

Pola Office Liquid

SDI Limited

Version No: **5.1.1.1**Safety Data Sheet (Conforms to Regulations (EC) No 2015/830)

Issue Date: 29/01/2016 Print Date: 08/04/2016 Initial Date: Not Available L.REACH.IRL.EN

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

1.1.Product Identifier

Product name	Pola Office Liquid
Synonyms	Not Available
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)
Other means of identification	Not Available

1.2. 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.
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

Registered company name	SDI Limited	SDI Brazil Industria E Comercio Ltda	SDI Germany GmbH		
Address	3-15 Brunsdon Street VIC Bayswater 3153 Australia	Rua Dr. Virgilio de Carvalho Pinto, 612 São Paulo CEP 05415-020 Brazil	Hansestrasse 85 Cologne D-51149 Germany		
Telephone	+61 3 8727 7111 (Business Hours)	+55 11 3092 7100	+49 0 2203 9255 0		
Fax	+61 3 8727 7222	+55 11 3092 7101	+49 0 2203 9255 200		
Website	www.sdi.com.au	www.sdi.com.au	www.sdi.com.au		
Email	info@sdi.com.au	brasil@sdi.com.au	germany@sdi.com.au		
Registered company name	SDI (North America) Inc.				
Address	1279 Hamilton Parkway IL Itasca 60143 United States				
Telephone	+1 630 361 9200 (Business hours)				
Fax	Not Available				
Website	Not Available				
Email	USA.Canada@sdi.com.au				

1.4. Emergency telephone number

Association / Organisation	SDI Limited Not Available Not Available					
Emergency telephone numbers	+61 3 8727 7111	Not Available	Not Available			
Other emergency telephone numbers	ray.cahill@sdi.com.au Not Available Not Available					
Association / Organisation	Not Available					
Emergency telephone numbers	+61 3 8727 7111					
Other emergency telephone numbers	Not Available					

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Considered a dangerous mixture according to Directive 1999/45/EC, Reg. (EC) No 1272/2008 (if applicable) and their amendments. Classified as Dangerous Goods for transport purposes.

DSD classification In case of mixtures, classification has been prepared by following DPD (Directive 1999/45/EC) and CLP Regulation (EC) No 1272/2008 regulations

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DPD classification ^[1]	R37/38 Irritating to respiratory system and skin. R41 Risk of serious damage to eyes.			
Legend:	1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI			
Classification according to regulation (EC) No 1272/2008 [CLP] [1]	Oxidizing Liquid Category 2, Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)			
Legend:	1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI			

2.2. Label elements

CLP label elements







SIGNAL WORD

DANGER

Hazard statement(s)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

Supplementary statement(s)

Not Applicable

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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P220	Keep/Store away from clothing/organic material/combustible materials.
P234	Keep only in original container.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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 in accordance with local regulations.

2.3. Other hazards

Ingestion may produce health damage*.

REACh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1.CAS No	0/ 5 1 -1 -47	Manage	Classification according to	Ola - 10 - 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
I.CAS NO	%[weight]	Name	Classification according to	Classification according to regulation (EC) No 1272/2008 [CLP]

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2.EC No 3.Index No 4.REACH No			directive 67/548/EEC [DSD]	
1.7722-84-1 2.231-765-0 3.008-003-00-9 4.01-2119485845-22-XXXX	35	hydrogen peroxide	R5, R8, R20/22, R35 ^[2]	Oxidizing Liquid Category 1, Acute Toxicity (Inhalation) Category 4, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A; H271, H332, H302, H314 [3]
Legend:	1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L			

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

4.1. Description of first ald	a illeasures
General	If skin contact occurs: 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. If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or 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. If furmes or combustion products are inhaled remove from contaminated area. Seek medical attention. 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. Seek medical advice.
Eye Contact	If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or 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	If skin contact occurs: ► 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	 ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Seek medical attention.
Ingestion	 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. Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

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

5.1. Extinguishing media

FOR SMALL FIRE:

- ► USE FLOODING QUANTITIES OF WATER.
- ▶ DO NOT use dry chemical, CO2, foam or halogenated-type extinguishers.

FOR LARGE FIRE

Flood fire area with water from a protected position

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility

- ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous
- ▶ Reacts vigorously with alkali metals

5.3. Advice for firefighters

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ► May be violently or explosively reactive. Fire Fighting
 - ► Wear full body protective clothing with breathing apparatus.
 - ► Prevent, by any means available, spillage from entering drains or water courses.

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▶ 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. ${\color{red} \blacktriangleright} \ \ {\bf Equipment\ should\ be\ thoroughly\ decontaminated\ after\ use.}$ ► Will not burn but increases intensity of fire. May explode from friction, shock, heat or containment. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. Heat affected containers remain hazardous. Fire/Explosion Hazard 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. ► Combustion/decomposition may produce acrid/toxic fumes of carbon monoxide (CO). Combustion products include; carbon dioxide (CO2) other pyrolysis products typical of burning organic material sulfur oxides (SOx)

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

6.3. Methods and material for containment and cleaning up

Minor Spills	 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	 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.

6.4. Reference to other sections

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

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe h	andling
Safe handling	 Avoid all personal contact, including inhalation. Wear protective clothing when risk of overexposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid smoking, naked lights or ignition sources. Avoid smoking, naked lights or ignition sources. Avoid generation of static electricity. DO NOT use plastic buckets. Earth all lines and equipment. Use spark-free tools when handling. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
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Fire and explosion See section 5 protection Store between 2 and 8 deg C. Other information Do not store in direct sunlight. Store in a dry and well ventilated-area, away from heat and sunlight.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	► DO NOT repack. Use containers supplied by manufacturer only.
Storage incompatibility	► Avoid strong acids, bases.

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Ireland Occupational Exposure Limits	hydrogen peroxide	Hydrogen peroxide	1.5 mg/m3 / 1 ppm	3 mg/m3 / 2 ppm	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
hydrogen peroxide	Hydrogen peroxide - 30%	33 ppm	170 ppm	330 ppm

Ingredient	Original IDLH	Revised IDLH
hydrogen peroxide	75 ppm	75 [Unch] ppm

MATERIAL DATA

8.2. Exposure controls

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.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.

Employers may need to use multiple types of controls to prevent employee overexposure.

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.

An approved self contained breathing apparatus (SCBA) may be required in some situations.

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.

8.2.1. Appropriate engineering controls

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
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

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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. 8.2.2. Personal protection Safety glasses with side shields Chemical goggles 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 Eye and face protection 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]. [AS/NZS 1336 or national equivalent] Skin protection See Hand protection below Wear chemical protective gloves, e.g. PVC. Hands/feet protection ▶ Wear safety footwear or safety gumboots, e.g. Rubber **Body protection** See Other protection below Overalls. PVC Apron. Other protection ▶ PVC protective suit may be required if exposure severe. ► Eyewash unit. ▶ Ensure there is ready access to a safety shower. Thermal hazards Not Available

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 $chemicals,\ K=Ammonia(NH3),\ Hg=Mercury,\ NO=Oxides\ of\ nitrogen,\ MB=Methyl\ bromide,\ AX=Low\ boiling\ point\ organic\ compounds (below\ 65\ degC)$

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Clear, colourless liquid; mixes with water.		
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)	Not Available	Decomposition temperature	Not Available
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 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

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Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1.Reactivity	See section 7.2
10.2.Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable under normal handling conditions. Prolonged exposure to heat. Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

Inhaled	inhalation. In contrast to most organs, the lung is able to respor damage. The repair process, which initially evolved to protect mare sulting in the impairment of gas exchange, the primary function the recruitment and activation of many cell types, mainly derived Inhalation of quantities of liquid mist may be extremely hazardou pulmonary oedema. Inhalation of excessive levels of mist may result in headache, dipoisoning due to hydrogen peroxide inhalation may cause tremore.	nrial produces irritation of the respiratory system, in a substantial number of individuals, following nd to a chemical insult by first removing or neutralising the irritant and then repairing the ammalian lungs from foreign matter and antigens, may however, produce further lung damage on of the lungs. Respiratory tract irritation often results in an inflammatory response involving from the vascular system. Is, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and izziness, vomiting, diarrhoea, irritability, insomnia and in extreme pulmonary oedema. Systemic ris and numbness of the extremities, convulsions, pulmonary oedema, coma and shock. ations of the vapour or mist are likely to cause extreme irritation of the nose and chest, cough,
	discomfort, shortness of breath, and inflammation of the nose ar	
Ingestion	Accidental ingestion of the material may be damaging to the hea	alth of the individual.
Skin Contact	direct contact, and/or produces significant inflammation when at twenty-four hours or more after the end of the exposure period. S form of contact dermatitis (nonallergic). The dermatitis is often oblistering (vesiculation), scaling and thickening of the epidermis. (spongiosis) and intracellular oedema of the epidermis. The material may cause skin irritation after prolonged or repeate	ial either produces inflammation of the skin in a substantial number of individuals following oplied to the healthy intact skin of animals, for up to four hours, such inflammation being present Skin irritation may also be present after prolonged or repeated exposure; this may result in a characterised by skin redness (erythema) and swelling (oedema) which may progress to . At the microscopic level there may be intercellular oedema of the spongy layer of the skin ed exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often his. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and
Eye	When applied to the eye(s) of animals, the material produces se	evere ocular lesions which are present twenty-four hours or more after instillation.
Chronic	Limited evidence suggests that repeated or long-term occupatio Repeated or prolonged exposure to corrosives may result in the jaw. Bronchial irritation, with cough, and frequent attacks of bron	e of the airways involving difficult breathing and related systemic problems. and exposure may produce cumulative health effects involving organs or biochemical systems. crosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the inchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures
	may result in dermatitis and/or conjunctivitis.	
	may result in dermatitis and/or conjunctivitis.	IRRITATION
Pola Office Liquid		IRRITATION Not Available
	тохісіту	
	TOXICITY Not Available TOXICITY	Not Available
	TOXICITY Not Available	Not Available IRRITATION

extracted from RTECS - Register of Toxic Effect of chemical Substances

No significant acute toxicological data identified in literature search.

HYDROGEN PEROXIDE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, 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

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peroxide, target organs affected include the lungs, intestine, thymus, liver, and kidney, suggesting its distribution to those sites.

- 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+/-.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 *Aspergillis 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 leghom 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:

Hydrogen peroxide has been detected in breath.

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Acute Toxicity	0	Carcinogenicity	0
Skin Irritation/Corrosion	✓	Reproductivity	0
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	0
Respiratory or Skin sensitisation	0	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	0

Legend:

X – Data available but does not fill the criteria for classification

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Data required to make classification available

○ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source	
hydrogen peroxide	LC50	96	Fish	0.020mg/L	3	
hydrogen peroxide	EC50	3	Algae or other aquatic plants	0.27mg/L	4	
hydrogen peroxide	EC50	48	Crustacea	2.32mg/L	4	
hydrogen peroxide	EC50	72	Algae or other aquatic plants	0.71mg/L	4	
hydrogen peroxide	NOEC	192	Fish	0.028mg/L	4	
Legend:	Aquatic Toxicity Data (E	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - 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				

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
hydrogen peroxide	LOW (LogKOW = -1.571)

12.4. Mobility in soil

Ingredient	Mobility
hydrogen peroxide	LOW (KOC = 14.3)

12.5.Results of PBT and vPvB assessment

P B T

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Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- ▶ Reuse
- ▶ Recycling

Product / Packaging disposal

Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ **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.

Waste treatment options
Sewage disposal options

Not Available

Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required





Marine Pollutant N

Land transport (ADR)

. , ,		
14.1.UN number	2014	
14.2.Packing group	П	
14.3.UN proper shipping name	HYDROGEN PEROXIDE, AQUEC	DUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)
14.4.Environmental hazard	Not Applicable	
14.5. Transport hazard class(es)	Class 5.1 Subrisk 8	
	Hazard identification (Kemler)	58
	Classification code	0C1
14.6. Special precautions for user	Hazard Label	5.1+8
	Special provisions	Not Applicable
	Limited quantity	1L
	Ÿ.	

Air transport (ICAO-IATA / DGR)

	-				
14.1. UN number	2014				
14.2. Packing group	II .				
14.3. UN proper shipping name	Hydrogen peroxide, aqueous solution with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary)				
14.4. Environmental hazard	Not Applicable				
14.5. Transport hazard class(es)	ICAO/IATA Class 5.1 ICAO / IATA Subrisk 8 ERG Code 5C				
	Special provisions	Not Applicable			
14.6. Special precautions for	Cargo Only Packing Instructions	554			
user	Cargo Only Maximum Qty / Pack	5L			
	Passenger and Cargo Packing Instructions	550			

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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)

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

Inland waterways transport (ADN)

2014		
I		
HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)		
Not Applicable		
5.1 8		
Classification code OC1		
Special provisions Not Applic	able	
Limited quantity 1 L		
Equipment required PP, EP		
Fire cones number 0		
	Not Applicable 5.1 8 Classification code OC1 Special provisions Not Applic Limited quantity 1 L Equipment required PP, EP	

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

Not Applicable

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

SECTION 15 REGULATORY INFORMATION

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

HYDROGEN PEROXIDE(7722-84-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of

Dangerous Substances - updated by ATP: 31

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

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

Ireland Occupational Exposure Limits

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable -: 67/548/EEC, 1999/45/EC, 98/24/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments as well as the following British legislation: - The Control of Substances Hazardous to Health Regulations (COSHH) 2002 - COSHH Essentials - The Management of Health and Safety at Work Regulations 1999

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingredient	CAS number Index No ECHA Dossier					
hydrogen peroxide	7722-84-1 008-003-00-9		01-21	01-2119485845-22-XXXX		
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)			Pictograms Signal Word Code(s)	Hazard Statement Code(s)	
1	Ox. Liq. 1, Acute Tox. 4, Skin Corr. 1A		GHS07, GHS05, GHS03, Dgr	H271, H302, H314, H332		
2	Ox. Liq. 1, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1, STOT SE 3, Aquatic Chronic 3, Ox. Liq. 2, Acute Tox. 3, Flam. Liq. 2, Skin Corr. 1B, Acute Tox. 2, Met. Corr. 1, Aquatic Chronic 2, Not Classified, Skin Irrit. 2, Eye Irrit. 2		GHS05, GHS03, Dgr, GHS02, GHS06, GHS09, Wng	H271, H314, H335, H318, H225, H301, H330, H290		

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Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (hydrogen peroxide)
China - IECSC	Υ
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Υ
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Υ
USA - TSCA	Υ
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

Full text Risk and Hazard codes

H225	Highly flammable liquid and vapour.
H271	May cause fire or explosion; strong oxidiser.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
R20/22	Harmful by inhalation and if swallowed.
R35	Causes severe burns.
R5	Heating may cause an explosion.
R8	Contact with combustible material may cause fire.

Other information

DSD / DPD label elements



Relevant risk statements are found in section 2.1

Indication(s) of danger	Xi	
SAFETY ADVICE		
S02	Keep out of reach of children.	
S23	Do not breathe gas/fumes/vapour/spray.	
S26	In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.	
S35	This material and its container must be disposed of in a safe way.	
S37	Wear suitable gloves.	
S39	Wear eye/face protection.	
S40	To clean the floor and all objects contaminated by this material, use water.	
S46	If swallowed, seek medical advice immediately and show this container or label.	
S56	Dispose of this material and its container at hazardous or special waste collection point.	
S64	If swallowed, rinse mouth with water (only if the person is conscious).	

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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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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

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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