

## Safety Data Sheet **HYDROGEN PEROXIDE 35 - <50%**

SDS no. 2787C7DT • Version 1.0 • Date of issue: 2024-08-18

### SECTION 1: Identification

#### GHS Product identifier

Product name HYDROGEN PEROXIDE 35 - <50%

#### Other means of identification

Product	Product Code
HYDROGEN PEROXIDE 35% LR Peroxide	HL001
HYDROGEN PEROXIDE 35% TG Hydrogen dioxide Hydroperoxide	HT001
AG Spray 35% Hydrogen Peroxide Aseptic Packaging Grade	VP032

#### Recommended use of the chemical and restrictions on use

Bleaching and deodorizing of wood pulp, textiles, hair and fur; source of organic and inorganic peroxides; pulp and paper industry; plasticizers; foam rubber; manufacture of glycerol; antichlor; dyeing; electroplating; antiseptic; epoxidation, hydroxylation, oxidation and reduction; viscosity control for starch and cellulose derivatives; refining and cleaning metals; bleaching and oxidizing agent in foods; seed disinfectant; neutralising agent in wine distillation; substitute for chlorine in water and sewage treatment; and laboratory reagent.

#### Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

### SECTION 2: Hazard identification

#### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, oral, Cat. 4

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- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1A
- Specific target organ toxicity following single exposure, Cat. 3
- Oxidizing liquids, Cat. 1

#### GHS label elements, including precautionary statements

##### Pictograms



##### Signal word

**Danger**

##### Hazard statement(s)

- |      |                                              |
|------|----------------------------------------------|
| H271 | May cause fire or explosion; strong oxidizer |
| H302 | Harmful if swallowed                         |
| H314 | Causes severe skin burns and eye damage      |
| H335 | May cause respiratory irritation             |

##### Precautionary statement(s)

- |                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P210           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| P220           | Keep away from clothing and other combustible materials.                                                                         |
| P260           | Do not breathe dust/fume/gas/mist/vapors/spray.                                                                                  |
| P271           | Use only outdoors or in a well-ventilated area.                                                                                  |
| P280           | Wear protective gloves/protective clothing/eye protection/face protection.                                                       |
| P283           | Wear fire resistant or flame retardant clothing.                                                                                 |
| P301+P312      | IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,                                                          |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.                                                                               |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].                         |
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                                                       |
| 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/doctor/physician                                                                                |
| P363           | Wash contaminated clothing before reuse.                                                                                         |
| P370+P378      | In case of fire: Use agents recommended in Section 5 of SDS for extinction                                                       |
| P371+P380+P375 | In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.                     |
| P403+P233      | Store in a well-ventilated place. Keep container tightly closed.                                                                 |
| P420           | Store separately.                                                                                                                |
| P501           | Dispose of contents/container to an approved waste disposal facility                                                             |

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## SECTION 3: Composition/information on ingredients

##### Mixtures

Molecular weight: 34.0122

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### Components

Component	CAS no.	Concentration
Water (EC no.: 231-791-2)	7732-18-5	50 - 65 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.		
Hydrogen peroxide (EC no.: 231-765-0; Index no.: 008-003-00-9)	7722-84-1	35 - 50 % (weight)
CLASSIFICATIONS: Acute toxicity, inhalation, Cat. 4; Acute toxicity, oral, Cat. 4; Oxidizing liquids, Cat. 1; Skin corrosion/irritation, Cat. 1A. HAZARDS: H271 - May cause fire or explosion; strong oxidizer; H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage; H332 - Harmful if inhaled. [SCLs/M-factors/ATEs]: Ox. Liq. 1; H271: C ≥ 70 %****; Ox. Liq. 2; H272: 50 % ≤ C < 70 % ****, *; Skin Corr. 1A; H314: C ≥ 70 %; Skin Corr. 1B; H314: 50 % ≤ C < 70 %; Skin Irrit. 2; H315: 35 % ≤ C < 50 %; Eye Dam. 1; H318: 8 % ≤ C < 50 %; Eye Irrit. 2; H319: 5 % ≤ C < 8 %; STOT SE 3; H335: C ≥ 35 %		

## SECTION 4: First-aid measures

### Description of necessary first-aid measures

#### General advice

First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.

Advice to Doctor: Treat symptomatically and supportively. Attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. In the event of severe distension of the stomach or esophagus due to gas formation, insertion of a gastric tube may be required. To treat corneal damage, careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Monitor for respiratory tract irritation and hypoxia after severe inhalation exposure.

#### If inhaled

If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately medical attention is required.

#### In case of skin contact

Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.

#### In case of eye contact

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical assistance.

#### If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

### Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

## SECTION 5: Fire-fighting measures

### Suitable extinguishing media

Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO2 or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat.

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Large fire: Flood fire area with water from a protected position. Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.

#### Specific hazards arising from the chemical

Hazards from Combustion Products: Molecular oxygen, which can accelerate the burning of flammable materials or cause spontaneous combustion.

Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.

#### Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

#### Further information

Concentrations of 27.5% up to 52% will cause a moderate increase in the burning rate or cause spontaneous ignition of combustible materials with which it comes in contact. Concentrations of 35% and above can cause combustible materials such as wood, paper, oils and grease to burst into flames and will support, accelerate and intensify the burning of combustible materials. Large amounts of oxygen gas may be released to form an oxygen-rich atmosphere.

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## SECTION 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Avoid inhalation, contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.

Use personal protective equipment listed in Section 8.

#### Methods and materials for containment and cleaning up

Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat.

#### Small Liquid Spill

Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal.

#### Large Liquid Spill

SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

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## SECTION 7: Handling and storage

#### Precautions for safe handling

Avoid contact with eyes, skin, and clothing. Keep container locked up and tightly sealed. Contents may develop pressure upon prolonged storage. Open carefully. Loosen caps slowly to release any pressure. Ensure good ventilation at the workplace. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wash thoroughly after handling. Keep away from heat, welding and all sources of ignition, even when empty. This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Substance/product can reduce the ignition temperature of flammable substances. Keep combustible materials away from the area, maintain all equipment in a thoroughly clean condition. Do not use metal equipment or containers. Containers and equipment used to handle the product should be used exclusively for that product. Handling systems must exclude fittings of iron, brass, copper, Monel, and screwed joints caulked with red lead. Rinse empty drums and containers thoroughly with water before discarding.

**Conditions for safe storage, including any incompatibilities**

Store in tightly closed, light-resistant, vented containers, in a dark, cool, dry, well-ventilated area, away from incompatible materials such as combustible substances, reducing agents, strong bases, acids, organics, foodstuffs flammable substances, metals, and oxidizable materials. Use adequate venting devices on all packages, containers and tanks to permit release of internal pressure. Protect from physical damage, direct sunlight, moisture and contamination.

Corrosivity to Metals: Hydrogen peroxide solutions (35% and greater) are corrosive (corrosion rate greater than 1.27 mm/year) to carbon steel (types 1010 and 1020 (35-100%); 1075, 1095 and 12L14 (100%), grey cast iron, 3% nickel cast iron, ductile cast iron, the nickel base alloys, Hastelloy B and D and Monel, copper, nickel-copper alloy, brass, cartridge brass, bronze, aluminium bronze, naval bronze, silicon bronze, and lead at room temperature. Hydrogen peroxide solutions attack types 1010 and 1020 carbon steel at any concentration and temperature. One source reports that 50-90% hydrogen peroxide is corrosive to type 3003 aluminium.

Hydrogen peroxide solutions (35% and greater) are not corrosive (corrosion rate less than 0.5 mm/year) to stainless steel (e.g. types 303, 304, 316, 17-4PH, 400 series, Carpenter 20Cb-3), aluminium (99.5%), certain aluminium alloys (types 1060, 5052, 6063 and aluminium-magnesium alloys), nickel (100% solution), the nickel-base alloys, Hastelloy C and Inconel, tantalum, titanium and zirconium. Both stainless steel and aluminium surfaces must be passivated (formation of a protective film by chemical treatment) before use.

May attack or ignite some forms of plastics, rubber, or coatings.

[7Z] Recommended Materials: Aluminium 99.5 %; stainless steel 304L/316L; glass; approved grades of HDPE.

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**SECTION 8: Exposure controls/personal protection****Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

**Individual protection measures, such as personal protective equipment (PPE)****Eye/face protection**

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

**Skin protection**

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

**Body protection**

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

**Respiratory protection**

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

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**SECTION 9: Physical and chemical properties**

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### Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, colourless liquid.
Color	No data available.
Odor	Odourless to slightly acrid odour, resembling that of ozone.
Odor threshold	No data available.
Melting point/freezing point	-14.6 °C (20%); -25.7 °C (30%); -33 °C (35%); -41 °C (40 %); -52.2 °C (50%).
Boiling point or initial boiling point and boiling range	103.6 °C (20%); 106.2 °C (30%); 108 °C at 1013 hPa (decomposes) (35 %); 110 °C (40 %); 114 °C at 1013 hPa (decomposes) (50%).
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Explosive decomposition may occur under fire conditions. Contact with combustible materials may cause explosion. Can react violently or explosively with many chemicals. Some substances that do not normally burn in air will explode upon contact with hydrogen peroxide. May form explosive peroxides. Closed containers may rupture violently due to rapid decomposition, if exposed to fire or excessive heat for a sufficient period of time, or if contaminated with certain metals or dirt.
Auto-ignition temperature	No data available.
Decomposition temperature	>= 60 °C (Self-Accelerating decomposition temperature (SADT) (> 50%)); < 60 °C (slow decomposition) (> 50%); 100 °C in 25 kg package (SADT (35%)); 80 °C in 1 m <sup>3</sup> volume (SADT (35%)).
Oxidizing properties	No data available.
pH	3.3 (30 %); 4.6 (35 %), 4.3 (50 %) (Note: The pH of commercial solutions can be affected by the type and amount of stabilizers added, and many times the pH is purposely adjusted to a grade specification range).
Kinematic viscosity	Kinematic Viscosity: 0.98 mm <sup>2</sup> /s (0.98 centistokes) at 20 °C (35% or 50%). [88] Dynamic Viscosity: 1.11 mPa.s (1.11 centipoise) (35%); 1.17 mPa.s at 20 °C (50%).
Solubility	Solubility in Water: Miscible in all proportions. Solubility in Organic Solvents: Soluble in all proportions in many polar solvents, e.g. low molecular weight alcohols, glycols and ketones; insoluble in petroleum ether (>20%). (Note: Concentrated hydrogen peroxide solutions can react explosively with these solvents.) Soluble in diethyl ether (>50%).
Partition coefficient n-octanol/water (log value)	Log P(oct) = -0.70 to -1.33 (estimated); - 1.1 (30%).
Vapor pressure	Partial vapour pressure = ca. 0.48 hPa at 30 °C (H2O2), Total vapour pressure = 30.70 hPa (water + H2O2) (35 %); Partial vapour pressure = ca. 0.99 hPa at 30 °C (H2O2), Total vapour pressure = 24.00 hPa (water + H2O2) (50 %).
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.07 @ 20 °C/4 °C (20%); 1.11 @ 20 °C/4 °C (31%); 1.132 at 20 °C (35 %); 1.15 (40 %); 1.195 at 20 °C (50 %).

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Relative vapor density  
Particle characteristics

1.17 (30 %); 1 (50 %).  
No data available.

#### Supplemental information regarding physical hazard classes

Surface Tension: 75.6 mN/m (75.6 dynes/cm) at 20 °C (50%).

#### Further safety characteristics (supplemental)

Saturated Vapour Concentration: 500 ppm at 30 °C (35%); 500 ppm (50%).

Other Information: Conversion Factor: 1 ppm = 1.39 mg/m<sup>3</sup>; 1 mg/m<sup>3</sup> = 0.72 ppm at 25 °C (calculated) (20-35%).

Critical Temperature: 457 °C (100%).

Critical Pressure: 20990 kPa (207 atm.) (100%).

Dipole moment: 2.26 D.

Acidity: Weak acid; pKa = 11.75 at 20 °C (Ka = 1.78 x 10(-12) at 20 °C) (>20 %).

Taste: Slight acid. Bitter.

Dissociation Constants: pKa = 11.75.

Henry's Law = 7.04 x 10-9 atm m<sup>3</sup>/mol @ 25 °C.

Index of refraction: 1.4061 @ 28 °C.

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## SECTION 10: Stability and reactivity

### Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

### Chemical stability

Stable under recommended storage conditions. It may contain a stabilizer; product usually stabilized by addition of acetanilide or similar organic materials. Solutions of hydrogen peroxide gradually deteriorate, even when stabilized (relatively stable sample of hydrogen peroxide typically decomposes at the rate of about 0.5%/year at room temperature) to release molecular oxygen, water and heat. Unstable upon standing or upon repeated agitation, undergoes accelerated decomposition when exposed to light or when in contact with rough surfaces, many oxidizing or reducing substances or contaminated with heavy metals, rust, or dirt, and decomposes suddenly with alkalis, finely divided metals or when heated. Stability is reduced when pH is above 4.0 (the optimum pH is 3.5-4.5); the presence mineral acids of renders it more stable.

### Possibility of hazardous reactions

Hydrogen peroxide solutions (30% or greater) 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 35% and above hydrogen peroxide with nitric acid (more than 50%) or sulfuric 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 sulfides, 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 over 30% concentration, the violence increasing with concentration.

### Conditions to avoid

Organic materials plus mechanical shock, light, ignition sources, dust generation, heat, combustible materials, reducing agents, alkaline materials, strong oxidants, rust, dust, pH > 4.0, contamination, depletion of stabilizers, lack of vents and incompatible materials.

**Incompatible materials**

Nitric acid (more than 50%) or sulfuric acid, strong bases (e.g. potassium hydroxide or sodium hydroxide), metals (powdered or metal surfaces, e.g. osmium, palladium, platinum, iridium, gold, silver, manganese, cobalt, copper, lead, potassium, sodium, lithium, iron, brass, bronze, chromium, zinc, nickel, magnesium), metal oxides (e.g. cobalt oxide, iron oxide, lead oxide, lead hydroxide, manganese oxide), metal sulfides, metal salts (e.g. calcium permanganate, salts of iron, copper, chromium, vanadium, tungsten, molybdenum, and platinum), or iodates, reducing agents (e.g. metal hydrides), organic materials (e.g. carboxylic acids and anhydrides, nitrogen-containing bases, aldehydes, ketones, ethers (dioxane, furfuran, tetrahydrofuran), soluble fuels (acetone, alcohol, glycerol), charcoal, organic dust), flammable materials, combustible materials (e.g. wood, paper, cellulose, textiles, oil, grease), strong oxidizing agents (e.g. potassium permanganate), hydrazine, sodium carbonate, cyanides (e.g. potassium cyanide, sodium cyanide), urea, triethylamine, sodium borate, aniline, cyclopentadiene, glycerine, asbestos, mercurous chloride, sodium pyrophosphate, hexavalent chromium compounds, sodium fluoride, chlorosulfonic acid, hydrogen selenide, some forms of plastics, rubber, or coatings.

**Hazardous decomposition products**

Oxygen, the release of other hazardous decomposition products is possible, hydrogen gas, water, heat, steam. Decomposition continuously occurs even at a slow rate when the compound is inhibited.

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**SECTION 11: Toxicological information****Information on toxicological effects****Acute toxicity**

Ingestion: Harmful if swallowed. Ingestion of concentrated solutions (greater than 20%) causes irritation of the gastrointestinal and respiratory tract, with sharp pains in the abdominal pain, nausea, vomiting, hypermotility and diarrhoea, and may cause corrosive injury to the mouth and throat, difficulty in swallowing, foaming at the mouth, oedema (bleeding) of the throat with obstruction of air passages, stomach distension (due to rapid liberation of oxygen), and perforation of the oesophagus and stomach, with bleeding of the stomach and ulcer formation, belching, peritonitis, convulsions, pulmonary oedema, coma, spastic paralysis with or without sensory change, haemorrhage and damage to the red blood cells, temporary unconsciousness and fever, possible cerebral swelling (fluid on the brain), and death. Ingestion is not a typical route of occupational exposure.

Inhalation: Harmful if inhaled. Hydrogen peroxide does not readily form a vapour at room temperature. If heated or misted, inhalation of vapours or mist is highly irritating to the nose, throat, lungs, and respiratory tract, and may burn the mucous membrane of the nose and throat, causing ulceration of nasal tissue, and respiratory effects such as throat pain, inflammation, lacrimation, coughing, wheezing, laryngitis, shortness of breath, nausea and vomiting. May affect behaviour/central nervous system (insomnia, headache, ataxia, nervous tremors with numb extremities) and blood (cyanosis) and cause chemical pneumonia. In severe cases, respiratory effects may include acute lung damage, bronchitis, delayed pulmonary oedema (fluid in lungs), unconsciousness and death.

// ----- From the Suggestion report (01/08/2024, 11:10 AM) ----- //

The ATE (gas inhalation) of the mixture is: 9000 ppmV

// ----- From the Suggestion report (01/08/2024, 11:10 AM) ----- //

The ATE (vapor inhalation) of the mixture is: 22 mg/l

// ----- From the Suggestion report (01/08/2024, 11:10 AM) ----- //

The ATE (oral) of the mixture is: 1000 mg/kg bw

**Skin corrosion/irritation**

Hydrogen peroxide solutions of 20% to 35% are very mild skin irritants, while solutions of 50% are severely irritating and corrosive respectively, based on animal information. Corrosive materials are capable of producing severe burns, blisters, ulcers and permanent scarring, depending on the concentration of the solution and the duration of contact. May cause discolouration, erythema (redness), swelling of tissue, and pain. Transient whitening or bleaching of the skin has been observed in humans following contact with dilute solutions. Solutions over 30% may easily cause papules and vesicles (blisters). A limited human study showed a severe reaction to 35% that healed completely. Prolonged contact (e.g. 24-hours) can cause moderate to severe irritation and possible moderate to severe burns. Non-permeator into skin.



**Serious eye damage/irritation**

Contact with solutions of 20% and greater is irritating and corrosive to eyes, based on animal information. Can cause severe eye burns, and permanent eye lesions, including corneal damage and blindness, depending on the concentration of the solutions and duration of contact. Symptoms include pain, redness, blurred vision, superficial clouding, lacrimation, swelling of the eyelids and corneal oedema. Vapour may cause irritation. No human information was located for hydrogen peroxide solutions of 20% and greater.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

It is not possible to conclude that hydrogen peroxide is mutagenic. Positive results have been obtained in cultured humans cells. Negative results have been obtained in relevant studies using live animals. Positive results have been obtained in short-term mutagenicity tests.

**Carcinogenicity**

Hydrogen peroxide [7722-84-1] is evaluated in the IARC Monographs (Vol. 36, Suppl. 7, Vol. 71; 1999) as Group 3: Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity**

No data available.

**Specific target organ toxicity (STOT) - single exposure**

May cause respiratory irritation.

**Specific target organ toxicity (STOT) - repeated exposure**

No data available.

**Aspiration hazard**

No data available.

**Additional information**

Chronic Effects: Repeated or prolonged exposure to spray mist may produce throat and respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated or prolonged exposure may produce sore throat, and nose bleeds. Prolonged ingestion causes damage to the gastrointestinal tract. May cause damage to the central nervous system (CNS), and blood. Repeated use of hydrogen peroxide topical solution as a mouthwash or gargle may produce a condition known as 'hairy tongue' or may cause irritation of the buccal mucous membrane. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Prolonged or repeated skin contact may cause dermatitis. Prolonged or intense skin contact or splashes in the eyes may cause corneal damage and severe injury. Chronic exposure to vapour produces eye irritation and gradual bleaching of their hair.

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**SECTION 12: Ecological information****Toxicity**

Ecotoxicity: Toxic for aquatic organisms. In high concentrations: Toxic effect on fish and plankton.

Other Precautions: Wear protective clothing made of chloroprene rubber, polyvinyl chloride, polyethylene etc. Keep combustible materials away from the area, maintain all equipment in a thoroughly clean condition. To avoid contamination do not return any unused peroxide to the container. Keep away from glycerin, hydrazine, alcohol, carbon, oil and resins

[8X] Acute Toxicity - Fish: *C. carpio* LC50: 42 mg/l /48 h;  
*Pimephales promelas*, LC50: 16.4 mg/l /96 h.

[8Y] Acute Toxicity - Daphnia: *Daphnia magna* EC50: 7.7 mg/l /24 h.

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[8Z] Acute Toxicity - Algae: Chlorella vulgaris IC50: 2.5 mg/l /72 h.

[91] Acute Toxicity - Other Organisms: Crustaceans, EC50: 2.4 mg/l /48 h.

#### 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

H2O2 does not accumulate in cells of living organisms.

#### Mobility in soil

- Air, Volatility, Henry's law constant (H) = 1 Pa.m<sup>3</sup>/mol @ 20 °C, Remarks: not significant.
- Air, condensation on contact with water droplets, Remarks: rain washout;
- water, Remarks: The product evaporates slowly;
- Soil/sediments, Remarks: non-significant evaporation and adsorption.

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## SECTION 13: Disposal considerations

#### Disposal methods

#### Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

#### Sewage disposal

H2O2 does not accumulate in cells of living organisms.

#### Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

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## SECTION 14: Transport information

#### ADG (Road and Rail)

UN Number: 2014

Class: 5.1, 8

Packing Group: II

Proper Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Environmental Hazards: Toxic for aquatic organisms. In high concentrations: Toxic effect on fish and plankton. No ecological problems, or impairments in the function of waste- water-treatment plants are to be expected when the product is handled and used with due care and attention.

#### Hazchem emergency action code (EAC)

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2P

#### IMDG

UN Number: 2014

Class: 5.1, 8

Packing Group: II

EMS Number:

Proper Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

#### IATA

UN Number: 2014

Class: 5.1, 8

Packing Group: II

Proper Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

#### Australia SUSMP

Poison Schedule: S6

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## SECTION 16: Other information

### Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

### Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](http://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)