



Peratec PLUS Fungicide

Elite Surface Technologies (incorporating Jaegar Australia/ALJ8).

Chemwatch Hazard Alert Code: 4

Version No: 1.2

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 19/01/2018

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S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

| | |
|-------------------------------|--|
| Product name | Peratec PLUS Fungicide |
| Synonyms | Not Available |
| Proper shipping name | HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILISED |
| Other means of identification | Not Available |

Relevant identified uses of the substance or mixture and uses advised against

| | |
|--------------------------|---|
| Relevant identified uses | For the control of certain fungal diseases in various crops and situations. |
|--------------------------|---|

Details of the supplier of the safety data sheet

| | |
|-------------------------|---|
| Registered company name | Elite Surface Technologies (incorporating Jaegar Australia/ALJ8). |
| Address | 305 Frankston Dandenong Rd VIC Australia |
| Telephone | 03 9768 3860 |
| Fax | 03 9768 2896 |
| Website | www.elitesurfacetech.com.au |
| Email | sales@elitesurtech.com.au |

Emergency telephone number

| | |
|-----------------------------------|----------------------------|
| Association / Organisation | Elite Surface Technologies |
| Emergency telephone numbers | 0419 301 309 |
| Other emergency telephone numbers | 0418 474 492 |

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

| | Min | Max |
|--------------|-----|-----|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 4 | |
| Reactivity | 2 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|--------------------|--|
| Poisons Schedule | Not Applicable |
| Classification [1] | Serious Eye Damage Category 1, Skin Corrosion/Irritation Category 1A, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Acute Aquatic Hazard Category 2, Oxidizing Liquid Category 2 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI |

Label elements

| | |
|---------------------|--------|
| Hazard pictogram(s) | |
| SIGNAL WORD | DANGER |

Continued...

Hazard statement(s)

| | |
|------|--|
| H314 | Causes severe skin burns and eye damage. |
| H302 | Harmful if swallowed. |
| H332 | Harmful if inhaled. |
| H401 | Toxic to aquatic life. |
| H272 | May intensify fire; oxidiser. |

Precautionary statement(s) Prevention

| | |
|------|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P221 | Take any precaution to avoid mixing with combustibles/organic material. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P271 | Use only outdoors or in a well-ventilated area. |

Precautionary statement(s) Response

| | |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |

Precautionary statement(s) Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

Precautionary statement(s) Disposal

| | |
|------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|------|---|

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|-----------|-----------|--------------------------|
| 7722-84-1 | 20-40 | <u>hydrogen peroxide</u> |
| 79-21-0 | 10-20 | <u>peracetic acid</u> |

SECTION 4 FIRST AID MEASURES**Description of first aid measures**

| | |
|---------------------|---|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ 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 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 Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ 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 doctor. |
| Inhalation | <ul style="list-style-type: none"> ▶ 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 resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ 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 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 derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p> |
| Ingestion | <ul style="list-style-type: none"> ▶ 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 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.

Indication of any immediate medical attention and special treatment needed

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 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 due to gas formation"

Fisher Scientific SDS

for corrosives:

BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema .
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate seizures.
- ▶ Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Skin burns should be covered with dry, sterile bandages, following decontamination.
- ▶ **DO NOT attempt neutralisation as exothermic reaction may occur.**

ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consider endoscopy to evaluate oral injury.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. *EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994*

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 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. (ICSC24419/24421

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

For hydrogen peroxide

NOTE: Chemical extinguishing agents may accelerate decomposition. [CCINFO]

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).

Special hazards arising from the substrate or mixture

Fire Incompatibility

- ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

| | |
|------------------------------|---|
| Fire Fighting | <ul style="list-style-type: none"> ▶ 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 courses. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include: carbon dioxide (CO₂) other pyrolysis products typical of burning organic material. May emit corrosive fumes.</p> |
| HAZCHEM | 2P |

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|--|
| Minor Spills | <ul style="list-style-type: none"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Check regularly for spills and leaks. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | <ul style="list-style-type: none"> ▶ 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. <p>For hydrogen peroxide:</p> <ul style="list-style-type: none"> ▶ Dilute with large quantities of water (at least ten (10) times the volume of hydrogen peroxide). ▶ Sodium bicarbonate may be used to accelerate breakdown. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

| | |
|--------------------------|--|
| Safe handling | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material. ▶ DO NOT allow clothing wet with material to stay in contact with skin |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|---|
| Suitable container | <ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> ▶ Removable head packaging; ▶ Cans with friction closures and ▶ low pressure tubes and cartridges <p>may be used.</p> <p>Hydrogen peroxide containing/ generating materials requiring rigid packaging.</p> <p>Store in:</p> <ul style="list-style-type: none"> ▶ containers with vented lids. ▶ properly passivated aluminium containers. ▶ properly passivated stainless steel. |
| Storage incompatibility | <p>Hydrogen peroxide</p> <ul style="list-style-type: none"> ▶ 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. ▶ The peroxyacids (peracids) are amongst the most powerful oxidants and it is often unnecessary to isolate them from the mixture of acid and hydrogen peroxide used to generate them. ▶ Pure lower aliphatic members are explosive (performic as an example), at high but not low concentrations, being sensitive to heat but not usually shock. ▶ Peroxycarboxylic acids are about 1000x weaker than the parent carboxylic acid, owing the absence of resonance stabilization of the anion. For similar reasons, their pKas tend also to be relatively insensitive to the substituent R. ▶ Many of the salts of peroxyacids are unstable or explosive and are capable of initiation by heat, friction or impact, and all are powerful oxidants. <p>BREThERICK L.: Handbook of Reactive Chemical Hazards</p> <ul style="list-style-type: none"> ▶ Inorganic peroxy compounds are potent oxidisers that pose fire or explosive hazards when in contact with ordinary combustible materials. ▶ Inorganic peroxides react with organic compounds to generate organic peroxide and hydroperoxide products that react violently with reducing agents. ▶ Inorganic oxidising agents can react with reducing agents to generate heat and products that may be gaseous (causing pressurization of closed containers). The products may themselves be capable of further reactions (such as combustion in the air). ▶ Inorganic reducing agents react with oxidizing agents to generate heat and products that may be flammable, combustible, or otherwise reactive. Their reactions with oxidizing agents may be violent. ▶ Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions. ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous ▶ As a class, organic peroxides are amongst the most hazardous materials commonly used in the workplace or laboratory. Several are highly flammable and extremely sensitive to shock, heat, spark, friction, impact and light and readily react with strong oxidising and reducing agents. ▶ Organic compounds, especially finely divided materials, can ignite on contact with concentrated peroxides. ▶ Strongly reduced material such as sulfides, nitrides, and hydrides may react explosively with peroxides. ▶ Avoid storage with reducing agents. |

Continued...

- ▶ Peroxides decompose over time and give off oxygen.
- ▶ Peroxides require controlled storage for stability.
- ▶ **DANGER: Explosion hazard, never mix peroxides with accelerators or promoters.**
- ▶ Avoid strong bases.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA


| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|-------------------|-------------------|-------------------|---------------|---------------|---------------|
| Australia Exposure Standards | hydrogen peroxide | Hydrogen peroxide | 1.4 mg/m3 / 1 ppm | Not Available | Not Available | Not Available |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|-------------------|-------------------|---------------|---------------|---------------|
| hydrogen peroxide | Hydrogen peroxide | Not Available | Not Available | Not Available |
| peracetic acid | Peracetic acid | Not Available | Not Available | Not Available |

| Ingredient | Original IDLH | Revised IDLH |
|-------------------|---------------|---------------|
| hydrogen peroxide | 75 ppm | Not Available |
| peracetic acid | Not Available | Not Available |

Exposure controls

| | |
|---|--|
| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ▶ Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection. ▶ Alternatively a gas mask may replace splash goggles and face shields. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Elbow length PVC gloves ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <ul style="list-style-type: none"> ▶ Where hydrogen peroxide exposure may occur do NOT wear PVA gloves. ▶ DO NOT use leather or cotton gloves, leather shoes as spill may cause fire. ▶ Care: Effects may be delayed. ▶ Hand cream offers no protection for hydrogen peroxide and should not be used. |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. |
| Thermal hazards | Not Available |

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

Peratec PLUS Fungicide

| Material | CPI |
|-------------------|-----|
| BUTYL | C |
| NAT+NEOPR+NITRILE | C |
| NATURAL RUBBER | C |
| NATURAL+NEOPRENE | C |

Respiratory protection

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--|----------------------|----------------------|
|------------------------------------|--|----------------------|----------------------|

Peratec PLUS Fungicide

| | | | | |
|------------------|---|-----------|-------|----------------------|
| NEOPRENE | C | up to 10 | 1000 | A-AUS / Class - 1 |
| NEOPRENE/NATURAL | C | up to 50 | 1000 | - A-AUS / Class 1 |
| NITRILE | C | up to 50 | 5000 | Airline * - |
| PVC | C | up to 100 | 5000 | - A-2 |
| VITON | C | up to 100 | 10000 | - A-3 |
| | | 100+ | | - Airline** |

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

A(All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 deg C)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|---|-------------------------|--|---------------|
| Appearance | Clear colourless liquid | | |
| Physical state | Liquid | Relative density (Water = 1) | 1.13 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | 2.2 | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | -30 | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Available |
| Flash point (°C) | Not Available | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Available | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water (g/L) | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. Solutions of hydrogen peroxide slowly decompose, releasing oxygen, and so are often stabilised by the addition of acetanilide, etc. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

| | |
|------------------|--|
| Inhaled | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. 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.</p> <p>Inhaling excessive levels of mist may result in headache, 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.</p> |
| Ingestion | <p>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.</p> <p>The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>Ingestion of organic peroxides may produce nausea, vomiting, abnormal pain, stupor, bluish discoloration of skin and mucous membranes. Inflammation of the heart muscle may also occur.</p> |

| | |
|---------------------|---|
| | 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 in the extremities and convulsions. |
| Skin Contact | <p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic.</p> <p>Skin contact will result in rapid drying, bleaching, leading to chemical burns on prolonged contact</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Hydrogen peroxide is used topically as dental gel and to clean minor wounds. It may cause dose dependent effect on the skin including bleaching, blistering, reddening and corrosion (at >50% concentration).</p> |
| Eye | <p>The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> <p>Hydrogen peroxide concentrations above 10% are corrosive to the eye and may cause corneal ulceration even days after exposure.</p> |
| Chronic | <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.</p> <p>Hydrogen peroxide as a human food additive is generally regarded as safe, when used with certain limitations. In experimental animals hydrogen peroxide given by mouth causes damage to the teeth, liver, kidney, stomach and bowel. Inhalation exposure to hydrogen peroxide caused skin irritation, sneezing and death in animals. Skin irritation, sneezing, excessive secretion of tears, and whitening of the hair was also seen in animals chronically exposed to hydrogen peroxide.</p> <p>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.</p> <p>Persistent exposure over a long period of time to peroxides produces allergic skin reactions (redness and scaling of the skin) and asthmatic wheezing.</p> |

| | | |
|-------------------------------|---|-----------------------------------|
| Peratec PLUS Fungicide | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| hydrogen peroxide | TOXICITY | IRRITATION |
| | dermal (rat) LD50: 4060 mg/kg ^[2] | Not Available |
| | Inhalation (rat) LC50: >0.17 mg/l4 h ^[1] | |
| | Oral (rat) LD50: 376 mg/kg ^[2] | |
| peracetic acid | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: 1410 mg/kg ^[2] | Eye (rabbit): 1 mg SEVERE |
| | Oral (rat) LD50: 1540 mg/kg ^[2] | Skin (rabbit): 500 mg open SEVERE |

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|-----------------------|---|
| PERACETIC ACID | <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p> <p>NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.</p> <p>Data is for 40% peracetic acid NOTE: Equivocal tumorigen by RTECS criteria</p> |
|-----------------------|---|

| | | | |
|--|---|---------------------------------|---|
| Acute Toxicity | ✓ | Carcinogenicity | ⊘ |
| Skin Irritation/Corrosion | ✓ | Reproductivity | ⊘ |
| Serious Eye Damage/Irritation | ✓ | STOT - Single Exposure | ⊘ |
| Respiratory or Skin sensitisation | ⊘ | STOT - Repeated Exposure | ⊘ |
| Mutagenicity | ⊘ | Aspiration Hazard | ⊘ |

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Peratec PLUS Fungicide

| Peratec PLUS Fungicide | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------------------------|---------------|--------------------|---------------|---------------|---------------|
| | Not Available | Not Available | Not Available | Not Available | Not Available |

| hydrogen peroxide | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-------------------|----------|--------------------|-------------------------------|-----------|--------|
| | LC50 | 96 | Fish | 16.4mg/L | 2 |
| | EC50 | 48 | Crustacea | 2.32mg/L | 4 |
| | EC50 | 72 | Algae or other aquatic plants | 0.71mg/L | 4 |
| | EC0 | 24 | Crustacea | =3.8mg/L | 1 |
| | NOEC | 192 | Fish | 0.028mg/L | 4 |

| peracetic acid | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|----------------|----------|--------------------|-------------------------------|-----------|--------|
| | LC50 | 96 | Fish | 0.078mg/L | 2 |
| | EC50 | 48 | Crustacea | 0.73mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 0.16mg/L | 2 |
| | NOEC | 96 | Fish | 0.024mg/L | 2 |

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Toxic to aquatic organisms.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For hydrogen peroxide: log Kow: -1.36:

Environmental Fate: Hydrogen peroxide is a naturally occurring substance (typical background concentrations < 1 - 30 g/l), which is produced by almost all cells in their metabolism, with the exception of anaerobic bacteria. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and can be degraded by micro-organisms or higher organisms. Air - Hydrogen peroxide is degraded by light and thus may be removed from the atmosphere by photolysis giving rise to hydroxyl radicals, by reaction with hydroxyl radicals, or by heterogenous loss processes such as rain-out. Significantly higher hydrogen peroxide concentrations are found in polluted atmospheres as compared with clean air, presumably due to oxidation of reactive hydrocarbons as a result of exposure to light.

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-------------------|---------------------------|-----------------------------|
| hydrogen peroxide | LOW | LOW |
| peracetic acid | LOW (Half-life = 14 days) | LOW (Half-life = 5.75 days) |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|-------------------|------------------------|
| hydrogen peroxide | LOW (LogKOW = -1.571) |
| peracetic acid | LOW (LogKOW = -1.0742) |

Mobility in soil

| Ingredient | Mobility |
|-------------------|-------------------|
| hydrogen peroxide | LOW (KOC = 14.3) |
| peracetic acid | LOW (KOC = 4.272) |

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> |
|-------------------------------------|--|

- ▶ **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- ▶ Recycle wherever possible.
- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- ▶ Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus.

SECTION 14 TRANSPORT INFORMATION

Labels Required

| | | |
|------------------|---|---|
| |  |  |
| Marine Pollutant | NO | |
| HAZCHEM | 2P | |

Land transport (ADG)

| | | | | | | |
|------------------------------|---|--|--------------------|-----|------------------|-----|
| UN number | 3149 | | | | | |
| UN proper shipping name | HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILISED | | | | | |
| Transport hazard class(es) | <table border="1"> <tr> <td>Class</td> <td>5.1</td> </tr> <tr> <td>Subrisk</td> <td>8</td> </tr> </table> | | Class | 5.1 | Subrisk | 8 |
| Class | 5.1 | | | | | |
| Subrisk | 8 | | | | | |
| Packing group | II | | | | | |
| Environmental hazard | Not Applicable | | | | | |
| Special precautions for user | <table border="1"> <tr> <td>Special provisions</td> <td>196</td> </tr> <tr> <td>Limited quantity</td> <td>1 L</td> </tr> </table> | | Special provisions | 196 | Limited quantity | 1 L |
| Special provisions | 196 | | | | | |
| Limited quantity | 1 L | | | | | |

Air transport (ICAO-IATA / DGR)

| | | | | | | | | | | | | | | | | |
|---|---|--|--------------------|-----|---------------------------------|-----|-------------------------------|-----|--|-----|--|-----|---|------|--|-------|
| UN number | 3149 | | | | | | | | | | | | | | | |
| UN proper shipping name | Hydrogen peroxide and peroxyacetic acid mixture stabilized with acid(s), water and not more than 5% peroxyacetic acid | | | | | | | | | | | | | | | |
| Transport hazard class(es) | <table border="1"> <tr> <td>ICAO/IATA Class</td> <td>5.1</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>8</td> </tr> <tr> <td>ERG Code</td> <td>5C</td> </tr> </table> | | ICAO/IATA Class | 5.1 | ICAO / IATA Subrisk | 8 | ERG Code | 5C | | | | | | | | |
| ICAO/IATA Class | 5.1 | | | | | | | | | | | | | | | |
| ICAO / IATA Subrisk | 8 | | | | | | | | | | | | | | | |
| ERG Code | 5C | | | | | | | | | | | | | | | |
| Packing group | II | | | | | | | | | | | | | | | |
| Environmental hazard | Not Applicable | | | | | | | | | | | | | | | |
| Special precautions for user | <table border="1"> <tr> <td>Special provisions</td> <td>A96</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>554</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>5 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>550</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>1 L</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y540</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>0.5 L</td> </tr> </table> | | Special provisions | A96 | Cargo Only Packing Instructions | 554 | Cargo Only Maximum Qty / Pack | 5 L | Passenger and Cargo Packing Instructions | 550 | Passenger and Cargo Maximum Qty / Pack | 1 L | Passenger and Cargo Limited Quantity Packing Instructions | Y540 | Passenger and Cargo Limited Maximum Qty / Pack | 0.5 L |
| Special provisions | A96 | | | | | | | | | | | | | | | |
| Cargo Only Packing Instructions | 554 | | | | | | | | | | | | | | | |
| Cargo Only Maximum Qty / Pack | 5 L | | | | | | | | | | | | | | | |
| Passenger and Cargo Packing Instructions | 550 | | | | | | | | | | | | | | | |
| Passenger and Cargo Maximum Qty / Pack | 1 L | | | | | | | | | | | | | | | |
| Passenger and Cargo Limited Quantity Packing Instructions | Y540 | | | | | | | | | | | | | | | |
| Passenger and Cargo Limited Maximum Qty / Pack | 0.5 L | | | | | | | | | | | | | | | |

Sea transport (IMDG-Code / GGVSee)

| | | | | | | |
|----------------------------|--|--|------------|-----|--------------|---|
| UN number | 3149 | | | | | |
| UN proper shipping name | HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED | | | | | |
| Transport hazard class(es) | <table border="1"> <tr> <td>IMDG Class</td> <td>5.1</td> </tr> <tr> <td>IMDG Subrisk</td> <td>8</td> </tr> </table> | | IMDG Class | 5.1 | IMDG Subrisk | 8 |
| IMDG Class | 5.1 | | | | | |
| IMDG Subrisk | 8 | | | | | |
| Packing group | II | | | | | |
| Environmental hazard | Not Applicable | | | | | |

Special precautions for user

| | |
|--------------------|-----------|
| EMS Number | F-H , S-Q |
| Special provisions | 196 |
| Limited Quantities | 1 L |

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****HYDROGEN PEROXIDE(7722-84-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

PERACETIC ACID(79-21-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

| National Inventory | Status |
|-------------------------------|--|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (hydrogen peroxide; peracetic acid) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | Y |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average

PC – STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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