



Pola Rapid 38% Hydrogen Peroxide

SDI Limited

Version No: 3.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

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L.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

| | |
|-------------------------------|--|
| Product name | Pola Rapid 38% Hydrogen Peroxide |
| Chemical Name | Not Applicable |
| Synonyms | Not Available |
| Proper shipping name | HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilised as necessary) |
| Chemical formula | Not Applicable |
| Other means of identification | Not Available |

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

| | |
|--------------------------|---|
| Relevant identified uses | To remove discoloration of teeth, to be performed by a dentist. |
|--------------------------|---|

Details of the manufacturer or supplier of the safety data sheet

| Registered company name | SDI Limited | SDI (North America) Inc. | SDI Germany GmbH |
|-------------------------|--|---|--|
| Address | 3-15 Brunsdon Street Bayswater VIC 3153 Australia | 1279 Hamilton Parkway Itasca IL 60143 United States | Hansestrasse 85 Cologne D-51149 Germany |
| Telephone | +61 3 8727 7111 | +1 630 361 9200 | +49 0 2203 9255 0 |
| Fax | +61 3 8727 7222 | Not Available | +49 0 2203 9255 200 |
| Website | www.sdi.com.au | www.sdi.com.au | www.sdi.com.au |
| Email | info@sdi.com.au | USA.Canada@sdi.com.au | germany@sdi.com.au |

| | |
|-------------------------|---|
| Registered company name | SDI HOLDINGS PTY LTD DO |
| Address | Rua Dr. Reinaldo Schmithausen 3141 – Cordeiros Itajaí – SC – CEP 88310-004 Brazil |
| Telephone | +55 11 3092 7100 |
| Fax | Not Available |
| Website | http://www.sdi.com.au/ |
| Email | Brasil@sdi.com.au |

Emergency telephone number

| | | |
|-----------------------------------|-----------------------------------|-------------------------------------|
| Association / Organisation | SDI Limited | CHEMWATCH EMERGENCY RESPONSE (24/7) |
| Emergency telephone numbers | 131126 Poisons Information Centre | +61 1800 951 288 |
| Other emergency telephone numbers | +61 3 8727 7111 | +61 3 9573 3188 |

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

| | |
|--------------------|--|
| Poisons Schedule | S6 |
| Classification [1] | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 |
| Legend: | 1. Classification by vendor; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

Label elements

| | |
|---------------------|--------|
| Hazard pictogram(s) | |
| Signal word | Danger |

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Hazard statement(s)

| | |
|-------------|-----------------------------------|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |

Precautionary statement(s) Prevention

| | |
|-------------|--|
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P261 | Avoid breathing mist/vapours/spray. |
| P264 | Wash all exposed external body areas thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |

Precautionary statement(s) Response

| | |
|-----------------------|--|
| 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/doctor/physician/first aider. |
| P301+P312 | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell. |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P330 | Rinse mouth. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |

Precautionary statement(s) Storage

| | |
|------------------|--|
| P405 | Store locked up. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

Precautionary statement(s) Disposal

| | |
|-------------|--|
| P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|-------------|--|

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|----------------|---|-------------------|
| 7722-84-1 | 38 | hydrogen peroxide |
| Legend: | 1. Classification by vendor; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available | |

SECTION 4 First aid measures

Description of first aid measures

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|---------------------|--|
| 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 contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| 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. |
| 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. |

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Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|---|
| Fire Incompatibility | <ul style="list-style-type: none"> ▶ Avoid storage with reducing agents. ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous |
|-----------------------------|---|

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. ▶ Fight fire from a safe distance, with adequate cover. ▶ Extinguishers should be used only by trained personnel. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ If fire gets out of control withdraw personnel and warn against entry. ▶ Equipment should be thoroughly decontaminated after use. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Will not burn but increases intensity of fire. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ Heat affected containers remain hazardous. ▶ Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition. ▶ May emit irritating, poisonous or corrosive fumes. |
| 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. ▶ 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 | <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. ▶ 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, 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 emergency services. |

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

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SECTION 7 Handling and storage

Precautions for safe handling

| | |
|-------------------|---|
| Safe handling | <p>For oxidisers, including peroxides.</p> <ul style="list-style-type: none"> • 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 peroxides in volatile solvents. Solvent evaporation should be controlled to avoid dangerous concentration of the peroxide. • Do NOT allow oxidisers to contact iron or compounds of iron, cobalt, or copper, metal oxide salts, acids or bases. • Do NOT use metal spatulas to handle oxidisers • 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 oxidiser freezes or precipitates. Peroxides, in particular, in this form are extremely shock 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 oxidisers is widely recognised; 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 minimising 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 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 polymerisation or other free-radical reactions. • Oxidisers should be added slowly and cautiously to the reaction medium. This should be completed prior to heating and with good agitation. • Addition oxidisers 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 polymerisation systems) with full-strength oxidisers • 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 manufacturer's storage and handling recommendations contained within this MSDS. |
| Other information | <p>Do not store in direct sunlight.</p> <p>Store in a dry and well ventilated-area, away from heat and sunlight.</p> <p>Store between 2 and 8 deg C.</p> |

Conditions for safe storage, including any incompatibilities

| | |
|-------------------------|---|
| Suitable container | <ul style="list-style-type: none"> ▸ DO NOT repack. Use containers supplied by manufacturer only. |
| Storage incompatibility | <ul style="list-style-type: none"> ▸ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous ▸ Avoid storage with reducing agents. ▸ Avoid strong acids, 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 ppm / 1.4 mg/m3 | Not Available | Not Available | Not Available |

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|-------------------|---------------|---------------|---------------|
| hydrogen peroxide | Not Available | Not Available | Not Available |


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

MATERIAL DATA

Exposure controls

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|----------------------------------|--|
| 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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.</p> <p>An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> |
|----------------------------------|--|

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| | Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant. | |
| | Type of Contaminant: | Air Speed: |
| | solvent, vapours, degreasing etc., evaporating from tank (in still air). | 0.25-0.5 m/s (50-100 f/min.) |
| | aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) |
| | direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) |
| | grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) |
| | Within each range the appropriate value depends on: | |
| | Lower end of the range | Upper end of the range |
| | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents |
| | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity |
| Individual protection measures, such as personal protective equipment | 3: Intermittent, low production. | 3: High production, heavy use |
| | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
| | Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. | |
| |  | |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▶ Full face shield may be required for supplementary but never for primary protection of eyes. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. | |
| Skin protection | See Hand protection below | |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber | |
| 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. ▶ Ensure there is ready access to a safety shower. | |

Respiratory protection

Type B Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES | B-AUS | - | B-PAPR-AUS / Class 1 |
| up to 50 x ES | - | B-AUS / Class 1 | - |
| up to 100 x ES | - | B-2 | B-PAPR-2 ^ |

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, 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 degC)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

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|------------------|-----------------------------------|---|---------------|
| Appearance | Clear blue gel, mixes with water. | | |
| Physical state | Gel | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | 4.5-6 | Decomposition temperature (°C) | Not Available |

Continued...

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| | | | |
|--|---------------|----------------------------------|----------------|
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| 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 | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 Stability and reactivity

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|------------------------------------|---|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> Unstable in the presence of incompatible materials. Product is considered stable under normal handling conditions. Prolonged exposure to heat. Hazardous polymerisation will not occur. <p>Solutions of hydrogen peroxide slowly decompose, releasing oxygen, and so are often stabilised by the addition of acetanilide, etc.</p> |
| 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

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|--------------|---|
| Inhaled | <p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</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> |
| Skin Contact | <p>Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>The material may accentuate any pre-existing dermatitis condition</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, puncture wounds 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> |
| Eye | <p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> |
| Chronic | <p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> |

| | | |
|----------------------------------|--|---------------|
| Pola Rapid 38% Hydrogen Peroxide | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| hydrogen peroxide | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >2000 mg/kg ^[1] | Not Available |
| | Inhalation(Mouse) LC50: 2800 mg/L4h ^[2] | |
| | Oral (Rat) LD50: >225 mg/kg ^[2] | |
| Legend: | <p>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</p> | |

| | |
|-------------------|--|
| HYDROGEN PEROXIDE | No significant acute toxicological data identified in literature search. |
|-------------------|--|

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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. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

For hydrogen peroxide:

Hazard increases with peroxide concentration, high concentrations contain an additive stabiliser.

Pharmacokinetics

Hydrogen peroxide is a normal product of metabolism. It is readily decomposed by catalase in normal cells. In experimental animals exposed to hydrogen peroxide, target organs affected include the lungs, intestine, thymus, liver, and kidney, suggesting its distribution to those sites.

Hydrogen peroxide has been detected in breath.

- ▶ Absorption: Hydrogen peroxide is decomposed in the bowel before absorption. When applied to tissue, solutions of hydrogen peroxide have poor penetrability.
- ▶ Distribution: Hydrogen peroxide is produced metabolically in intact cells and tissues. It is formed by reduction of oxygen either directly in a two-electron transfer reaction, often catalysed by flavoproteins, or by an initial one-electron step to O₂ followed by dismutation to hydrogen peroxide.
- ▶ Hydrogen peroxide has been detected in serum and in intact liver. based on the results of toxicity studies, the lungs, intestine, thymus, liver, and kidney may be distribution sites. In rabbits and cats that died after intravenous administration of hydrogen peroxide, the lungs were pale and emphysematous. Following intraperitoneal injection of hydrogen peroxide in mice, pyknotic nuclei were induced in the intestine and thymus (IARC 1985). Degeneration of hepatic and renal tubular epithelial tissue was observed following oral administration of hydrogen peroxide to mice.
- ▶ Metabolism: Glutathione peroxidase, responsible for decomposing hydrogen peroxide, is present in normal human tissues (IARC 1985). When hydrogen peroxide comes in contact with catalase, an enzyme found in blood and most tissues, it rapidly decomposes into oxygen and water.
- ▶ Excretion: Hydrogen peroxide has been detected in human breath at levels ranging from 1.0+/-0.5 g/L to 0.34+/-0.17 g/L.

Carcinogenicity

Gastric and duodenal lesions including adenomas, carcinomas, and adenocarcinomas have been observed in mice treated orally with hydrogen peroxide. Marked strain differences in the incidence of tumors have been observed. Papilloma development has been observed in mice treated by dermal application.

Genotoxicity

Hydrogen peroxide induced DNA damage, sister chromatid exchanges and chromosomal aberrations in mammalian cells *in vitro*. Hydrogen peroxide induced DNA damage in bacteria (*E. coli*), and was mutagenic to bacteria (*Salmonella typhimurium*) and the fungi, *Neurospora crassa* and *Aspergillus chevallieri*, but not to *Streptomyces griseoflavus*. It was not mutagenic to *Drosophila melanogaster* or to mammalian cells *in vitro*.

Developmental Toxicity

Malformations have been observed in chicken embryos treated with hydrogen peroxide, but experiments with mice and rats have been negative. Female rats that received 0.45% hydrogen peroxide (equivalent to approximately 630 mg/kg/day)⁷ as the sole drinking fluid for five weeks produced normal litters when mated with untreated males.

Doses of 1.4 to 11 mol/egg hydrogen peroxide (purity 30%) dissolved in water were injected into the airspace of groups of 20-30 white leghorn chicken eggs on day 3 of incubation.

Embryos were examined on day 14. The incidence of embryonic deaths and malformations was dose-related and detected at doses of 2.8 mol/egg and above. The combined ED₅₀ was 2.7 mol/egg.

Reproductive Toxicity

A 1% solution of hydrogen peroxide (equivalent to 1900 mg/kg/day) given as the sole drinking fluid to three-month-old male mice for 7-28 days did not cause infertility.

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.

| | | | |
|-----------------------------------|---|--------------------------|---|
| 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 either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

| Pola Rapid 38% Hydrogen Peroxide | 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 |
| | EC50 | 72h | Algae or other aquatic plants | 0.69mg/l | 4 |
| | EC50 | 48h | Crustacea | 2mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 2.27mg/l | 4 |
| | NOEC(ECx) | 72h | Algae or other aquatic plants | 0.1mg/l | 1 |
| | LC50 | 96h | Fish | 16.4mg/l | 2 |
| Legend: | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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 | | | | |

Pola Rapid 38% Hydrogen Peroxide

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-------------------|-------------------------|------------------|
| hydrogen peroxide | LOW | LOW |

Bioaccumulative potential

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

Mobility in soil

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

SECTION 13 Disposal considerations

Waste treatment methods

| | |
|------------------------------|---|
| Product / Packaging disposal | <p>▶ DO NOT allow wash water from cleaning or process equipment to enter drains.</p> <p>▶ It may be necessary to collect all wash water for treatment before disposal.</p> <p>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</p> <p>▶ Where in doubt contact the responsible authority.</p> <p>Consult State Land Waste Management Authority for disposal.</p> <p>Bury residue in an authorised landfill.</p> |
|------------------------------|---|

SECTION 14 Transport information

Labels Required

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

Land transport (ADG)

| | | | | | |
|------------------------------------|---|--------------------|----------------|-------------------|-----|
| 14.1. UN number or ID number | 2014 | | | | |
| 14.2. UN proper shipping name | HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilised as necessary) | | | | |
| 14.3. Transport hazard class(es) | <table> <tr> <td>Class</td><td>5.1</td></tr> <tr> <td>Subsidiary Hazard</td><td>8</td></tr> </table> | Class | 5.1 | Subsidiary Hazard | 8 |
| Class | 5.1 | | | | |
| Subsidiary Hazard | 8 | | | | |
| 14.4. Packing group | II | | | | |
| 14.5. Environmental hazard | Not Applicable | | | | |
| 14.6. Special precautions for user | <table> <tr> <td>Special provisions</td><td>Not Applicable</td></tr> <tr> <td>Limited quantity</td><td>1 L</td></tr> </table> | Special provisions | Not Applicable | Limited quantity | 1 L |
| Special provisions | Not Applicable | | | | |
| Limited quantity | 1 L | | | | |

Air transport (ICAO-IATA / DGR)

| | | | | | | | | | | | |
|--|---|--------------------|----------------|---------------------------------|-----|-------------------------------|-----|--|-----|--|-----|
| 14.1. UN number | 2014 | | | | | | | | | | |
| 14.2. UN proper shipping name | Hydrogen peroxide, aqueous solution with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary) | | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table> <tr> <td>ICAO/IATA Class</td><td>5.1</td></tr> <tr> <td>ICAO / IATA Subsidiary Hazard</td><td>8</td></tr> <tr> <td>ERG Code</td><td>5C</td></tr> </table> | ICAO/IATA Class | 5.1 | ICAO / IATA Subsidiary Hazard | 8 | ERG Code | 5C | | | | |
| ICAO/IATA Class | 5.1 | | | | | | | | | | |
| ICAO / IATA Subsidiary Hazard | 8 | | | | | | | | | | |
| ERG Code | 5C | | | | | | | | | | |
| 14.4. Packing group | II | | | | | | | | | | |
| 14.5. Environmental hazard | Not Applicable | | | | | | | | | | |
| 14.6. Special precautions for user | <table> <tr> <td>Special provisions</td><td>Not Applicable</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> </table> | Special provisions | Not Applicable | 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 |
| Special provisions | Not Applicable | | | | | | | | | | |
| 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 | | | | | | | | | | |

Continued...

Pola Rapid 38% Hydrogen Peroxide

| | | |
|--|---|-------|
| | Passenger and Cargo Limited Quantity Packing Instructions | Y540 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 0.5 L |

Sea transport (IMDG-Code / GGVSee)

| | | |
|------------------------------------|--|----------------|
| 14.1. UN number | 2014 | |
| 14.2. UN proper shipping name | HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary) | |
| 14.3. Transport hazard class(es) | IMDG Class | 5.1 |
| | IMDG Subsidiary Hazard | 8 |
| 14.4. Packing group | II | |
| 14.5. Environmental hazard | Not Applicable | |
| 14.6. Special precautions for user | EMS Number | F-H, S-Q |
| | Special provisions | Not Applicable |
| | Limited Quantities | 1 L |

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

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name | Group |
|-------------------|---------------|
| hydrogen peroxide | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------|---------------|
| hydrogen peroxide | Not Available |

If packed as Chemical kits the following classification may be considered if all ICAO/IATA transport requirements are met: Chemical Kit UN3316 - Class 9, SP A44 & A163.

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

hydrogen peroxide is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 10 / Appendix C

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (hydrogen peroxide) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | Yes |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | Yes |
| Vietnam - NCI | Yes |
| Russia - FBEPH | Yes |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

| | |
|---------------|------------|
| Revision Date | 26/05/2021 |
| Initial Date | 30/11/2020 |

Continued...

Pola Rapid 38% Hydrogen Peroxide**SDS Version Summary**

| Version | Date of Update | Sections Updated |
|---------|----------------|--|
| 3.1 | 26/05/2021 | Hazards identification - Classification, Transport information - Transport |

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by SDI Limited 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
- ▶ ES: Exposure Standard
- ▶ 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
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ AIIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European INventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers
- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory
- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

The information contained in the Safety Data Sheet is based on data considered to be accurate, however, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof.

Other information:

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