HYDROGEN PEROXIDE
Safety Data Sheet

1. IDENTIFICATION

Product name: HYDROGEN PEROXIDE

Synonyms Hydrogen peroxide	**Product Code** 705

Recommended use: TO BLEACH AND DEODORISE COTTON, SYNTHETIC OR WOOL BLENDS IN THE LAUNDRY.

Supplier Name	**UDS Pty Ltd**
Address	3 Spireton Place Pendle Hill NSW 2145
Telephone	02 9688 2022
Emergency	1800 201 700
Email	consumables@udcs.com.au
Web Site	www.udsptyltd.com.au

SDS Date 21 JANUARY 2021 Version 1.2

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 6

Globally Harmonised System

Hazard Classification	Hazardous according tothecriteria of theGlobally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Skin Corrosion/Irritation - Category 1A Oxidising Liquids - Category 2 Corrosive to Metals - Category 1 Acute Toxicity (Oral) - Category 4 AcuteToxicity(Inhalation) - Category 4 Serious Eye Damage/Irritation - Category 1

Pictograms

Signal Word Danger

Hazard Statements	**H271**	May cause fire or explosion; strong oxidizer.
	H332	Harmful if inhaled.
	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H272	May intensify fire; oxidizer.
	H290	May be corrosive to metals.
	H318	Causes serious eye damage.

Precautionary Statements	Prevention	**P283**	Wear fire/flame resistant/retardant clothing.
		P271	Use only outdoors or in a well-ventilated area.
		P234	Keep only in original container.
		P270	Do not eat, drink or smoke when using this product.

	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Nosmoking.
	P220	Keep/Store away from clothing/organic material/combustible materials.
	P221	Take any precaution to avoid mixing with combustibles/organic material.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P260	Do not breathe fume/gas/mist/vapours/spray.
	P264	Wash contacted areas thoroughly after handling.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Nosmoking.
Response	**P306 + P360**	IF ON CLOTHING: Rinseimmediatelycontaminated clothing andskin with plenty of water beforeremoving clothes.
	P371 + P380 + P375	In case of major fire and largequantities: Evacuate area. Fight fire remotely due tothe risk of explosion.
	P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P303 + P361 + P353	IFON SKIN (orhair): Remove/take off immediately all contaminatedclothing. Rinseskin with water/shower.
	P363	Wash contaminated clothing before reuse.
	P304 + P340	IF INHALED: Remove victim tofresh air and keep at rest in a position comfortablefor breathing.
	P310	Immediately call a POISON CENTER or doctor/physician.
	P305 + P351 + P338	IF IN EYES: Rinsecautiously with water for several minutes. Removecontact lenses, if present and easyto do. Continue rinsing.
	P390	Absorb spillage to prevent material damage.
	P301 + P312	IFSWALLOWED: Call aPOISON CENTER or doctor/physician if youfeelunwell.
	P370 + P378	In case of fire: Alcohol resistant foam is the preferred fire-fighting medium. However, if it is not available, fine water spray or water fog can be used to extinguish.
Storage	**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 Goods	Dangerous Goods according to the criteria of the Australian Codefor the Transport of Dangerous by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	**Formula**	**CAS Number**	**Proportion**
Water	No Data Available	7732-18-5	30.0 - 60.0 %
Hydrogen Peroxide	No Data Available	7722-84-1	30.0 - 60.0 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to

	be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side(head-down position, if possible) to maintain open airway andprevent aspiration. Observethepatientcarefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay
Eye	Immediately hold eyelids apart and flush the eyecontinuously with running water.

Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin

Immediatelyflush body andclothes with large amounts of water, using safetyshower if available.
Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. Transport to hospital, or doctor.

Inhaled

If fumes or combustion products are inhaled remove fromcontaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should beremoved, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with ademand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.
Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
As this reaction may be delayed up to 24 hours after exposure, affected individuals need completerest (preferably in semi-recumbent posture) and must be kept under medical observation even if nosymptoms are(yet) manifested.
Beforeanysuch manifestation, the administration of aspraycontaining adexamethasone derivative or beclomethasonederivative maybeconsidered. This must definitely be left to a doctor or person authorised by him/her.

Advice to Doctor

Treat symptomatically.
Hydrogen peroxide at moderate concentrations (5% or more) is a strong oxidant.
Direct contact with the eye is likely tocausecorneal damage especially if not washed immediately.
Careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Because of the likelihood of systemic effects attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided.
There is remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension dueto gas formation"
Depending on the degree of exposure, periodic medical examination is indicated. Thesymptoms of lung oedema often do not manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorised by him/her should be considered.

No information available on medical conditions aggravated by exposure to this product.

Medical Conditions Aggravated by Exposure.

5. FIRE FIGHTING MEASURES

General Measures

Clear fire area of all non-emergencypersonnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT move cargo if cargo has been exposed to heat. Avoid getting water inside containers: a violent reaction may occur.

Flammability Conditions

Powerful oxidising agent. Not combustible, but will support the combustion of other material. Contact with other material may cause fire. Heat of reaction with reducing agents, or combustibles may cause ignition.
Increases flammability of any combustible substance in contact with it. May ignite combustibles (wood, paper, clothing etc). Mixtures withcombustiblematerial arereadily ignited and may burn fiercely.

Extinguishing Media

FOR SMALL FIRE: USE FLOODING QUANTITIES OF WATER.
FOR LARGE FIRE : Flood fire area with water from a protected position.
DO NOT use dry chemical, CO2, foam or halogenated-type extinguishers. NOTE:Chemical extinguishingagentsmayaccelerate decomposition. [CCINFO] DONOT usehalogenatedfireextinguishing agents.

Fire and Explosion Hazard

May act as an ignition source for dust or vapour explosions. May explode from heating, shock, friction, or

contamination. Containers may explode when heated. Runoff maycreate afire or explosion hazard. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.

Hazardous Products of Combustion

Involved in fire, it may decompose yielding oxygen.

Special Fire Fighting Instructions Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment. Dam fire control water for later disposal.

Personal Protective Equipment

Firefighters should wear apositive-pressureself-containedbreathing apparatus(SCBA) andprotectivefire fighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

Flash Point

Does notflash

Lower Explosion Limit

No Data Available

Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure

Avoid accidents, clean up immediately.
Slippery when spilled. Eliminate all sources of ignition.
Increase ventilation. Avoid generating dust.
Use clean, non-sparking tools and equipment. Keep combustibles away from spilled material.
Isolate defective containers immediately, if possible and safe to do.
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 forre-use. (Risk of decomposition.).

Clean Up Procedures

Minor Spills : Clean up all spills immediately. No smoking, naked lights, ignition sources. Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result. Avoid breathing dust or vapours and all contact with skin and eyes.
Control personal contact with the substance, by using protective equipment. Contain and absorb spill with dry sand, earth, inert material or vermiculite. DO NOT use sawdust as fire may result. Scoop up solid residues and seal in labelled drums for disposal. Neutralise/decontaminate area.

Major Spills : Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillagefrom entering drains or water course. Consider evacuation (or protect in place). No smoking, flames or ignition sources. Increase ventilation. Contain spill withsand, earth or other clean, inert materials. NEVER use organic absorbents such as sawdust, paper, cloth; as fire may result. Avoid any contamination by organic matter. Use spark-free and explosion-proof equipment. Collect any recoverable product into labelled containers for possible recycling. DO NOT mix fresh with recovered material. Collect residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. Decontaminate equipment and launder all protective clothing before storage and re-use. If contamination of drains or waterways occurs advise emergencyservices.For hydrogen peroxide:
Dilute with large quantities of water (at least ten (10) times the volume of hydrogen peroxide). Sodium bicarbonate may be used to accelerate breakdown

Containment

Stop leak if safeto doso. Isolate the danger area.
Dam with sand or earth. Do not use: textiles, saw dust, combustible substances.

Decontamination

Cleancontaminatedsurface thoroughly. Recommended cleaning agent: water.

Environmental Precautionary Measures

DoNOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local WasteManagement.

Evacuation Criteria Evacuate all unnecessary personnel.

Personal Precautionary Measures Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling

DO NOT allow clothing wet with material to stay in contact with skin
Avoid personal contact and inhalation of dust, mist or vapours. Provide adequate ventilation.
Always wear protective equipment and wash off anyspillage from clothing.
Keep material away from light, heat, flammables or combustibles. Keep cool, dry and away from incompatible materials. Avoid physical damagetocontainers.
DO NOT repack or return unused portions to original containers. Withdraw onlysufficient amounts for immediate use. Use onlyminimum quantityrequired.
Avoid usingsolutions of peroxides in volatilesolvents. Solvent evaporation should becontrolled to avoid dangerous concentration of the peroxide.
Do NOT allow peroxides to contact iron or compounds of iron, cobalt, or copper, metal oxide salts, acids or bases. Do NOT usemetal spatulas tohandle peroxides.
Do NOT use glass containers with screw cap lids or glass stoppers.
Store peroxides at the lowest possible temperature, consistent with their solubility and freezing point.
CAUTION: Do NOT store liquids or solutions of peroxides at a temperature below that at which the peroxide freezes or precipitates. Peroxides in this form are extremelyshock and heat-sensitive.
Refrigerated storage of peroxides must ONLY be in explosion-proof units.
The hazards and consequences of fires and explosions during synthesis and use of peroxides is widely recognised; spontaneous or induced decomposition mayculminate in a variety of ways, ranging from moderate gassing tospontaneous ignition or explosion. The heat released from spontaneous decomposition of an energy-rich compound causes arisein thesurrounding temperature;
the temperature will rise until thermal balance is established or until the material heats to decomposition, The most effective means for minimisingtheconsequences of an

accident is to limit quantities to a practical minimum. Even gram-scale explosions can be serious. Once ignited the burning of peroxides cannot be controlled and the area should be evacuated. Unless there is compelling reason to do otherwise, peroxideconcentration should be limited to 10% (or less with vigorous reactants). Peroxideconcentration is rarely as high as 1% in thereaction mixture of polymerisation or other free-radical reactions, Peroxides should be added slowly and cautiously to the reaction medium. This should be completed prior to heating and with good agitation. Addition of peroxide tothe hot monomer is extremely dangerous. A violent reaction (e.g., fire or explosion) can result from inadvertent mixing of promoters (frequently used with peroxides in polymerisation systems) with full- strength peroxide.
Organic peroxides are verysensitive tocontamination(especiallyheavy-metalcompounds, metal oxidesalts, alkaline materials including amines, strong acids, and many varieties of dust and dirt).
This can initiate rapid, uncontrolled decomposition of peroxides and possible generation of intenseheat, fire or explosion Theconsequences of accidentalcontaminationfromreturning withdrawn material to thestorage container can be disastrous. When handling NEVER smoke, eat or drink. Always wash hands with soap and water after handling. Use only good occupational work practice. Observe manufacturer's storage and handlingrecommendations contained within this SDS.

Storage

Store in acool, 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), temperatureincreaseetc.
Protect against physical damage. Protect from light.
Store away from incompatible materials as listed in section 10.
Jointless smooth concrete floor. Recommendation: Acid-proof floor.
Only usecontainers which are specially permitted for: hydrogen peroxide and/or for transport, storage and tank installations only use suitable materials.
Use adequate venting devices on all packages, containers and tanks andcheck correct operation periodically.
Do not confine product in un-vented vessels or between closed valves.
Risk of overpressure and burst dueto decomposition in confined spaces and pipes.
Transport and storecontainer in upright position only.
Do not keep the container sealed.
Avoid residues of the product on the containers.
Avoid sun rays, heat, heat effect.

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 tothefirst filling and operation of a tank installation all parts of the facility including all pipes must be thoroughly cleaned andflushedthrough.
Metal elements of the installation must first be pickled and passivated sufficiently.
Regularly verifythe availability of water todeal with emergencies (for cooling, tankflooding, firefighting) and check correct operationperiodically. Do not store together with: alkalis, reductants, metallic salts (risk of decomposition). Do not store together with: inflammablesubstances (risk of fire). Do not store together with: organic solvents.

This product has a UN classification of 2014, aDangerous Goods Class 5.1 (Oxidiser) and a Subsidiary Risk 8 (Corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.

Container

Store in: containers with ventedlids. Properly passivated aluminiumcontainers. Properly passivatedstainlesssteel. Polyethylene containers. Porcelain, vitreous stoneware. Teflon lined containers

Storage incompatibility : Hydrogen peroxide is a powerful oxidiser. contamination or heat may cause self accelerating exothermic decomposition with oxygen gas and steam release - this may generate dangerous pressures - steam explosion. Reacts dangerously with rust, dust, dirt, iron, copper, acids, metals and salts, organic material. is unstable if heated. (e.g): one volume of 70% hydrogen peroxidesolution decomposes to produce 300 volumes of oxygen gas. In presence of astrong initiating source may be explosively reactive. concentrated or pure material can generate heat and decompose spontaneously; can ignite or explode when heated, shocked, contaminated; or if placed in a basic (>7) environment, especially in the presence of metal ions. mixtures with combustible materials may result in spontaneous combustion or may be impact- or heat- sensitive - evaporation or drying on towels or mop may cause a fire. reacts violently with reducing agents, alcohols, ammonia, carboxylic acids, acetic acid, cobalt oxides, copper(II) chloride, ethers, metal powder, permanganates, acetone, benzenesulfonic anhydride, 1,1-dimethylhydrazine, dimethylphenylphosphine, gadolinium hydroxide, hydrogen selenide, iron oxides lithium tetrahydroaluminate, magnesium tetrahydroaluminate, manganese (II) oxide, mercury oxide, methyl hydrazine, nickel monoxide, nitrogenous bases, osmium tetraoxide, alpha-phenylselenoketones, phosphorus, phosphorus(V) oxide, quinoline, tetrahydrothiophene, tin(II) chloride, thiodiglycol, thiophane, tin(II) chloride, unsaturated organic compounds, readily oxidisable and combustible materials; avoid contact with combustibles including lubricants and graphite. reacts with cobalt, copper and its alloys, chromium, iridium, iron, lead, manganese, Monel, osmium, palladium, platinum, gold, silver, zinc, and other catalytic metals, metal oxides and salts - avoid metallic bowls and stirrers. violent catalytic decomposition will occur in contact with certain metals such as iron, copper, chromium, brass, bronze, lead, silver, manganese or their salts.forms unstable and possible explosive materials with acetic anhydride,

aconitic acid, aniline, carboxylic acids, 1,4-diazabicyclo[2,2,2]octane, diphenyl diselenide, ethyl acetate, glycols, ketene, ketones, triethyltin hydroperoxide, 1,3,5-trioxane, vinyl acetate. is incompatible with mercurouschloride. decomposes in presence of alkalis and even ordinary dust or rust. decomposes in presence of alkalisand even ordinary dust or rust decomposes slowly at ordinary temperatures
and builds up pressure in a closed container; the rate of decomposition doubles for each 10 deg C rise in temperature and decomposition becomes self-sustaining at 141 deg. C. Contact with rough surfaces can cause decomposition. Attacks and may ignite some plastics, rubber and coatings. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

Australia Exposure Standards hydrogen peroxide Hydrogen peroxide TWA 1.4 mg/m3 / 1 ppm EMERGENCY LIMITS: Hydrogen peroxide 30%- TEEL-1- 33 ppm

Asthma-likesymptoms maycontinuefor months or even years after exposure to the material ceases. This may be dueto anon-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS includethe absence of preceding respiratory disease, in anon-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposureto the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate tosevere bronchial hyperreactivity on methacholinechallengetesting andthelack of minimal lymphocytic inflammation, without eosinophilia, have alsobeen included in thecriteriafor diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is adisorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. Exposure to hydrogen peroxide via the skin or oral route can produce toxic effects. Animal studies have shown evidence of damage to the kidney, gut, thymus and liver. Stomach and intestinal lesions including benign and malignant cancers have been observed in mice. It may produce genetic and developmental defects but no reproductive toxicity was reported in mice. The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

Exposure Limits

No Data Available

Biological Limits

Noinformation available on biological limit values for this product.

Engineering Measures

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits arenot exceeded.

Personal Protection Equipment

RESPIRATOR: If workplace exposurelimit is exceeded applyRespiratoryprotective equipment. If open handling is unavoidable wear self- contained breathing apparatus: Respirator with A2B2E2K192 combination filter (Draeger); ABEK2P3 combinationfilter (3M); or OV/AG combinationfilter (3M) (AS1715/1716).
EYES: Tight fitting chemical splash goggles and full face shield or basket shaped glasses (AS1336/1337).
HANDS: Glove material Natural rubber (NR), Material thickness 1 mm. Break through time > 480 min. Method DIN EN 374
Glove material Nitrile, Material thickness 0,33 mm. Break through time > 480 min. Method DIN EN 374
Glove material butyl-rubber, Material thickness 0,7 mm. Break through time > 480 min. Method DIN EN 374 (AS2161).
CLOTHING: Wear protective, acid proof clothing. Suitablematerials are: PVC, Neoprene, Nitrile rubber (NBR), rubber. Rubber or plastic boots. (AS3765/2210).

Work Hygienic Practices

Donot inhale vapour, aerosols, mist.
Avoid contact with skin, eyes and clothing. Ensure there is good room ventilation.
No eating, drinking, smoking, or snuffing tobacco at work. Wash face and/or hands before break and end of work. Preventive skin protection
Avoid contaminating clothes with product.
Immediately change moistened and saturated work clothes.
Immediately rinse contaminated or saturated clothing with water. Anycontaminated protective equipment is to be cleaned afteruse.
Handle in accordance with good industrial hygiene and safety

practice. Wear suitableprotectiveclothing, gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Water-like liquid
Odour	Slightlysharp odour
Colour	Colourless, Clear
pH	2 - 4
Vapour Pressure	0.6(@30°C)
Relative Vapour Density	No Data Available
Boiling Point	106(as30%)°C
Melting Point	25(as30%)°C
Freezing Point	No Data Available
Solubility	Miscible
Specific Gravity	1.134 - 1.195
Flash Point	Does notflash
Auto Ignition Temp	No Data Available
Evaporation Rate	<1
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1,132 g/cm3
Specific Heat	No Data Available
Molecular Weight	34.02 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	1.8mPa.s(@0°C)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Product is liquid

Fast or Intensely Burning Characteristics

Flame Propagation or Burning Rate of Solid Materials

Non-Flammables That Could Contribute Unusual Hazards to a Fire

Properties That May Initiate or Contribute to Fire Intensity

Risk of overpressure and burst due to decomposition in confined spaces and pipes. With large-scalefire, violent decomposition or even explosion is possible.

Mixtures withorganic materials (e.g. solvents) candisplayexplosiveproperties. No Data Available

No Data Available

No Data Available

Reactions That Release Gases or No Data Available

Vapours

Release of Invisible Flammable Vapours and Gases
No Data Available

10. STABILITY AND REACTIVITY

General Information Product is a(n) oxidizing agent and reactive.
Unstable in the presence of incompatible materials.

Chemical Stability Stable underrecommended storageconditions.
Commercial products are stabilised to reduce risk of decomposition due to contamination.

Conditions to Avoid Sun rays, heat, heat effect.

Materials to Avoid Reacts violently withreducing agents, alcohols, ammonia, carboxylic acids, acetic acid, cobalt oxides, copper(II) chloride, ethers, metalpowder, permanganates, acetone, benzenesulfonic anhydride,
1,1-dimethylhydrazine, dimethylphenylphosphine, gadolinium hydroxide, hydrogen selenide, iron oxides, lithium tetrahydroaluminate, magnesium tetrahydroaluminate, manganese(II) oxide,
mercury oxide, methyl hydrazine, nickel monoxide, nitrogenous bases, osmium tetraoxide, alpha-phenylselenoketones, phosphorus, phosphorus(V) oxide, quinoline, tetrahydrothiophene, tin(II) chloride, thiodiglycol, thiophane, tin(II) chloride, unsaturated organic compounds, readily oxidisable and combustible materials; avoid contact with combustibles including lubricants and graphite. reacts with cobalt, copper and its alloys, chromium, iridium, iron, lead, manganese, Monel, osmium, palladium, platinum, gold, silver, zinc, and other catalytic metals, metal oxides and salts - avoid metallic bowls and stirrers. violent catalytic decomposition will occur in contact with certain metals such as iron, copper,
chromium, brass, bronze, lead, silver, manganese or their salts.
forms unstable and possible explosive materials with acetic anhydride, aconitic acid, aniline, carboxylic acids, 1,4- diazabicyclo[2,2,2]octane, diphenyldiselenide, ethylacetate,glycols,ketene, ketones,
triethyltin hydroperoxide, 1,3,5-trioxane, vinyl acetate. Is incompatible with mercurous chloride
decomposes in presence of alkalis and even ordinary dust or rust decomposes slowly at ordinary
temperatures and builds up pressure in a closed container; the rate of decomposition doubles for each 10 deg C rise in temperature and decomposition becomes self-sustaining at 141 deg. C
contact with rough surfaces can cause decomposition. Attacks and may ignitesome plastics, rubber and coatings. Avoid anycontamination of this material as it is veryreactive and anycontamination is potentially hazardousHazardous Decomposition Products

Solutions of hydrogen peroxide slowly decompose, releasing oxygen, and so are often stabilised by the addition of acetanilide, etc.

Hazardous Polymerisation Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information dermal (rat) LD50: 3000-5480 mg/kg Inhalation (rat) LC50: 2 mg/L/4H

Oral (rat) LD50: 75 mg/kg

Acute inhalation toxicity: LC50 rat: > 0.17 mg/l / 4 h. Method: literature. Test substance: hydrogen peroxide, 50%. The maximum dose attainable under experimental conditions no fatalities.

Acute dermal toxicity: LD50 rabbit: > 6500 mg/kg. Method: literature. Test substance: Hydrogen peroxide 70%. Skin

irritation rabbit: Slightly irritating. Method: literature

Eye irritation rabbit: Corrosive. Method: literature

Sensitizationguineapig: Notsensitising. Method: literature

Repeated dose toxicity:
Mouse(female): Testing period: 90 d. Subsequent observation period: 6 weeks.
Target organ/effect: Changes of parameters of theblood, body weight development negative.

Irritative effect: Gastrointestinal tract. Method: OECD TG 408. Drinking water analysis.

Mouse(male): Testing period: 90 d. Subsequent observation period: 6 weeks.
Target organ/effect: Changes of parameters of theblood, body weight development negative.
Irritative effect: Gastrointestinaltract. Method: OECD TG 408. Drinking water analysis

Gentoxicity in vitro
Microorganisms, cellcultures. Mutagenic/genotoxic effects. Method: literature. In the presence of metabolic systems no mutagenic effects were observed.

Gentoxicity in vivo
Micronucleus test mouseintraperitoneal (i.p.: Negative. Method: OECD TG 474
Micronucleus test mouse Oral: Negative. Method: literature
Unscheduled DNA synthesis -test (UDS) rat: Negative. Method: literature

Carcinogenicity assessment
Clues to possible carcinogenic effects in animal experiments: Up to date there is no evidence of increased tumour risk. Hydrogen peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH.

EyeIrritant

Hydrogen peroxideconcentrations above 10% arecorrosive tothe eye and may causecorneal ulceration even days after exposure. The material can producechemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

Ingestion

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Hydrogen peroxide may cause blistering and bleeding from the throat and stomach. When swallowed, it may release large quantities of oxygen which could hyper-distend the stomach and gut and may cause internal bleeding, mouth and throat burns and rupture of the gut. There may also be fever, nausea, foaming at the mouth, vomiting, chest and stomach pain, loss of consciousness, and movement disorders and death. Large amounts can also cause cessation of breath, dizziness, headache, tremors weakness or numbness inthe extremities andconvulsions. Hydrogen peroxide concentrate is corrosive and must not be taken undiluted.
The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Inhalation

Inhalation of aerosols (mists, fumes), generated by the material during thecourse of normal handling, may beharmful. Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

Inhaling excessivelevels of mistmayresultinheadache, dizziness, vomiting, diarrhoea, irritability, sleeplessness and fluid in the lungs, and cause extreme irritation of the nose and chest, cough, discomfort, shortness of breath and inflammation of the nose and throat. Whole-body effects of hydrogen peroxide poisoning include tremor, numbness of the limbs, convulsions, coma and shock. Hydrogen peroxide has poor warning properties

SkinIrritant

Skin contact will result in rapid drying, bleaching, leading to chemical burns on prolonged contact
Reactions may not occur on exposure but response may be delayed with symptoms only appearing many hours

Chroniclater. Open cuts, abraded or irritated skin should not be exposed to this material
Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may producesystemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. The material can produce chemical burns following direct contact with the skin. **Other** Hydrogen peroxide as a human food additive is generallyregarded as safe when used in certain limitations. In experimental animals, oral administration of hydrogen peroxide causes dental, liver, kidney, stomach, and intestinal damage. Inhalation exposureto hydrogen peroxidecausedskin irritation and sneezing in dogs, and high mortality in mice.
Hydrogen peroxide added to food is affirmed to be generally regarded as safe(GRAS) by the U.S. FDA when used to treat certain foods in specified limitations [FDA 21 CFR 184.1366 (4/1/93)].
Hydrogen peroxide may be used as acomponent of articles for use in packaging, handling, transporting, or holding food in accordance with prescribed conditions [FDA 21 CFR 175.105 (4/1/93)].
Dose-related growth retardation, induction of dental caries, and pathological changes in theperiodontium were observed in young malerats receiving 1.5% hydrogen peroxide as their drinking fluid (equivalent to approximately 2.1 g/kg/day)2 for 8 weeks.
Effects observed in mice treated for 35 weeks with 0.15% hydrogen peroxide as their drinking fluid (equivalent to approximately 0.29 g/kg/day)3 included degeneration of hepatic and renal tubular epithelialtissues, necrosis, inflammation, irregularities of tissuestructure of thestomach wall, and hypertrophy of thesmallintestine wall.
Concentrations in excess of 1% (equivalent to approximately 1.9 g/kg/day)4 resulted in pronounced weight loss and death within two weeks. In a sequential study of mice treated with 0.4% hydrogen peroxide in drinking water (equivalent to approximately 0.76 g/kg/day)5 , gastric erosion was observed at 30 days and was present consistently throughout the 108 week study period.
Dogs exposed 6 hours/day, 5 days/week for 6 months at an average vapour concentration of 7 ppm (9.73 mg/3) of 90% hydrogen peroxide, developedskin irritation, sneezing, lacrimation, andbleaching of the hair. Autopsy disclosed pulmonary irritation and greatly thickened skin, but no hair follicle destruction.
No significant changes in blood or urinary parameters were observed .
Following eight 6-hour exposures to hydrogen peroxide at a concentration of 79 mg/m3 (56.88 ppm), 7/9 mice died.
Following exposure to hydrogen peroxide at 93 mg/m3 , 6 hours/day, 5 days /week

for 30 exposures, 1/10 rats died. Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.

Carcinogen Category No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity Toxicity tofish:
hydrogen peroxide LC50 96 Fish 0.020mg/L
hydrogen peroxide EC50 3 Algae or other aquatic plants
0.27mg/L hydrogen peroxide EC50 48 Crustacea
2.32mg/L hydrogen peroxide EC50 72 Algae or other
aquatic plants 0.71mg/L hydrogen peroxide NOEC 192
Fish 0.028mg/LPersistence/Degradability

Photochemical degradation (air) takes place. Under ambient conditions quick hydrolysis, reduction or decomposition occurs. The following substances are formed: oxygen and water.

Mobility hydrogen peroxide LOW (KOC = 14.3)

Environmental Fate DoNOT let product reach waterways, drains and sewers. **Bioaccumulation Potential** hydrogen peroxide LOW (LogKOW = -1.571) **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.

Special Precautions for Land Fill

Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG

Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not morethan 60% hydrogen peroxide (stabilized as necessary)
Class	5.1Oxidising Substances
Subsidiary Risk(s)	8Corrosive Substances
EPG	31Oxidizing Substances
UN Number	2014
Hazchem	2P
Pack Group	II
Special Provision	No Data Available

Sea Transport
IMDG

Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION withnot less than 20% but not morethan 60% hydrogen peroxide (stabilized as necessary)
Class	5.1Oxidising Substances
Subsidiary Risk(s)	8Corrosive Substances
UN Number	2014
Hazchem	2P
Pack Group	II
Special Provision	No Data Available
EMS	FH,SQ

Marine Pollutant	Yes

Air Transport

IATA

Proper Shipping Name	Hydrogen peroxide, aqueous solution with 20% or more but 40% or less hydrogen peroxide (stabilised as necessary)
Class	5.1Oxidising Substances
Subsidiary Risk(s)	8CorrosiveSubstances
UN Number	2014
Hazchem	2P
Pack Group	II
Special Provision	No Data Available

Air Transport
IATA

Proper Shipping Name	Hydrogen peroxide, aqueous solution with morethan 40% but 60% or less hydrogen peroxide (stabilised as necessary)
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	A2; A75
Comments	FORBIDDEN FOR AIR TRANSPORT

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 Codefor the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Listed
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	

Not Determined

Taiwan (NCSR)	Not Determined
USA (TSCA)	Listed

16. OTHER INFORMATION

Additional Information ABBREVIATIONS:
ADB - Air-Dry Basis.
BEI - Biological Exposure Indice(s)
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds. CNS - Central Nervous System.
EINECS - European Inventory of Existing Commercial Substances. GHS – Globally Harmonized System
IARC - International Agency for Research on Cancer. M - moles per litre, a unit of concentration.
mg/m3 - Milligrams per cubic meter. NOS - Not Otherwise Specified.
NTP - National Toxicology Program.
OSHA - Occupational Safety and Health Administration.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a UDS Pty Ltd report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this UDS Pty Ltd report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipmentis made.

Report Status

This Safety Data Sheet document has been compiled by UDS Pty Ltd. Further clarification regarding any aspect of this product should contact UDS Pty Ltd directly. While UDS Pty Ltd has taken all due care to include accurate andup-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, UDS Pty Ltd accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.