics, rubber, or coatings. Very concentrated hydrogen peroxide may react explosively when in contact with potassium permanganate. Soluble fuels (acetone, ethanol, glycerol) will detonate on admixture with peroxide of $> 30\%$ concentration, the violence increasing with concentration.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Exposure Limits:	The substance can be absorbed into the body by skin & eye contact, ingestion and by inhalation.
Ingestion:	Causes burns. 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 contact:	An eye irritant. Causes burns. Extreme irritation up to cauterisation. Can cause severe conjunctivitis, cornea damage or irreversible eye damage. Symptoms may occur with delay.

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Skin contact:	Causes burns. Causes caustic burns. With increasing contact time, local erythema or extreme irritation (whitening) up to blistering (caustic burn) can occur.
Inhalation:	Causes burns. 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.
Acute Toxicity:	No data available Inhalation: No data available Dermal: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Avoid contaminating waterways. Toxicity to fish C. carpio, LC50: 42 mg/L/48h Pimephales promelas, LC50: 16.4 mg/L/96h Toxicity to daphnia & other aquatic invertebrates Daphnia magna, EC ₅₀ : 7.7 mg/L/24h Chlorella vulgaris, IC ₅₀ : 2.5 mg/L/72h Crustaceans, EC ₅₀ : 2.4 mg/L/48h
Persistence and degradability	Readily biodegradable. Decomposition products: water and oxygen. Abiotic degradation: - air, indirect photo-oxidation, t 1/2 from 16 - 20 h, sensitizer: OH radicals; - water, redox reaction, t 1/2 from 25 - 100 h, mineral and enzymatic catalysis, fresh water; - water, redox reaction, t 1/2 from 50 - 70 h, mineral and enzymatic catalysis, salt water; - Soil, redox reaction, t 1/2 from 0.05 - 15 h, mineral catalysis. Biodegradation: - aerobic, t 1/2 < 2 min, biological treatment sludge, Remarks: Readily biodegradable; - aerobic, t 1/2 from 0.3 - 5 d, fresh water, Remarks: Readily biodegradable; - anaerobic, Remarks: not applicable.
Bioaccumulative potential	
Mobility	No Data Available

13. DISPOSAL CONSIDERATIONS

Disposal methods:	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. Or refilled at Big Bubble in Midvale.
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14. TRANSPORT INFORMATION

Road and Rail Transport	Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; DANGEROUS GOODS.
UN number:	2014
Proper shipping name;	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
DG Class	5.1 (Sub-Risk 8)
Packing group	II
Environmental hazards for transport purposes	No
Special Precaution for user	No data
Hazchem	2P

Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

15. REGULATORY INFORMATION

Poisons Schedule: Schedule 6

Carcinogen: Not Listed

AICS: On the inventory, or in compliance with the inventory.

16. OTHER INFORMATION

Revision date: 28/08/2021

Reason for issue: Update SDS

Key/Legend:

< Less Than^[L]_[SEP]

> Greater Than^[L]_[SEP]

AICS Australian Inventory of Chemical Substances^[L]_[SEP]

atm Atmosphere^[L]_[SEP]

CAS Chemical Abstracts Service (Registry Number)^[L]_[SEP]

cm² Square Centimetres^[L]_[SEP]

CO₂ Carbon Dioxide^[L]_[SEP]

COD Chemical Oxygen Demand^[L]_[SEP]

deg C (°C) Degrees Celcius^[L]_[SEP]

g Grams^[L]_[SEP]

g/cm³ Grams per Cubic Centimetre^[L]_[SEP]

g/l Grams per Litre^[L]_[SEP]

HSNO Hazardous Substance and New Organism^[L]_[SEP]

IDLH Immediately Dangerous to Life and Health^[L]_[SEP]

immiscible Liquids are insoluble in each other.^[L]_[SEP]

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inHg Inch of Mercury

inH₂O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

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

TWA Time Weighted Average

UN United Nations

wt Weight

This material safety data sheet has been prepared by Midland Chemicals

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. No liability is accepted whether direct or indirect from its application since the conditions of final use are outside Midland Chemicals control. The end user is obliged to conform to relevant government regulations and/or patent laws applicable in their respective States of Countries.