



SAFETY DATA SHEET

PRODUCT NAME: HYDROGEN PEROXIDE 20-60%

Issue Date: September 22

IDENTIFICATION

Product Names: Hydrogen Peroxide 20-60%
Other Names: Hydrogen Peroxide 20-60%, Steripure
Product Code: ZHPERO60, CHP6020, CHP50F20, CHP3520, KSP505, KSP355, KSP1
Uses: Bleaching, oxidiser in water treatment
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 07 974 4971 Web: www.hamchem.co.nz Email: info@hamchem.nz

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

HAZARD IDENTIFICATION



GHS Classification

Oxidising Liquid – Category 2
Acute Oral Toxicity – Category 4
Skin Corrosion – Category 1B
Serious Eye Damage – Category 1
Specific Target Organ Toxicity (Repeated Exposure) – Category 2
Hazardous to terrestrial vertebrates

Signal Word: Danger

Hazard Statements

H272 - May intensify fire; oxidizer.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage
H373 – May cause damage to organs through prolonged or repeated exposure
Hazardous to Terrestrial Vertebrates

Prevention

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 dusts or mists.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/clothing and eye/face protection.

Response

P301 + P312 - IF SWALLOWED: Call a POISON CENTRE/Doctor immediately. Do NOT induce vomiting.
Rinse mouth. Seek medical attention.

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P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P363 – Wash contaminated clothing before reuse.

P332 + P313 - If skin irritation occurs: Get medical advice/attention.

P304 + P340 - IF INHALED: Remove victim to fresh air and keep comfortable for breathing.

P310 - Immediately call a POISON CENTRE or Doctor.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTRE or Doctor.

P370 + P378 - In case of fire: Use dry chemical, alcohol resistant foam or dry sand to extinguish.

P314 – Get medical advice/attention if you feel unwell

Storage

P405 - Store locked up.

Disposal

P501 - Dispose of contents/container to approved waste facility in accordance with local regulations.

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Hydrogen Peroxide	7722-84-1	30 – 60
Stabiliser	Non-hazardous	Trade Secret
Water	7732-18-5	Balance to 100

FIRST AID MEASURES

Swallowed: For advice, call a Poisons Centre or Doctor at once. Urgent hospital treatment is likely to be required. 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 and prevent aspiration. Observe the patient carefully. 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.

If on skin: Immediately flush body and clothes with large amounts of water, using safety shower 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 a Doctor.

If inhaled: If fumes or combustion products are inhaled, remove from contaminated area. Lay patient down, keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve respirator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to Hospital or a Doctor. Inhalation of vapours or aerosols (mist, 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 complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. Before any such manifestation, the administration of a spray containing a dexamethasone or beclomethasone derivative may be considered. This must definitely be left to a Doctor or a person authorized by said Doctor.

If in eyes: Immediately hold eyelids apart and flush the eye continuously 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 at least for 15 minutes. Transport to Hospital or Doctor without delay.

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Advice to Doctor: Treat symptomatically. Hydrogen Peroxide at moderate concentrations (5% or more) is a strong oxidant. Direct contact with the eye is likely to cause corneal 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 systematic effects attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is remote possibility, however, that nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation. Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not manifest until a few hours have passed by and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate spray, by a Doctor or a person authorized by said Doctor should be considered.

Medical conditions aggravated by Exposure: No information available on medical conditions aggravated by this product.

FIRE FIGHTING MEASURES

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

Flammability Conditions: Powerful oxidizing 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 with combustible material are readily 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 extinguishing agents may accelerate decomposition. Do NOT use halogenated fire extinguishing 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 may create a fire 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 Firefighting Instructions: Do NOT allow firefighting water to reach waterways, drains or sewers. Store firefighting water for treatment. Dam fire control water for later disposal.

Personal Protective Equipment: Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

Flash Point: Does not flash.

Lower Explosion Limit: No data available

Upper Explosion Limit: No data available

Auto-ignition Temperature: No data available

Hazchem Code: 2P

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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 so. Place defective containers in waste receptacle (waste packaging receptacle) made of plastic (not metal). Do not seal defective containers or waste receptacles airtight (danger of bursting due to product decomposition). Never return spilled product into its original container for re-use (risk of decomposition).

Clean Up Procedures: Minor Spills – clean up all spills immediately. No smoking, naked lights or 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 residue 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, spillage from entering drains or water course. Consider evacuation (or protect in place). No smoking, flames or ignition sources. Increase ventilation. Contain spill with sand, earth, or other clean inert materials. NEVER use organic absorbents such as sawdust, paper, and cloth; as fire may result. Avoid any contamination by organic matter. Use spark-free and explosion-proof equipment. Collect 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 run off into drains and waterways. Decontaminate equipment and launder all protective clothing before storage and re-use. If contamination of drains or waterways occurs advise emergency services. For hydrogen peroxide – dilute with large quantities of water (at least 10 times the volume of hydrogen peroxide). Sodium Bicarbonate may be used to accelerate breakdown.

Containment: Stop leak if safe to do so. Isolate the danger area. Dam with sand or earth. Do not use textiles, saw dust or combustible substances.

Decontamination: Clean contaminated surface thoroughly. Recommended cleaning agent: water.

Environmental Precautionary Measures: Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.

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 the Exposure Controls/Personal Protection section of this SDS.

HANDLING & STORAGE

Handling advice: 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 any spillage from clothing. Keep material away from light, heat, flammables or combustibles. Keep cool, dry and away from incompatible materials. Avoid physical damage to containers. Do NOT repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use. Use only minimum quantity required. Avoid using solutions of peroxide in volatile solvents. Solvent evaporation should be controlled 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 use metal spatulas to handle 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 extremely shock and heat-sensitive.

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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 recognized; spontaneous or induced decomposition may culminate in a variety of ways, ranging from moderate gassing to spontaneous ignition or explosion. The heat released from spontaneous decomposition of an energy-rich compound causes a rise in the surrounding temperature; the temperature will rise until thermal balance is established or until the material heats to decomposition. The most effective means for minimizing the consequences of an accident is to limit quantities to a practical minimum. Even gram-scale explosions can be serious. Once ignited the burning of the peroxides cannot be controlled and the area should be evacuated. Unless there is compelling reason to do otherwise, peroxide concentration should be limited to 10% (or less with vigorous reactants) Peroxide concentration is rarely as high as 1% in the reaction mixture of polymerization 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 to the 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 polymerization systems) with full-strength peroxide. Organic peroxides are very sensitive to contamination (especially heavy-metal compounds, metal oxide salts, 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 intense heat, fire or explosion. The consequences of accidental contamination from returning withdrawn material to the storage 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 manufacturers storage and handling recommendations contained within this SDS.

Storage advice: Store in a cool, dry, well-ventilated area. Packages, containers and tanks should be regularly checked by visual observation for any sign of abnormality, e.g. corrosion, exert pressure (bulging), temperature increase etc. Protect against physical damage. Protect from light. Store away from incompatible materials as listed in Stability/Reactivity section of this SDS. Store on jointless smooth concrete floor; recommendation is an acid-proof floor. Only use containers which are specifically permitted for; hydrogen peroxide and/or for transport, storage and tank installations use only suitable materials. 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. Do not keep the container sealed. Avoid residues of the product on the containers. Avoid sun rays, heat and heat effects. Keep away from sources of ignition – no smoking. Keep away from flammable and 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 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, firefighting) and check correct operation periodically. Do not store together with – alkalis, reductants, metallic salts (risk of decomposition). Do not store together with – inflammable substances (risk of fire). Do not store together with organic solvents.

Container: Store in containers with vented lids. Properly passivated aluminum containers. Properly passivated stainless steel. 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 peroxide solution decomposes to produce 300 volumes of oxygen gas. In presence of a strong 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,

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dimethylphenylphosphine, gadolinium hydroxide, hydrogen selenide, iron oxides lithium tetrahydroaluminate, magnesium tetrahydroaluminate, manganese (II) oxide, mercury oxide, methyl hydrazine, nickel monoxide, nitrogenous bases, osmium tetroxide, aliphatic selenoketones, 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 mercurous chloride. Decomposes in presence of alkalis and even ordinary dust or rust. 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 ignite some plastics, rubber and coatings. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.

EXPOSURE CONTROLS & PERSONAL PROTECTION
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Exposure standards: TWA = 1.4mg/m³; TWA = 1ppm

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-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 include the absence of preceding respiratory diseases, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria of diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of an duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder 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 characterized by dyspnea, cough and mucous production. Exposure to hydrogen peroxide via the skin or oral route can cause 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: No information 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 are not exceeded.

Personal Protection Equipment: RESPIRATOR: If workplace exposure limit is exceeded apply Respiratory protective equipment. If open handling is unavoidable, wear self-contained breathing apparatus. Respirator with A2B2E2K192 combination filter (Draeger); ABEK2P3 combination filter (3M); or OV/AG combination filter (3M) (AS1715/1716). EYES: Tight fitting chemical splash goggles and full face shield or basket shaped glasses (AS1336/1337). HANDS: Glove material Natural Rubber (NR), material

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thickness 1mm. Break through time >480 min. Method DIN EN 374 (AS2161). CLOTHING: Wear protective, acid proof clothing. Suitable materials are: PVC, Neoprene, Nitrile Rubber, Rubber. Rubber or plastic boots.

Work Hygienic Practices: Do not inhale vapour, aerosols, mists. Avoid contact with skin, eyes and clothing. Ensure there is good room ventilation. No eating, drinking, smoking while handling product. Wash face and/or hands before breaks and end of work. Use preventative skin protection. Avoid contaminating clothes with product. Immediately change moistened or saturated work clothes. Immediately rinse contaminated or saturated clothing with water. Any contaminated protective equipment is to be cleaned after use. Handle in accordance with good industrial hygiene and safety practices. Wear suitable protective clothing, gloves and eye/face protection.

PHYSICAL & CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Water-like liquid
Odour:	Slightly sharp odour
pH:	2-4
Vapour Pressure:	0.6 (@30°C)
Relative Vapour Density:	No data available
Boiling Point:	106°C (as 30%)
Melting Point:	-25°C (as 30%)
Freezing Point:	No data available
Solubility:	Miscible
Specific Gravity:	1.134 – 1.195
Flash Point:	Does not flash
Auto Ignition Temp:	No data available
Evaporation Rate:	<1
Bulk Density:	No data available
Corrosion Rate:	No data available
Decomposition Temp:	No data available
Density:	1132g/cm ³
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 (@30°C)
Volatile Percent:	No data available
VOC Volume:	No data available
Additional Characteristics:	No data available
Potential for Dust Explosion:	Product is a liquid

Fast or Intensely Burning Characteristics: Risk of over pressure and burst due to decomposition in confined spaces and pipes. With large-scale fire, violent decomposition or even explosion is possible. Mixtures with organic materials (e.g. solvents) can display explosive properties.

Flame Propagation or Burning Rate of Solid Materials: No data available

Non-Flammables that could contribute unusual Hazards to a Fire: No data available

Properties that may Initiate or Contribute to Fire Intensity: No data available

Reactions that release Gases or Vapours: No data available

Release of Invisible Flammable Vapours or Gases: No data available

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STABILITY & REACTIVITY

General Information: Product is an oxidizing agent and reactive. Unstable in the presence of incompatible materials.

Chemical Stability: Stable under recommended storage conditions. Commercial products are stabilized to reduce risk of decomposition due to contamination.

Conditions to Avoid: Sun rays, heat, heat effect.

Materials to Avoid: 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 tetroxide, alpha-phenylselenoketones, phosphorous, phosphorous (V) oxide, quinolone, tetrahydrothiophene, tin(II) chloride, thiodiglycol, thiophane, 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 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 double 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.

Hazardous Decomposition Products: Solutions of hydrogen peroxide slowly decompose, releasing oxygen, and so are often stabilized by the addition of acetanilide etc.

Hazardous Polymerisation: Hazardous polymerisation will not occur.

TOXICOLOGICAL INFORMATION

Toxicity data:

Dermal (Rat) LD50: 3000-5480 mg/kg

Inhalation (Rat) LD50: 2mg/L/4H

Oral (Rat) LD5: 75mg/kg

Acute inhalation toxicity: Rat LC50 > 0.17mg/L/4h Method: Literature. Test Substance: Hydrogen Peroxide 50%. The maximum dose attainable under experimental conditions no fatalities.

Acute dermal toxicity: Rabbit LD50 >6500 mg/kg. Method: Literature. Test Substance: Hydrogen Peroxide 70%.

Skin Irritation: Rabbit – slightly irritating. Method: Literature

Eye Irritation: Rabbit – Corrosive. Method: Literature

Sensitization: Guinea Pig – not sensitizing. Method: Literature

Repeated dose toxicity

Mouse (Female), testing period: 90d. Subsequent observation period: 6 weeks

Target organ/effect: Changes of parameters of the blood, body weight development negative

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

Eye Irritant: Hydrogen peroxide concentrations above 10% are corrosive to the eye and may cause corneal ulceration even days after exposure. The material can produce chemical 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 150gram 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, movement disorders, and possibly death. Large amounts can also cause cessation of breath, dizziness, headache, tremors, weakness or numbness in the extremities and convulsions. 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 the course of normal handling may be harmful. 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 edema. Inhaling excessive levels of mist may result in headache, dizziness, vomiting, diarrhea, 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.

Skin Irritant: Skin contact will result in rapid drying and bleaching, leading to chemical burns on prolonged contact. Reactions may not occur on exposure but response may be delayed due to symptoms only appearing many hours later. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood stream through, for example, cuts, lesions or abrasions, may produce systemic injury with harmful effects. Examine the skin prior to 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.

CHRONIC

Other: Hydrogen Peroxide as a human food additive is generally regarded as safe when used in certain limitations. In experimental animals, oral administration of Hydrogen Peroxide causes dental, liver, kidney, stomach and intestinal damage. Inhalation exposure to Hydrogen Peroxide caused skin irritation and sneezing in dogs, and high mortality in mice. Hydrogen Peroxide added to food is affirmed to be generally regarded as safe by the US FDA when used to treat certain foods in specified limitations. Hydrogen Peroxide may be used as a component of articles for use in packaging, handling, transporting or holding food in accordance with prescribed conditions. Dose-related growth retardation, induction of dental caries, and pathological changes in the periodontium were observed in young male rats receiving 1.5% Hydrogen Peroxide as their drinking fluid for 8 weeks. Effects observed in mice treated for 35 week with 0.15% Hydrogen Peroxide as their drinking fluid included degeneration of hepatic and renal tubular epithelial tissues, necrosis, inflammation, irregularities of tissue structure of the stomach wall, and hypertrophy of the small intestine wall. Concentrations in excess of 1% results in pronounced weight loss and death within two weeks. In a sequential study of mince treated with 0.4% Hydrogen Peroxide in drinking water, gastric erosion was observed at 30 days and was present consistently throughout the 108 week study period. Dogs exposed 6hours/day, 5days/week for 6 months at an average vapour concentration of 7ppm of 90% Hydrogen Peroxide, developed skin irritation, sneezing, lacrimation, and bleaching 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 56.88ppm, 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.

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HamChem Ltd, 75 Ruffell Road, Hamilton, New Zealand. Phone: 07-974-4971 Email: info@hamchem.nz Web: www.hamchem.nz

PRODUCT NAME:	HYDROGEN PEROXIDE 20-60%
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Carcinogen Category: No data available

ECOLOGICAL INFORMATION

Ecotoxicity (Aquatic): LC50 96 Fish 0.020mg/L
EC50 3 Algae or other aquatic plants 0.27mg/L
EC50 48 Crustacea 2.32mg/L
EC50 72 Algae or other aquatic plants 0.71mg/L
NOEC 192 Fish 0.028mg/L

Persistence & 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: Do NOT let product reach waterways, drains and sewers.

Bioaccumulation Potential: Hydrogen Peroxide LOW (LogKOW -1.571)

Environmental Impact: No data available

DISPOSAL CONSIDERATIONS

General Information: Dispose of in accordance with all local, regional and national regulations. All empty packaging should be disposed of in accordance with all local, regional or national regulations or recycled/reconditioned at an approved facility.

Special Precautions for Landfill: Contact a specialist disposal company or the local waste regulator for advice.

TRANSPORT INFORMATION

UN Number: 2014
Proper Shipping name: Hydrogen Peroxide, Aqueous Solution with not less than 20% but not more than 60% hydrogen peroxide
Dangerous Goods Class: 5.1 Oxidising Substances
Subsidiary Risk: 8 Corrosive Substances
Packing group: II
Hazchem Code: 2P

REGULATORY INFORMATION

HSNO Classifications: 5.1.1B, 6.1D, 8.2B, 8.3A, 6.9B, 9.3C

EPA Approval: HSR001326

OTHER INFORMATION

End of SDS.

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