

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

076372007

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

076372056 272455012

**MATERIAL SAFETY DATA SHEET**

Product: POLA OFFICE +  
Date / Revised: 16.10.2012

Page 1 of 5

Revision: 4

**1. Substance / Preparation and Company name**

Product Name: Pola Office +

Recommended use: To remove discoloration of teeth, to be performed by a dentist.

**Manufacturer / Supplier**

SDI Limited  
3-13 Brunsdon Street, Bayswater  
Victoria, 3153, Australia

**Telephone:**

+61 3 8727 7111 (Business hours)

Southern Dental Industries Ltd  
Block 8, St Johns Court  
Swords Road  
Santry, Dublin 9, Ireland

**Telephone:**

+353 1 886 9577 (Business Hours)

SDI Inc.  
729 N.Route 83, Suite 315  
Bensenville 60106 IL, USA

**Telephone:**

630 238 8300 (Business hours)

SDI Brasil Indústria e Comércio Ltda  
Rua Dr. Virgílio de Carvalho Pinto, 612  
Pinheiros, São Paulo, 05415-020  
Brasil

**Telephone:**

+ 55 11 3092 7100 (Business Hours)

**Emergency contact number:** +61 3 8727 7111**2. Composition / Information on ingredients**

<u>Composition:</u>	<u>CAS No.</u>	<u>Wt. % w/w</u>
<b>Pola Office +</b>		
Hydrogen peroxide	7722-84-1	30.0 - 37.5
Sodium hydroxide	1310-73-2	< 0.5

**3. Hazard Identification****Pola Office +** causes irritation / damage to skin, eyes and mucous membrane.**HAZARDOUS; DANGEROUS****Hazard classification** according to GHS:

**Skin Corrosion / Irritation 2**  
**Serious Eye Damage/Irritation 1**  
**DANGER**

Hazard phrase(s) –	<b>H315</b> <b>H318</b> <b>H302</b>	Causes skin irritation Causes serious eye damage Harmful if swallowed
Precautionary phrase(s) –	<b>P264</b> <b>P280</b> <b>P302 + P352</b>	Wash hands thoroughly after handling Wear protective gloves/protective clothing/eye protection /face protection. IF ON SKIN: Wash with plenty of soap and water



## MATERIAL SAFETY DATA SHEET

Product: POLA OFFICE +

Date / Revised: 16.10.2012

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### 3. Hazard Identification (Cont'd.)

**P332 + P313**  
**P362**  
**P305+P351+P338**

If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P301+P330+P331**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**P310**

Immediately call a POISON CENTER or doctor/physician.

### 4. First Aid Measures

Eye (contact): Immediately flush open eyes with running water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek urgent medical attention. Make sure the patient's, dentist's and auxiliary's eyes are protected.

Skin (contact): Remove contaminated clothing. If skin or hair contact occurs, wash skin and hair with running water. Skin may appear temporarily bleached white. Seek medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting, immediately drink lots of water/milk. Seek urgent medical attention.

### 5. Fire Fighting Measures

Suitable extinguishing media: Water spray.

Unusual Fire and Explosion Hazards: Strong oxidiser. Contact with other substances may cause fire. Container explosion may occur under fire conditions.

Special protective equipment: Wear approved respirator and protective gear. Use spray to cool containers.

Flammability: Non flammable.

### 6. Accidental Release Measures

Personal precautions: Do not get into eyes, on skin or clothing.

Environmental precautions: Prevent any spillage from entering waterways, drains or sewage system. Use protective eyewear and latex gloves when handling.

Methods for cleaning up: Clean up with damp rag. Rinse rag thoroughly with water.

### 7. Handling and storage

#### Handling

Extreme care required when handling the Hydrogen Peroxide mixture. Wear protective clothing - gloves / face/ eye protection.



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**7. Handling and storage (Cont'd.)**Storage

Storage by the end user (Dental Clinic) is recommended to be at temperatures between 2° - 8°C (35° - 45°F) and should be kept away from direct sunlight.

Distribution

During distribution, to our customers, this product can be transported in non-refrigerated conditions between 15° to 25° C. This product can also withstand temperatures up to 40° C for short periods (2 to 3 days) and intermittent peaks up to 50°C.

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**8. Exposure controls / personal protection**

Respiratory protection:	Not required under normal conditions of use.
Hand protection:	Chemical resistant gloves.
Eye protection:	Safety glasses, goggles or face shield.
General safety and hygiene measures:	Safety shower and eye bath. Wash thoroughly after handling. Wash contaminated clothing before re-use. Follow good housekeeping practices and good industrial hygiene in handling this material.

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**9. Physical and chemical properties****Pola Office +**

Appearance:	Clear, blue gel
Odour:	Not applicable
Boiling point:	Not established
Melting point:	Not established
Specific gravity:	Not established
Flash point:	Not applicable
Flammable:	Not flammable
Autoflammability:	Does not self ignite
Explosive properties:	Does not present an explosion hazard
Oxidising properties:	Strong oxidiser
Vapour pressure (@ 20°C):	Not established
Solubility:	Soluble in water

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## 10. Stability and Reactivity

Stability:	Hydrogen Peroxide Liquid is easily decomposed.
Conditions to avoid:	Heat, moisture and light.
Materials to avoid:	Metals, strong bases and acids, organic solvents, combustibles.
Hazardous decomposition products:	Hydrogen Peroxide Liquid decomposes to oxygen and water.
Hazardous reactivity (polymerization):	Will not occur.

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## 11. Toxicological information

Acute toxicity:	Harmful by ingestion.
Skin (contact):	Irritating / corrosive to skin.
Eye (contact)	Damaging to eyes.
Ingestion:	Harmful

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## 12. Ecological information

Self assessment:	<b>Pola Office +</b> - Biodegradable.
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## 13. Disposal considerations

Dispose of in accordance with local official regulations. Wash containers out with water prior to disposal.

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## 14. Transport information

Hydrogen peroxide, aqueous solution UN2014 Packing Group II Class 5.1 sub-risk Class 8.

If packed in Chemical kits the following classification may be considered if all ICAO/IATA transport requirements are met:

Chemical Kit UN3316 - Class 9.

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## 15. Regulatory information

Classified according to the Australian SUSMP - *Standard for the Uniform Scheduling of Medicines and Poisons*, as follows: Schedule 6 - POISON

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**MATERIAL SAFETY DATA SHEET****Product:** POLA OFFICE +  
**Date / Revised:** 16.10.2012**Page 5 of 5****Revision: 4**

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**16. Other information**

For professional use only. Use as directed.

The information provided herein is given in good faith, but no warranty expressed or implied is made.

**Prepared by:** SDI Limited3-13 Brunsdon Street, Bayswater  
Victoria, 3153, Australia**Phone Number:**

+61 3 8727 7111

**Department issuing MSDS:** Research and Development**Contact:** Operations Director

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**MATERIAL SAFETY DATA SHEET****Product: POLA OFFICE****Date / Revised 16.10.2012****Page 1 of 5****Revision: 5****1. Substance / Preparation and Company name**

Product Name: Pola Office

Recommended use: To remove discoloration of teeth, to be performed by a dentist.

**Manufacturer / Supplier**SDI Limited  
3-13 Brunston Street, Bayswater  
Victoria, 3153, AustraliaSDI Inc.  
729 N.Route 83, Suite 315  
Bensenville 60106 IL, USA**Telephone:**

+61 3 8727 7111 (Business hours)

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630 238 8300 (Business hours)

Southern Dental Industries Ltd  
Block 8, St Johns Court  
Swords Road  
Santry, Dublin 9, IrelandSDI Brasil Indústria e Comércio Ltda  
Rua Dr. Virgílio de Carvalho Pinto, 612  
Pinheiros, São Paulo, 05415-020  
Brasil**Telephone:**

+353 1 886 9577 (Business Hours)

**Telephone:**

+ 55 11 3092 7100 (Business Hours)

**Emergency contact number:** +61 3 8727 7111**2. Composition / Information on ingredients**

<u>Composition:</u>	<u>CAS No.</u>	<u>Wt. % w/w</u>
<b>Pola Office Liquid</b>		
Hydrogen peroxide (35%)	7722-84-1	35.0
<b>Pola Office Powder</b>		
Silicone dioxide powder	7631-86-9	73.3
Catalysts (Proprietary)		26.2

**3. Hazard Identification**

Classified as: HAZARDOUS; DANGEROUS.

**Pola Office Liquid** is corrosive and causes irritation/damage to skin, eye and mucous membrane.

Hazard Classification according to GHS:

**Skin Corrosion/Irritation Category 2****Serious Eye Damage/Irritation Category 1****DANGER**

Hazard phrase(s) –	<b>H315</b> <b>H318</b> <b>H302</b>	Causes skin irritation Causes serious eye damage Harmful if swallowed
Precautionary phrase(s) –	<b>P264</b> <b>P280</b>	Wash skin thoroughly after handling Wear protective gloves and eye protection/face protection.



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**3. Hazard Identification (Cont'd.)**

Precautionary phrase(s) –	<b>P302+P352</b>	IF ON SKIN OR HAIR: Wash with plenty of soap and water.
	<b>P332+P313</b>	If skin irritation occurs: Get medical advice/attention.
	<b>P362</b>	Take off contaminated clothing and wash before reuse.
	<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	<b>P331</b>	If swallowed, do NOT induce vomiting.
	<b>P310</b>	Immediately call a POISON CENTER or doctor/physician.

**Pola Office Powder** is hazardous. It is fluffy and easily airborne. Limit disturbance of the powder pot and avoid inhalation of any airborne dust.

Hazard Classification according to GHS:

**Specific Target Organ Toxicity Category 3;**

**Serious Eye Damage/Irritation Category 2A**

**WARNING**

Hazard phrase(s) -	<b>H335</b> <b>H319</b>	May cause respiratory irritation Causes serious eye irritation
Precautionary phrase(S) -	<b>P261</b> <b>P280</b> <b>P271</b> <b>P304+P340</b>  <b>P312</b>  <b>P305+P351+P338</b>  <b>P337+P313</b> <b>P403+P233</b>  <b>P405</b> <b>P501</b>	Avoid breathing dust Wear eye/face protection Use only outdoors or in a well-ventilated area IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice / attention. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local regulations.

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**4. First Aid Measures**

Eye (contact):	Immediately flush open eyes with running water for at least 15 minutes. Seek immediate medical attention. Make sure the patients, dentists and auxiliary's eyes are protected.
Skin (contact):	Remove contaminated clothing. Wash skin with plenty of water. Skin may appear temporarily bleached white.
Ingestion:	Do NOT induce vomiting, immediately drink lots of water/milk. Seek immediate medical attention.
Inhalation:	Remove to fresh air. If not breathing, give Artificial respiration. If breathing is difficult, seek immediate medical advice.

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## 5. Fire Fighting Measures

Suitable extinguishing media:	Water spray.
Unusual Fire and Explosion Hazards:	Strong oxidiser. Contact with other substances may cause fire. Container explosion may occur under fire conditions.
Special protective equipment:	Wear approved respiratory and protective gear. Use spray to cool containers.
Flammability:	Non flammable.

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## 6. Accidental Release Measures

Personal precautions:	Do not get into eyes, on skin or clothing.
Environmental precautions:	Prevent any spillage from entering waterways, drains or sewage system. Use protective eyewear and latex gloves when handling.
Methods for cleaning up:	Clean up with damp rag. Rinse thoroughly with water.

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## 7. Handling and storage

### Handling

Extreme care required when handling the Hydrogen Peroxide Liquid. Container may be under pressure. Remove cap with caution. Replace caps immediately after use. Care when handling the Pola Office Powder to avoid disturbance, as the powder is easily airborne - avoid inhalation and contact with eyes.

### Storage

Storage by the end user (Dental Clinic) is recommended to be at temperatures between 2° - 8°C (35° - 45°F) and should be kept away from direct sunlight.

### Distribution

During distribution, to our customers, this product can be transported in non-refrigerated conditions between 15° to 25° C. This product can also withstand temperatures up to 40° C for short periods (2 to 3 days) and intermittent peaks up to 50°C.

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## 8. Exposure controls / personal protection

Respiratory protection:	Not required under normal conditions of use.
Hand protection:	Chemical resistant gloves.
Eye protection:	Safety glasses, goggles or face shield.
General safety and hygiene measures:	Safety shower and eye bath. Wash thoroughly after handling. Wash contaminated clothing before re-use.
	Follow good housekeeping practices and good industrial hygiene in handling this material.

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**MATERIAL SAFETY DATA SHEET****Product: POLA OFFICE****Date / Revised: 16.10.2012****Page 4 of 5****Revision: 5**

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**9. Physical and chemical properties**

	<b>Pola Office Liquid</b>	<b>Pola Office Powder</b>
Appearance:	Clear, colourless liquid	Fluffy white speckled powder
Odour:	Not applicable	Not applicable
Boiling point:	126°C	Not applicable
Melting point:	-40°C	Not established
Specific gravity:	1.11	Not established
Flash point:	Not applicable	Not applicable
Flammable:	Not flammable	Not flammable
Autoflammability:	Does not self ignite	Does not self ignite
Explosive properties:	Does not present an explosion hazard	Does not present an explosion hazard
Oxidising properties:	Strong oxidiser	Strong oxidiser
Vapour pressure (@ 20°C):	23.3 mm Hg	Not volatile
	<b>Pola Office Liquid</b>	<b>Pola Office Powder</b>
Solubility:	Soluble in water	Not soluble in water

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**10. Stability and Reactivity**

Stability:	Hydrogen Peroxide Liquid is easily decomposed. Powder is stable.
Conditions to avoid:	Heat and moisture.
Materials to avoid:	Metals, strong bases and acids, organic solvents, combustibles.
Hazardous decomposition products:	Hydrogen Peroxide Liquid decomposes to oxygen and water. Powder decomposes to sulfur oxides, oxygen, carbon monoxide, carbon dioxide.
Hazardous reactivity (polymerization):	Will not occur.

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**MATERIAL SAFETY DATA SHEET****Product: POLA OFFICE****Date / Revised: 16.10.2012****Page 5 of 5****Revision: 5**

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**11. Toxicological information**

Acute toxicity:	Harmful by inhalation and ingestion.
Skin (contact):	May be irritating
Eye (contact)	Damaging to eyes.
Ingestion:	Harmful
Inhalation:	May be harmful and irritating to respiratory system.

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**12. Ecological information**

Self assessment:       **Pola Office Liquid** - Biodegradable.  
                                  **Pola Office Powder** - Data not yet available.

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**13. Disposal considerations**

Dispose of in accordance with local official regulations. Wash containers out with water prior to disposal.

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**14. Transport information**

Hydrogen peroxide, aqueous solution UN2014 Packing Group II Class 5.1 subsidiary-risk Class 8.

If packed in Chemical kits the following classification may be considered if all ICAO/IATA transport requirements are met:

Chemical Kit UN3316 - Class 9.

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**15. Regulatory information**

Classified according to the Australian SUSMP - *Standard for the Uniform Scheduling of Medicines and Poisons*, as follows: Schedule 6 - POISON

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**16. Other information**

For professional use only. Use as directed.

The information provided herein is given in good faith, but no warranty expressed or implied is made.

<b>Prepared by:</b>	SDI Limited 3-13 Brunsdon Street, Bayswater Victoria, 3153, Australia	<b>Phone Number:</b> +61 3 8727 7111
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**Department issuing MSDS:** Research and Development  
**Contact:** Operations Director

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## Pola Office +

### SDI Limited

Version No: 5.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 29/01/2016

Print Date: 24/03/2016

Initial Date: Not Available

L.GHS.USA.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

Product name	Pola Office +
Synonyms	Not Available
Proper shipping name	Hydrogen, peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary) Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)
Other means of identification	Not Available

### Recommended use of the chemical and restrictions on use

Relevant identified uses	To remove discoloration of teeth, to be performed by a dentist.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	SDI Limited	SDI Brazil Industria E Comercio Ltda	SDI Germany GmbH
Address	3-15 Brunston 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

### Emergency phone 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 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture


NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

<b>Classification</b>	Oxidizing Liquid Category 2, Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)
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**Label elements**

<b>GHS label elements</b>	
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<b>SIGNAL WORD</b>	<b>DANGER</b>
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**Hazard statement(s)**

<b>H272</b>	May intensify fire; oxidiser.
<b>H290</b>	May be corrosive to metals.
<b>H302</b>	Harmful if swallowed.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H335</b>	May cause respiratory irritation.

**Hazard(s) not otherwise specified**

Not Applicable

**Precautionary statement(s) Prevention**

<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
<b>P221</b>	Take any precaution to avoid mixing with combustibles/organic material.
<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P220</b>	Keep/Store away from clothing/organic material/combustible materials.
<b>P234</b>	Keep only in original container.
<b>P270</b>	Do not eat, drink or smoke when using this product.

**Precautionary statement(s) Response**

<b>P301+P330+P331</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P310</b>	Immediately call a POISON CENTER or doctor/physician.
<b>P370+P378</b>	In case of fire: Use alcohol resistant foam or fine spray/water fog for extinction.
<b>P363</b>	Wash contaminated clothing before reuse.
<b>P390</b>	Absorb spillage to prevent material damage.
<b>P301+P312</b>	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
<b>P304+P340</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Precautionary statement(s) Storage**

<b>P405</b>	Store locked up.
<b>P403+P233</b>	Store in a well-ventilated place. Keep container tightly closed.

**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
7722-84-1	30-37.5	<u>hydrogen peroxide</u>
1310-73-2	<0.5	<u>sodium hydroxide</u>

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

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

#### Most important symptoms and effects, both acute and delayed

See Section 11

#### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5 FIRE-FIGHTING 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

<b>Fire Incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid storage with reducing agents.</li> <li>▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous</li> </ul>
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#### Special protective equipment and precautions for fire-fighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Fight fire from a safe distance, with adequate cover.</li> <li>▶ Extinguishers should be used only by trained personnel.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ If fire gets out of control withdraw personnel and warn against entry.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Will not burn but increases intensity of fire.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ Heat affected containers remain hazardous.</li> <li>▶ Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition.</li> <li>▶ May emit irritating, poisonous or corrosive fumes.</li> </ul>

### SECTION 6 ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ No smoking, naked lights, ignition sources.</li> <li>▶ Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.</li> <li>▶ Avoid breathing dust or vapours and all contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with dry sand, earth, inert material or vermiculite.</li> <li>▶ <b>DO NOT use sawdust as fire may result.</b></li> <li>▶ Scoop up solid residues and seal in labelled drums for disposal.</li> <li>▶ Neutralise/decontaminate area.</li> </ul>
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Major Spills	<ul style="list-style-type: none"> <li>Clear area of personnel and move upwind.</li> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>May be violently or explosively reactive.</li> <li>Wear full body protective clothing with breathing apparatus.</li> <li>Prevent, by any means available, spillage from entering drains or water course.</li> <li>Consider evacuation (or protect in place).</li> <li>No smoking, flames or ignition sources.</li> <li>Increase ventilation.</li> <li>Contain spill with sand, earth or other clean, inert materials.</li> <li><b>NEVER</b> use organic absorbents such as sawdust, paper, cloth; as fire may result.</li> <li>Avoid any contamination by organic matter.</li> <li>Use spark-free and explosion-proof equipment.</li> <li>Collect any recoverable product into labelled containers for possible recycling.</li> <li><b>DO NOT mix fresh with recovered material.</b></li> <li>Collect residues and seal in labelled drums for disposal.</li> <li>Wash area and prevent runoff into drains.</li> <li>Decontaminate equipment and launder all protective clothing before storage and re-use.</li> <li>If contamination of drains or waterways occurs advise emergency services.</li> </ul>
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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"> <li>Avoid personal contact and inhalation of dust, mist or vapours.</li> <li>Provide adequate ventilation.</li> <li>Always wear protective equipment and wash off any spillage from clothing.</li> <li>Keep material away from light, heat, flammables or combustibles.</li> <li>Keep cool, dry and away from incompatible materials.</li> <li>Avoid physical damage to containers.</li> <li><b>DO NOT</b> repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use.</li> <li>Use only minimum quantity required.</li> <li>Avoid using solutions of peroxides in volatile solvents. Solvent evaporation should be controlled to avoid dangerous concentration of the peroxide.</li> <li>Do NOT allow peroxides to contact iron or compounds of iron, cobalt, or copper, metal oxide salts, acids or bases.</li> <li>Do NOT use metal spatulas to handle peroxides</li> <li>Do NOT use glass containers with screw cap lids or glass stoppers.</li> <li>Store peroxides at the lowest possible temperature, consistent with their solubility and freezing point.</li> <li>CAUTION: Do NOT store liquids or solutions of peroxides at a temperature below that at which the peroxide freezes or precipitates. Peroxides in this form are extremely shock and heat-sensitive. Refrigerated storage of peroxides must ONLY be in explosion-proof units.</li> <li>The hazards and consequences of fires and explosions during synthesis and use of peroxides 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,</li> <li>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.</li> <li>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,</li> <li>Peroxides should be added slowly and cautiously to the reaction medium. This should be completed prior to heating and with good agitation.</li> <li>Addition of peroxide to the hot monomer is extremely dangerous. A violent reaction (e.g., fire or explosion) can result from inadvertent mixing of promoters (frequently used with peroxides in polymerisation systems) with full-strength peroxide</li> <li>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.</li> <li>When handling <b>NEVER</b> smoke, eat or drink.</li> <li>Always wash hands with soap and water after handling.</li> <li>Use only good occupational work practice.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
Other information	<p><b>Do not</b> 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"> <li><b>DO NOT repack.</b> Use containers supplied by manufacturer only.</li> </ul>
Storage incompatibility	<ul style="list-style-type: none"> <li>Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous</li> <li>Avoid storage with reducing agents.</li> <li>Avoid strong acids, bases.</li> </ul>

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	hydrogen peroxide	Hydrogen peroxide	1.4 mg/m3 / 1 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	hydrogen peroxide	Hydrogen peroxide	1 ppm	Not Available	Not Available	TLV® Basis: Eye, URT, & skin irr

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US NIOSH Recommended Exposure Limits (RELs)	hydrogen peroxide	High-strength hydrogen peroxide, Hydrogen dioxide, Hydrogen peroxide (aqueous), Hydroperoxide, Peroxide	1.4 mg/m3 / 1 ppm	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z1	sodium hydroxide	Sodium hydroxide	2 mg/m3	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	sodium hydroxide	Sodium hydroxide	Not Available	Not Available	2 mg/m3	TLV® Basis: URT, eye, & skin irr
US NIOSH Recommended Exposure Limits (RELs)	sodium hydroxide	Caustic soda, Lye, Soda lye, Sodium hydrate	Not Available	Not Available	2 mg/m3	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
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
hydrogen peroxide	75 ppm	75 [Unch] ppm
sodium hydroxide	250 mg/m3	10 mg/m3

## MATERIAL DATA

## Exposure controls

Appropriate engineering 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.										
	<table><tr><td>Type of Contaminant:</td><td>Air Speed:</td></tr><tr><td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td><td>0.25-0.5 m/s (50-100 f/min.)</td></tr><tr><td>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)</td><td>0.5-1 m/s (100-200 f/min.)</td></tr><tr><td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td><td>1-2.5 m/s (200-500 f/min.)</td></tr><tr><td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td><td>2.5-10 m/s (500-2000 f/min.)</td></tr></table>	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.)
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Within each range the appropriate value depends on:											
<table><tr><td>Lower end of the range</td><td>Upper end of the range</td></tr><tr><td>1: Room air currents minimal or favourable to capture</td><td>1: Disturbing room air currents</td></tr><tr><td>2: Contaminants of low toxicity or of nuisance value only.</td><td>2: Contaminants of high toxicity</td></tr><tr><td>3: Intermittent, low production.</td><td>3: High production, heavy use</td></tr><tr><td>4: Large hood or large air mass in motion</td><td>4: Small hood-local control only</td></tr></table>	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	
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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.											
Personal protection											
Eye and face protection	<ul style="list-style-type: none"><li>▶ Chemical goggles.</li><li>▶ Full face shield may be required for supplementary but never for primary protection of eyes.</li><li>▶ 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], [AS/NZS 1336 or national equivalent]</li></ul>										
Skin protection	See Hand protection below										



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<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>Wear chemical protective gloves, e.g. PVC.</li> <li>Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>Overalls.</li> <li>PVC Apron.</li> <li>PVC protective suit may be required if exposure severe.</li> <li>Eyewash unit.</li> <li>Ensure there is ready access to a safety shower.</li> </ul>
<b>Thermal hazards</b>	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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), 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**

<b>Appearance</b>	Clear blue gel, mixes with water.		
<b>Physical state</b>	Gel	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	6.5-8	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

**SECTION 10 STABILITY AND REACTIVITY**

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

**SECTION 11 TOXICOLOGICAL INFORMATION****Information on toxicological effects**

<b>Inhaled</b>	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following
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	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. 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.										
<b>Ingestion</b>	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.										
<b>Skin Contact</b>	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. The material may accentuate any pre-existing dermatitis condition Skin contact will result in rapid drying, bleaching, leading to chemical burns on prolonged contact Open cuts, abraded or irritated skin should not be exposed to this material 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.										
<b>Eye</b>	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.										
<b>Chronic</b>	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.										
<b>Pola Office +</b>	<table> <tr> <th>TOXICITY</th><th>IRRITATION</th></tr> <tr> <td>Not Available</td><td>Not Available</td></tr> </table>	TOXICITY	IRRITATION	Not Available	Not Available						
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<b>hydrogen peroxide</b>	<table> <tr> <th>TOXICITY</th><th>IRRITATION</th></tr> <tr> <td>dermal (rat) LD50: 3000-5480 mg/kg<sup>[1]</sup></td><td>Nil reported</td></tr> <tr> <td>Inhalation (rat) LC50: 2 mg/L/4H<sup>[2]</sup></td><td></td></tr> <tr> <td>Oral (rat) LD50: 75 mg/kg<sup>[1]</sup></td><td></td></tr> </table>	TOXICITY	IRRITATION	dermal (rat) LD50: 3000-5480 mg/kg <sup>[1]</sup>	Nil reported	Inhalation (rat) LC50: 2 mg/L/4H <sup>[2]</sup>		Oral (rat) LD50: 75 mg/kg <sup>[1]</sup>			
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<b>sodium hydroxide</b>	<table> <tr> <th>TOXICITY</th><th>IRRITATION</th></tr> <tr> <td>Oral (rabbit) LD50: 325 mg/kg<sup>[1]</sup></td><td>Eye (rabbit): 0.05 mg/24h SEVERE</td></tr> <tr> <td></td><td>Eye (rabbit): 1 mg/24h SEVERE</td></tr> <tr> <td></td><td>Eye (rabbit): 1 mg/30s rinsed-SEVERE</td></tr> <tr> <td></td><td>Skin (rabbit): 500 mg/24h SEVERE</td></tr> </table>	TOXICITY	IRRITATION	Oral (rabbit) LD50: 325 mg/kg <sup>[1]</sup>	Eye (rabbit): 0.05 mg/24h SEVERE		Eye (rabbit): 1 mg/24h SEVERE		Eye (rabbit): 1 mg/30s rinsed-SEVERE		Skin (rabbit): 500 mg/24h SEVERE
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<b>Legend:</b>	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										

<b>HYDROGEN PEROXIDE</b>	<p>No significant acute toxicological data identified in literature search.</p> <p>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.</p> <p>For hydrogen peroxide: Hazard increases with peroxide concentration, high concentrations contain an additive stabiliser.</p> <p><b>Pharmacokinetics</b> 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.</p> <ul style="list-style-type: none"> <li>Absorption: Hydrogen peroxide is decomposed in the bowel before absorption. When applied to tissue, solutions of hydrogen peroxide have poor penetrability.</li> <li>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 O<sub>2</sub> followed by dismutation to hydrogen peroxide.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul> <p><b>Carcinogenicity</b> 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.</p> <p><b>Genotoxicity</b> Hydrogen peroxide induced DNA damage, sister chromatid exchanges and chromosomal aberrations in mammalian cells <i>in vitro</i>. Hydrogen peroxide induced DNA damage in bacteria (<i>E. coli</i>), and was mutagenic to bacteria (<i>Salmonella typhimurium</i>) and the fungi, <i>Neurospora crassa</i> and <i>Aspergillus chevallieri</i>, but not to <i>Streptomyces griseoflavus</i>. It was not mutagenic to <i>Drosophila melanogaster</i> or to mammalian cells <i>in vitro</i>.</p> <p><b>Developmental Toxicity</b> 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</p>
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Continued...

	<p>litters when mated with untreated males.</p> <p>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.</p> <p>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.</p> <p><b>Reproductive Toxicity</b></p> <p>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.</p> <p>The substance is classified by IARC as Group 3:</p> <p><b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>
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<b>SODIUM HYDROXIDE</b>	<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 produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.</p> <p>Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.</p> <p>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.</p>
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<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	⊖
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	⊖
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	⊖
<b>Respiratory or Skin sensitisation</b>	⊖	<b>STOT - Repeated Exposure</b>	⊖
<b>Mutagenicity</b>	⊖	<b>Aspiration Hazard</b>	⊖

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

## SECTION 12 ECOLOGICAL INFORMATION

### 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
sodium hydroxide	EC50	384	Crustacea	27901.643mg/L	3
sodium hydroxide	EC50	96	Algae or other aquatic plants	1034.10043mg/L	3
sodium hydroxide	LC50	96	Fish	4.16158mg/L	3
sodium hydroxide	NOEC	96	Fish	56mg/L	4
sodium hydroxide	EC50	48	Crustacea	40.4mg/L	2

**Legend:**

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.

### Persistence and degradability

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

### Bioaccumulative potential

Ingredient	Bioaccumulation
hydrogen peroxide	LOW (LogKOW = -1.571)
sodium hydroxide	LOW (LogKOW = -3.8796)

### Mobility in soil

Ingredient	Mobility
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hydrogen peroxide	LOW (KOC = 14.3)
sodium hydroxide	LOW (KOC = 14.3)


## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> </ul>
	Consult State Land Waste Management Authority for disposal. Bury residue in an authorised landfill.

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

	 
Marine Pollutant	NO

### Land transport (DOT)

UN number	2014				
Packing group	II				
UN proper shipping name	Hydrogen, peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary); Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)				
Environmental hazard	Not Applicable				
Transport hazard class(es)	<table> <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				
Special precautions for user	<table> <tr> <td>Hazard Label</td><td>5.1, 8</td></tr> <tr> <td>Special provisions</td><td>12, A60, B53, B80, B81, B85, IB2, IP5, T7, TP2, TP6, TP24, TP37; A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37</td></tr> </table>	Hazard Label	5.1, 8	Special provisions	12, A60, B53, B80, B81, B85, IB2, IP5, T7, TP2, TP6, TP24, TP37; A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37
Hazard Label	5.1, 8				
Special provisions	12, A60, B53, B80, B81, B85, IB2, IP5, T7, TP2, TP6, TP24, TP37; A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37				

### Air transport (ICAO-IATA / DGR)

UN number	2014														
Packing group	II														
UN proper shipping name	Hydrogen peroxide, aqueous solution with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary)														
Environmental hazard	Not Applicable														
Transport hazard class(es)	<table> <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														
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> <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	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	Passenger and Cargo Limited Quantity Packing Instructions	Y540	Passenger and Cargo Limited Maximum Qty / Pack	0.5 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														
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	2014				
Packing group	II				
UN proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)				
Environmental hazard	Not Applicable				
Transport hazard class(es)	<table> <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				
Special precautions for user	<table> <tr> <td>EMS Number</td><td>F-H, S-Q</td></tr> <tr> <td>Special provisions</td><td>Not Applicable</td></tr> </table>	EMS Number	F-H, S-Q	Special provisions	Not Applicable
EMS Number	F-H, S-Q				
Special provisions	Not Applicable				

Limited Quantities | 1 L

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

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Hawaii Air Contaminant Limits	US ACGIH Threshold Limit Values (TLV)
US - Idaho - Limits for Air Contaminants	US ACGIH Threshold Limit Values (TLV) - Carcinogens
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Mutagens	US SARA Section 302 Extremely Hazardous Substances
US - Oregon Permissible Exposure Limits (Z-1)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	

**SODIUM HYDROXIDE(1310-73-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US - Alaska Limits for Air Contaminants	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Washington Permissible exposure limits of air contaminants
US - Hawaii Air Contaminant Limits	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - Idaho - Limits for Air Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Michigan Exposure Limits for Air Contaminants	US ACGIH Threshold Limit Values (TLV)
US - Minnesota Permissible Exposure Limits (PELs)	US NIOSH Recommended Exposure Limits (RELs)
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**Federal Regulations****Superfund Amendments and Reauthorization Act of 1986 (SARA)****SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	YES
Delayed (chronic) health hazard	NO
Fire hazard	YES
Pressure hazard	NO
Reactivity hazard	NO

**US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)**

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Sodium hydroxide	1000	454

**State Regulations****US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (hydrogen peroxide; sodium hydroxide)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	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

#### Ingredients with multiple cas numbers

Name	CAS No
sodium hydroxide	12200-64-5, 1310-73-2

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  
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.

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