



# Milton® Anti-bacterial solution

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

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

### 1.1. Product identifier

Product name: Milton® Anti-bacterial solution

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Disinfection of nursery accessories (feeding bottles, teats, ...) by immersion.

Disinfection of surfaces (floor, working surfaces, ...) in domestic and healthcare sectors by wet wiping.

For professional and general public.

### 1.3. Details of the supplier of the safety data sheet

Registered company name: Milton Australia Pty Ltd

Address: 1/575 Darling Street, Rozelle NSW 2039 Australia

Phone: +61 3 8586 0500

Fax.: +61 3 8586 0505

E-mail: info@nicepack.com.au

http://www.miltonbaby.com.au

### 1.4. Emergency telephone number

Country	Phone number	Website
Australia	1800 506 750	-
New Zealand	0800 555 895	-

## SECTION 2 – HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

<b>Poisons Schedule</b>	Not Applicable
<b>Classification</b>	Corrosive to Metals Category 1, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Hazardous to the Aquatic Environment Acute Hazard Category 3

Warning! Do not use together with other products. May release dangerous gases (chlorine).

### 2.2. Label elements

Hazard pictograms:



Signal word: WARNING

Hazard statements:

<b>AUH031</b>	Contact with acid liberates toxic gas.
<b>H290</b>	May be corrosive to metals.
<b>H315</b>	Causes skin irritation.
<b>H319</b>	Causes serious eye irritation.
<b>H402</b>	Harmful to aquatic life.

Precautionary statements – Prevention:

<b>P234</b>	Keep only in original container.
<b>P273</b>	Avoid release to the environment.
<b>P280</b>	Wear protective gloves, protective clothing, eye protection and face protection.
<b>P264</b>	Wash all exposed external body areas thoroughly after handling.

Precautionary statements – Response:

<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.
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<b>P337+P313</b>	If eye irritation persists: Get medical advice/attention.
<b>P390</b>	Absorb spillage to prevent material damage.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water.
<b>P332+P313</b>	If skin irritation occurs: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.

Precautionary statements – Storage:

Not Applicable.

Precautionary statements – Disposal:

<b>P501</b>	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**2.3. Other hazards**

Warning! Do not use together with other products. May release dangerous gases (chlorine).

**SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS****3.1. Substances**

Not applicable (mixture).

**3.2. Mixtures**Composition:

CAS No.	% [weigh]	Name
7681-52-9	2 %**	Sodium Hypochlorite

\*\*Corresponds to 1.90% w/w active chlorine released from sodium hypochlorite

**SECTION 4 – FIRST AID MEASURES**

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing if the victim is unconscious.

**4.1. Description of first aid measures**

<b>Eye Contact</b>	<p><u>If this product comes in contact with the eyes:</u></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><u>If skin contact occurs:</u></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>- Prosthesis 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>- Immediately give a glass of water.</li> <li>- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> <li>- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

**SECTION 5 – FIREFIGHTING MEASURES****5.1. Extinguishing media**

<b>Suitable methods of extinction</b>	<p>In the event of a fire, use:</p> <ul style="list-style-type: none"> <li>- foam.</li> <li>- dry chemical powder.</li> <li>- BCF (where regulations permit).</li> </ul>
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	<ul style="list-style-type: none"> <li>- carbon dioxide (CO<sub>2</sub>).</li> <li>- Water spray or fog – Large fires only.</li> </ul>
<b>5.2. Special hazards arising from the substance or mixture</b>	
<b>Fire Incompatibility</b>	None known.
<b>5.3. Advice for firefighters</b>	
<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>- Alert Fire Brigade and tell them location and nature of hazard.</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>- Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>- Avoid spraying water onto liquid pools.</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> </ul>
<b>Fire / Explosion Hazard</b>	<ul style="list-style-type: none"> <li>- Combustible.</li> <li>- Slight fire hazard when exposed to heat or flame.</li> <li>- Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>- On combustion, may emit irritating/ toxic fumes.</li> <li>- May emit acrid smoke.</li> <li>- Mists containing combustible materials may be explosive.</li> <li>- May emit poisonous fumes.</li> <li>- May emit corrosive fumes.</li> </ul>
<b>HAZCHEM</b>	2X

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

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

See section 8.

### 6.2. Environmental precautions

See section 12.

### 6.3. Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>- Remove all ignition sources.</li> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapours and contact with skin and eyes.</li> <li>- Control personal contact with the substance, by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>- Wipe up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <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>- Wear breathing apparatus plus protective gloves.</li> <li>- Prevent, by any means available, spillage from entering drains or water course.</li> <li>- No smoking, naked lights or ignition sources.</li> <li>- Increase ventilation.</li> <li>- Stop leak if safe to do so.</li> <li>- Contain spill with sand, earth or vermiculite.</li> <li>- Collect recoverable product into labelled containers for recycling.</li> <li>- Absorb remaining product with sand, earth or vermiculite.</li> <li>- Collect solid residues and seal in labelled drums for disposal.</li> <li>- Wash area and prevent runoff into drains.</li> <li>- If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

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

## SECTION 7 – HANDLING AND STORAGE

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>- <b>DO NOT allow clothing wet with material to stay in contact with skin.</b></li> <li>- Avoid all personal contact, including inhalation.</li> <li>- Wear protective clothing when risk of exposure occurs.</li> <li>- Use in a well-ventilated area.</li> <li>- Prevent concentration in hollows and sumps.</li> <li>- <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>- Avoid smoking, naked lights or ignition sources.</li> <li>- Avoid contact with incompatible materials.</li> <li>- When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>- Keep containers securely sealed when not in use.</li> <li>- Avoid physical damage to containers.</li> <li>- Always wash hands with soap and water after handling.</li> <li>- Work clothes should be laundered separately.</li> <li>- Use good occupational work practice.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
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	- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
<b>Other information</b>	<ul style="list-style-type: none"> <li>- Store in original containers.</li> <li>- Keep containers securely sealed.</li> <li>- No smoking, naked lights or ignition sources.</li> <li>- Store in a cool, dry, well-ventilated area.</li> <li>- Store away from incompatible materials and foodstuff containers.</li> <li>- Protect containers against physical damage and check regularly for leaks.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

## 7.2. Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Metal can or drum.</li> <li>- Packaging as recommended by manufacturer.</li> <li>- Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	- Contact with acids produces toxic fumes.

## SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

Occupational Exposure Limits (OEL)

### INGREDIENT DATA

Not Available.

### Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Sodium Hypochlorite	13 mg/m <sup>3</sup>	140 mg/m <sup>3</sup>	290 mg/m <sup>3</sup>
Sodium Hypochlorite	2 mg/m <sup>3</sup>	290 mg/m <sup>3</sup>	1,800 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
Sodium Hypochlorite	Not Available	Not Available

### Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Sodium Hypochlorite	C	> 0.1 to ≤ milligrams per cubic meter of air (mg/m <sup>3</sup> )
<b>Notes:</b>	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

### 8.2. Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.</p> <p>An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> <p>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.</p>								
	<table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <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> </tbody> </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.)
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	<p>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.)</p> <p>Within each range the appropriate value depends on:</p> <table border="1" data-bbox="496 226 1461 387"> <thead> <tr> <th data-bbox="496 226 1038 253">Lower end of the range</th> <th data-bbox="1043 226 1461 253">Upper end of the range</th> </tr> </thead> <tbody> <tr> <td data-bbox="496 259 1038 286">1: Room air currents minimal or favourable to capture</td> <td data-bbox="1043 259 1461 286">1: Disturbing room air currents</td> </tr> <tr> <td data-bbox="496 293 1038 320">2: Contaminants of low toxicity or of nuisance value only.</td> <td data-bbox="1043 293 1461 320">2: Contaminants of high toxicity</td> </tr> <tr> <td data-bbox="496 327 1038 353">3: Intermittent, low production.</td> <td data-bbox="1043 327 1461 353">3: High production, heavy use</td> </tr> <tr> <td data-bbox="496 360 1038 387">4: Large hood or large air mass in motion</td> <td data-bbox="1043 360 1461 387">4: Small hood-local control only</td> </tr> </tbody> </table> <p>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.</p>	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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<p><b>Personal Protection</b></p>											
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>- Safety glasses with side shields.</li> <li>- Chemical goggles.</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>										
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>										
<p><b>Hands / feet protection</b></p>	<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> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>- frequency and duration of contact,</li> <li>- chemical resistance of glove material,</li> <li>- glove thickness and</li> <li>- dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>- Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>- Excellent when breakthrough time &gt; 480 min</li> <li>- Good when breakthrough time &gt; 20 min</li> <li>- Fair when breakthrough time &lt; 20 min</li> <li>- Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove</p>										

	<p>model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p>
<b>Body protection</b>	See Other protection below.
<b>Other protection</b>	<ul style="list-style-type: none"> <li>- Overalls.</li> <li>- P.V.C apron.</li> <li>- Barrier cream.</li> <li>- Skin cleansing cream.</li> <li>- Eye wash unit.</li> </ul>

Recommended material(s)	Respiratory protection																																										
<p><b>GLOVE SELECTION INDEX</b> Glove selection is based on a modified presentation of the: <b>"Forsberg Clothing Performance Index"</b>. The effect(s) of the following substance(s) are taken into account in the <b>computer-generated</b> selection: Milton Anti-bacterial solution</p> <table border="1"> <thead> <tr> <th>Material</th> <th>CPI</th> </tr> </thead> <tbody> <tr> <td>NATURAL RUBBER</td> <td>A</td> </tr> <tr> <td>NATURAL+NEOPRENE</td> <td>A</td> </tr> <tr> <td>NEOPRENE</td> <td>A</td> </tr> <tr> <td>NITRILE</td> <td>A</td> </tr> <tr> <td>NITRILE+PVC</td> <td>A</td> </tr> <tr> <td>PVC</td> <td>A</td> </tr> </tbody> </table> <p>*CPI – Clothing Performance Index A: Best Selection B: Satisfactory; may degrade after 4 hours continuous immersion C: Poor to Dangerous Choice for other than short term immersion NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. - *Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.</p>	Material	CPI	NATURAL RUBBER	A	NATURAL+NEOPRENE	A	NEOPRENE	A	NITRILE	A	NITRILE+PVC	A	PVC	A	<p>Type B-P Filter of sufficient capacity. (AS/NZS 1716 &amp; 1715, EN 143:2000 &amp; 149:2001, ANSI Z88 or national equivalent)</p> <p>Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.</p> <table border="1"> <thead> <tr> <th>Required minimum protection factor</th> <th>Maximum gas/vapour concentration present in air / p.p.m. (by volume)</th> <th>Half-face Respirator</th> <th>Full-Face Respirator</th> </tr> </thead> <tbody> <tr> <td>up to 10</td> <td>1000</td> <td>B-AUS / Class1 P2</td> <td>-</td> </tr> <tr> <td>up to 50</td> <td>1000</td> <td>-</td> <td>B-AUS / Class 1 P2</td> </tr> <tr> <td>up to 50</td> <td>5000</td> <td>Airline *</td> <td>-</td> </tr> <tr> <td>up to 100</td> <td>5000</td> <td>-</td> <td>B-2 P2</td> </tr> <tr> <td>up to 100</td> <td>10000</td> <td>-</td> <td>B-3 P2</td> </tr> <tr> <td>100+</td> <td></td> <td></td> <td>Airline**</td> </tr> </tbody> </table> <p>* - Continuous Flow ** - Continuous-flow or positive pressure demand 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)</p>	Required minimum protection factor	Maximum gas/vapour concentration present in air / p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator	up to 10	1000	B-AUS / Class1 P2	-	up to 50	1000	-	B-AUS / Class 1 P2	up to 50	5000	Airline *	-	up to 100	5000	-	B-2 P2	up to 100	10000	-	B-3 P2	100+			Airline**
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## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Appearance	Slightly yellow liquid with chlorinated odour.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.130 to 1.150
<b>Odour</b>	Chlorine odour	<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>	11.8 at 21°C	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	1.73 at 20°C 1.22 at 40°C
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	~ 110	<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

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	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

## SECTION 10 – STABILITY AND REACTIVITY

### 10.1. Reactivity

See section 7.

### 10.2. Chemical stability

Unstable in the presence of incompatible materials.

Product is considered stable.

Hazardous polymerisation will not occur.

### 10.3. Possibility of hazardous reactions

See section 7.

### 10.4. Conditions to avoid

See section 7.

### 10.5. Incompatible materials

See section 7.

### 10.6. Hazardous decomposition products

See section 5.

## SECTION 11 – TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

Inhaled	<p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Chlorine vapour is extremely irritating to the airways and lungs, causing coughing, choking, breathing difficulty, chest pain, headache, vomiting, fluid accumulation in the lungs, chest infection and loss of consciousness. Effects may be delayed. Long term exposure (at workplace) may lead to corrosion of the teeth, irritate the linings of the nose and may increase the likelihood of developing tuberculosis. Recent studies have not confirmed these findings. Very low concentrations may irritate the eyes, nose and throat and cause the above reactions.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.</p>
Ingestion	<p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p>
Skin Contact	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material.</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
Eye	<p>If applied to the eyes, this material causes severe eye damage.</p>
Chronic	<p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Reduced breathing capacity may result from chronic low level exposure to chlorine gas. Chronic poisoning may result in cough, severe chest pains, sore throat and blood in the phlegm. Moderate to severe exposures over 3 years produced decreased lung capacity in a number of workers.</p> <p>Delayed effects can include shortness of breath, violent headaches, lung swelling and pneumonia.</p> <p>Chloralkali workers exposed over many years showed fatigue, and a modest increase in anxiety and dizziness. There may be an increase in white blood cell and decrease in red blood cell count.</p>

Milton Anti-bacterial solution	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Sodium Hypochlorite	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >10000 mg/kg <sup>[1]</sup>	Eye (rabbit): 10 mg – moderate
	Inhalation (rat) LC50: >2.625 mg/l4h <sup>[1]</sup>	Eye (rabbit): 100 mg – moderate
	Oral (mouse) LD50: 5800 mg/kg <sup>[2]</sup>	Skin (rabbit): 500 mg/24h – moderate

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

<b>SODIUM HYPOCHLORITE</b>	<p>As sodium hypochlorite pentahydrate asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>Hypochlorite salts are classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>Hypochlorite salts are extremely corrosive and can cause severe damage to the eyes and skin. A number of skin cancers have been observed in mice, when applied to their skin.</p>
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Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation / Corrosion	✓	Reproductivity	✗
Serious Eye Damage / Irritation	✓	STOT – Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT – Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ Data either not available or does not fill the criteria for classification. ✓ Data available to make classification.

## SECTION 12 – ECOLOGICAL INFORMATION

### 12.1. Toxicity

Milton Anti-bacterial solution	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	Not Available	Not Available	Not Available	Not Available	Not Available
Sodium Hypochlorite	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	NOEC(ECx)	72h	Algae or other aquatic plants	0.005mg/l	1
	EC50	96h	Algae or other aquatic plants	~0.1~0.4mg/l	1
	EC50	72h	Algae or other aquatic plants	0.018mg/l	1
	LC50	96h	Fish	>0.023<0.052mg/l	2
	EC50	48h	Crustacea	0.01mg/l	2

Legend: 1. Europe ECHA Registered Substances – Ecotoxicological Information – Aquatic Toxicity. 2. US EPA, Ecotox database – Aquatic Toxicity Data.

**DO NOT discharge into sewer or waterways.**  
Harmful to aquatic organisms.

### 12.2. Persistence and degradability

<b>Ingredient</b>	<b>Persistence: Water/Soil</b>	<b>Persistence: Air</b>
	No Data available for all ingredients	No Data available for all ingredients



**12.3. Bioaccumulative potential**

Ingredient	Bioaccumulation
	No Data available for all ingredients


**12.4. Mobility in soil**

Ingredient	Bioaccumulation
	No Data available for all ingredients

**SECTION 13 – DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>- Containers may still present a chemical hazard / danger when empty.</li> <li>- Return to supplier for reuse / recycling if possible.</li> <li>Otherwise: <ul style="list-style-type: none"> <li>- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>- Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> <li>- <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></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. Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible or consult manufacturer for recycling options.</li> <li>- Consult State Land Waste Management Authority for disposal.</li> <li>- Bury residue in an authorised landfill.</li> <li>- Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul> </li> </ul>
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**SECTION 14 – TRANSPORT INFORMATION****14.1 Labels Required**

	
<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	2X

**14.2 Land transport (ADG)**

<b>UN number</b>	1791
<b>UN proper shipping name</b>	HYPOCHLORITE SOLUTION
<b>Transport hazard class(es)</b>	Class: 8 Subrisk: Not Applicable
<b>Packing groupe</b>	III
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	Special provisions: 223 Limited quantity: 5 L

**14.3 Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	1791
<b>UN proper shipping name</b>	Hypochlorite solution
<b>Transport hazard class(es)</b>	ICAO/IATA Class: 8 ICAO/IATA Subrisk: Not Applicable ERG Code: 8L
<b>Packing group</b>	III
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	Special provisions: A3 A803 Cargo Only Packing Instructions: 856 Cargo Only Maximum Qty / Pack: 60 L Passenger and Cargo Packing Instructions: 852 Passenger and Cargo Maximum Qty / Pack: 5 L

Passenger and Cargo Limited Quantity Packing Instructions: Y841  
Passenger and Cargo Limited Maximum Qty / Pack: 1 L

#### 14.4 Sea transport (IMDG-Code / GGVSee)

<b>UN number</b>	1791
<b>UN proper shipping name</b>	HYPOCHLORITE SOLUTION
<b>Transport hazard class(es)</b>	IMDG Class: 8 IMDG Subrisk: Not Applicable
<b>Packing group</b>	III
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	EMS Number: F-A, S-B Special provisions: 223 274 900 Limited Quantities: 5 L

#### 14.5 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not Applicable.

#### 14.6 Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
sodium hypochlorite	Not Available

#### 14.7 Transport in bulk in accordance with the IGC Code

Product name	Ship Type
sodium hypochlorite	Not Available

## SECTION 15 – REGULATORY INFORMATION

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

<b>Sodium Hypochlorite is found on the following regulatory lists</b>	Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6 Australian Inventory of Industrial Chemicals (AIIC) International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
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#### 15.2. National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (sodium hypochlorite)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:** Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 – OTHER INFORMATION

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

<b>PC-TWA</b>	Permissible Concentration-Time Weighted Average
<b>PC-STEL</b>	Permissible Concentration-Short Term Exposure Limit
<b>ARC</b>	International Agency for Research on Cancer
<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
<b>STEL</b>	Short Term Exposure Limit
<b>TEEL</b>	Temporary Emergency Exposure Limit
<b>IDLH</b>	Immediately Dangerous to Life or Health Concentrations
<b>ES</b>	Exposure Standard
<b>OSF</b>	Odour Safety Factor
<b>NOAEL</b>	No Observed Adverse Effect Level
<b>LOAEL</b>	Lowest Observed Adverse Effect Level
<b>TLV</b>	Threshold Limit Value
<b>LOD</b>	Limit of Detection
<b>OTV</b>	Odour Threshold Value
<b>BCF</b>	BioConcentration Factors
<b>BEI</b>	Biological Exposure Index
<b>AIIC</b>	Australian Inventory of Industrial Chemicals
<b>DSL</b>	Domestic Substances List
<b>NDSL</b>	Non-Domestic Substances List
<b>IECSC</b>	Inventory of Existing Chemical Substance in China
<b>EINECS</b>	European INventory of Existing Commercial Chemical Substances
<b>ELINCS</b>	European List of Notified Chemical Substances
<b>NLP</b>	No-Longer Polymers
<b>ENCS</b>	Existing and New Chemical Substances Inventory
<b>KECI</b>	Korea Existing Chemicals Inventory
<b>NZIoC</b>	New Zealand Inventory of Chemicals
<b>PICCS</b>	Philippine Inventory of Chemicals and Chemical Substances
<b>TSCA</b>	Toxic Substances Control Act
<b>TCSI</b>	Taiwan Chemical Substance Inventory
<b>INSQ</b>	Inventario Nacional de Sustancias Químicas
<b>NCI</b>	National Chemical Inventory
<b>FBEPH</b>	Russian Register of Potentially Hazardous Chemical and Biological Substances