

## YAP252, YPM252 - CALCICOL No. 2 TABLETS

### YSI Inc.

Part Number: YAP252, YPM252  
Version No: 1.1  
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Initial Date: **10/06/2018**  
Revision Date: **10/05/2018**  
Print Date: **03/16/2026**  
S.GHS.USA.EN

## SECTION 1 Identification

### Product Identifier

Product name	YAP252, YPM252 - CALCICOL No. 2 TABLETS
Chemical Name	Not Applicable
Synonyms	YAP252, YPM252
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Testing Water
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	YSI Inc.	GFS Chemicals, Inc.
Address	1700/1725 Brannum Ln Yellow Springs OH 45387 United States	PO Box 245 Powell OH 43065 United States
Telephone	(937) 767-7241	740-881-5501 800-858-9682
Fax	Not Available	740-881-5989
Website	<a href="http://www.ysi.com">www.ysi.com</a>	<a href="http://www.gfschemicals.com">www.gfschemicals.com</a>
Email	MSDSinfo@ysi.com	service@gfschemicals.com

### Emergency phone number

Association / Organisation	CHEMTREC	ChemTrec
Emergency telephone number(s)	(800) 424-9300	800-424-9300
Other emergency telephone number(s)	011 703-527-3887	Not Available

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.**


### 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 and White = Special (Oxidizer or water reactive substances)

Classification	Skin Corrosion/Irritation Category 1A, Serious Eye Damage/Eye Irritation Category 1
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### Label elements

Hazard pictogram(s)	
Signal word	<b>Danger</b>

**Hazard statement(s)**

H314	Causes severe skin burns and eye damage.
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**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

P260	Do not breathe dust/fume.
P264	Wash all exposed external body areas thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

**Precautionary statement(s) Response**

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P363	Wash contaminated clothing before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Precautionary statement(s) Storage**

P405	Store locked up.
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**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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No further product hazard information.

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
10043-35-3	<5.5	boric acid
1310-66-3	<5.5	lithium hydroxide

**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 or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</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.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ If swallowed do <b>NOT</b> induce vomiting.</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>▶ Transport to hospital or doctor without delay.</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.

Clinical effects of lithium intoxication appear to relate to duration of exposure as well as to level.

Continued...

- ▶ Lithium produces a generalised slowing of the electroencephalogram; the anion gap may increase in severe cases.
- ▶ Emesis (or lavage if the patient is obtunded or convulsing) is indicated for ingestions exceeding 40 mg (Li)/Kg.
- ▶ Overdose may delay absorption; decontamination measures may be more effective several hours after cathartics.
- ▶ Charcoal is not useful. No clinical data are available to guide the administration of cathartics.
- ▶ Haemodialysis significantly increases lithium clearance; indications for haemodialysis include patients with serum levels above 4 meq/L.
- ▶ There are no antidotes.

[Ellenhorn and Barceloux: Medical Toxicology]

The material may induce methaemoglobinemia following exposure.

- ▶ Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.
- ▶ Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- ▶ Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.
- ▶ Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance.

#### BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comment
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

## SECTION 5 Fire-fighting measures

### Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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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>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding 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>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn. May emit corrosive fumes.</li> </ul>

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing dust and contact with skin and eyes.</li> <li>▶ Wear protective clothing, gloves, safety glasses and dust respirator.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Sweep up, shovel up or</li> <li>▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Place spilled material in clean, dry, sealable, labelled container.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. <b>IF WET:</b> Vacuum/shovel up and place in labelled containers for disposal.</li> <li>▶ <b>ALWAYS:</b> Wash area down with large amounts of water 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

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid skin 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>▶ <b>DO NOT</b> allow material to come in direct contact with human skin or eyes.</li> <li>▶ <b>DO NOT</b> allow material to come in contact with exposed food or food contact surfaces.</li> </ul>
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	<ul style="list-style-type: none"> <li>▶ Suitable PPE must be worn at all times.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, 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. Launder contaminated clothing before re-use.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</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> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul>

**Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p>Boric acid:</p> <ul style="list-style-type: none"> <li>▶ is a weak acid</li> <li>▶ is incompatible with alkali carbonates, hydroxides (forming borate salts), strong reducing agents and alkali metals</li> <li>▶ reacts violently with potassium metal</li> <li>▶ forms heat-sensitive explosive compound on contact with acetic anhydride</li> </ul> <p>None known</p>

**SECTION 8 Exposure controls / personal protection**

**Control parameters**

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Not Available


**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
boric acid	6 mg/m3	23 mg/m3	830 mg/m3
lithium hydroxide	0.091 mg/m3	1 mg/m3	42 mg/m3
lithium hydroxide	0.16 mg/m3	1.8 mg/m3	74 mg/m3

Ingredient	Original IDLH	Revised IDLH
boric acid	Not Available	Not Available
lithium hydroxide	Not Available	Not Available

**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. 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> <ul style="list-style-type: none"> <li>▶ Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.</li> <li>▶ If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.</li> </ul> <p>Such protection might consist of:</p> <p>(a): particle dust respirators, if necessary, combined with an absorption cartridge;</p> <p>(b): filter respirators with absorption cartridge or canister of the right type;</p> <p>(c): fresh-air hoods or masks.</p> <p>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" style="width: 100%;"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <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> </tbody> </table>	Type of Contaminant:	Air Speed:	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.)	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
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	<p>3: Intermittent, low production.</p> <p>4: Large hood or large air mass in motion</p> <p>3: High production, heavy use</p> <p>4: Small hood-local control only</p> <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 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres 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>
Individual protection measures, such as personal protective equipment	
Eye and face protection	<ul style="list-style-type: none"> <li>▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> <li>▶ Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.</li> <li>▶ Alternatively a gas mask may replace splash goggles and face shields.</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].</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> <li>▶ Elbow length PVC gloves</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.</p> <p>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 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> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> <li>▶ fluorocautchouc.</li> <li>▶ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p>
Body protection	See Other protection below
Other protection	<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)****GLOVE SELECTION INDEX**

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

**Respiratory protection**

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

Continued...

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

YAP252, YPM252 - CALCICOL No. 2 TABLETS

Material	CPI
BUTYL	A
NEOPRENE	A
NITRILE	A
VITON	A

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

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

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

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

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

· The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

· Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

· Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

· Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

· Use approved positive flow mask if significant quantities of dust becomes airborne.

· Try to avoid creating dust conditions.

#### Ansell Glove Selection

Glove — In order of recommendation
AlphaTec® 15-554
AlphaTec® Solvex® 37-185
AlphaTec® 38-612
AlphaTec® 58-008
AlphaTec® 58-530B
AlphaTec® 58-530W
AlphaTec® 58-735
AlphaTec® 79-700
AlphaTec® Solvex® 37-675
DermaShield™ 73-711

The suggested gloves for use should be confirmed with the glove supplier.

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

Appearance	White		
Physical state	Divided Solid Powder	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Heat of Combustion (kJ/g)	Not Available	Ignition Distance (cm)	Not Available
Flame Height (cm)	Not Available	Flame Duration (s)	Not Available
Enclosed Space Ignition Time Equivalent (s/m <sup>3</sup> )	Not Available	Enclosed Space Ignition Deflagration Density (g/m <sup>3</sup> )	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

## SECTION 10 Stability and reactivity

Reactivity	See section 7
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<b>Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<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>a) Acute Toxicity</b>	Based on available data, the classification criteria are not met.
<b>b) Skin Irritation/Corrosion</b>	There is sufficient evidence to classify this material as skin corrosive or irritating.
<b>c) Serious Eye Damage/Irritation</b>	There is sufficient evidence to classify this material as eye damaging or irritating
<b>d) Respiratory or Skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>e) Mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>f) Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>g) Reproductivity</b>	Based on available data, the classification criteria are not met.
<b>h) STOT - Single Exposure</b>	Based on available data, the classification criteria are not met.
<b>i) STOT - Repeated Exposure</b>	Based on available data, the classification criteria are not met.
<b>j) Aspiration Hazard</b>	Based on available data, the classification criteria are not met.

<b>Inhaled</b>	<p>Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by inhalation" nor has it been designated as "irritating to the respiratory system". This is because of the lack of corroborating animal or human evidence.</p> <p>Borates may act as simple airway irritants. Dryness of the mouth, nose or throat, dry cough, nose bleeds, sore throat, productive cough, shortness of breath, chest tightness and difficulty breathing were related to higher dose long term exposures.</p>
<b>Ingestion</b>	<p>Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow.</p> <p>The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).</p> <p>Symptoms include cyanosis (a bluish discoloration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.</p> <p>At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal.</p> <p>Lithium, in large doses, can cause dizziness and weakness. If a low salt diet is in place, kidney damage can result.</p> <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> <p>Ingestion or skin absorption of boric acid causes nausea, abdominal pain, diarrhoea and profuse vomiting which may be blood stained, headache, weakness, reddened lesions on the skin. In severe cases, it may cause shock, with fall in blood pressure, increase in heart rate, blue skin colour, brain and nervous irritation, reduced urine volume or even absence of urine.</p> <p>Borate poisoning causes nausea, vomiting, diarrhoea and pain in the upper abdomen. Often persistent vomiting occurs, and there may be blood in the faeces.</p>
<b>Skin Contact</b>	<p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Boric acid is not absorbed via intact skin but absorbed on broken or inflamed skin.</p>
<b>Eye</b>	<p>If applied to the eyes, this material causes severe eye damage.</p> <p>Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.</p>
<b>Chronic</b>	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.</p> <p>Lithium compounds can affect the nervous system and muscle. This can cause tremor, inco-ordination, spastic jerks and very brisk reflexes. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.</p> <p>Chronic boric acid poisoning is characterized by mild gastrointestinal irritation, loss of appetite, disturbed digestion, nausea, possibly vomiting and a hard irregular and discoloured rash. Dryness of skin, reddening of tongue, loss of hair, inflammation of conjunctiva, and kidney injury have also been reported.</p> <p>Borate can accumulate in the testes and deplete germ cells and cause withering of the testicles, according to animal testing. Hair loss, skin inflammation, stomach ulcer and anaemia can all occur.</p>

YAP252, YPM252 - CALCICOL No. 2 TABLETS	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
boric acid	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation (Rat) LC50: >2.12 mg/l4h <sup>[1]</sup>	Skin (Human): 15mg/3D (intermittent) - Mild
	Oral (Rat) LD50: >2600 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>

lithium hydroxide	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: 0.96 mg/L4h <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 210 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (corrosive) <sup>[1]</sup>

**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

YAP252, YPM252 - CALCICOL No. 2 TABLETS	<p>Goitrogenic: Goitrogens are substances that suppress the function of the thyroid gland by interfering with iodine uptake, which can, as a result, cause an enlargement of the thyroid (a goitre). Goitrogens include:</p> <ul style="list-style-type: none"> <li>- Vitexin, a flavonoid, which inhibits thyroid peroxidase, contributing to goitre</li> <li>- Thiocyanate and perchlorate, which decrease iodide uptake by competitive inhibition and consequently increase release of TSH from the pituitary gland</li> <li>- Lithium, which inhibits thyroid hormone release</li> <li>- Certain foods, such as soy and millet (containing vitexins) and vegetables in the genus Brassica (which includes broccoli, Brussels sprouts, cabbage, cauliflower and horseradish).</li> <li>- Caffeine (found in coffee, tea, cola and chocolate), which acts on thyroid function as a suppressant.</li> </ul>
LITHIUM HYDROXIDE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
YAP252, YPM252 - CALCICOL No. 2 TABLETS & LITHIUM HYDROXIDE	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.
BORIC ACID & LITHIUM HYDROXIDE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

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

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

## SECTION 12 Ecological information

### Toxicity

YAP252, YPM252 - CALCICOL No. 2 TABLETS	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
boric acid	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	672h	Fish	<3.2	7
	EC50	72h	Algae or other aquatic plants	40.2mg/l	2
	EC50	48h	Crustacea	230mg/L	5
	NOEC(ECx)	576h	Fish	0.001mg/L	5
	EC50	96h	Algae or other aquatic plants	15.4mg/l	2
lithium hydroxide	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	19.1mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	0.31mg/l	2
	LC50	96h	Fish	62.2mg/l	2
	EC50	72h	Algae or other aquatic plants	1.88mg/l	2

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

for Boron and Borates:

Environmental Fate - Boron is generally found in nature bound to oxygen and is never found as the free element. As an element, boron itself cannot be degraded in the environment, however; it may undergo various reactions that change the form of boron (e.g., precipitation, polymerization, and acid-base reactions) depending on conditions such as its concentration in water and pH. As boron is a natural component of the environment, individuals will have some exposure from foods and drinking water.

Atmospheric Fate: Atmospheric boron may be in the form of particulate matter or aerosols as borides, boron oxides, borates, borates, organoboron compounds, trihalide boron compounds, or borazines. Boron and borates will probably be removed from the atmosphere by precipitation and dry deposition. The half-life of airborne particles is usually on the order of days, depending on the size of the particle and atmospheric conditions.

Continued...

**Aquatic Fate:** Borates are relatively soluble in water. Boron readily hydrolyses in water and, in concentrated solutions, may polymerize. The mineral content of water is not likely to control the fate of boron in water. Boron was found to not be significantly removed during the conventional treatment of waste water. Boron may, however, be co-precipitated with aluminium, silicon, or iron to form hydroxyborate compounds on the surfaces of minerals. Waterborne boron may be adsorbed by soils and sediments. Adsorption-desorption reactions are expected to be the only significant mechanism that will influence the fate of boron in water.

**Terrestrial Fate: Soil** - Boron is added to farmland as a soil improving agent, but there is not sufficient data to evaluate its effect on soil organisms. The extent of boron adsorption depends on the pH of the water and the chemical composition of the soil. The greatest adsorption is generally observed at pH 7.5-9.0. The single most important property of soil that will influence the mobility of boron is the abundance of amorphous aluminium oxide. The extent of boron adsorption has also been attributed to the levels of iron oxide, and to a lesser extent, the organic matter present in the soil, although other studies found that the amount of organic matter present was not important. The adsorption of boron may not be reversible in some soils. Most boron compounds are transformed to borates in soil due to the presence of moisture. Borates themselves are not further degraded in soil, however; borates can exist in a variety of forms in soil. Borates are removed from soils by water leaching and by assimilation by plants. Surface soil, unpolluted waterways and seawater all typically contain significant amounts of boron as borate. **Plants** - Boron is an essential micronutrient for healthy growth of plants, however, it can be harmful to boron sensitive plants in higher quantities. In some areas such as the American Southwest, boron occurs naturally in surface waters in concentrations that have been shown to be toxic to commercially important plants.

**Ecotoxicity:** It is unlikely that boron is bioconcentrated significantly by organisms from water. Boron is not expected to bioaccumulate and bioconcentration factors for fish, plants and invertebrates are low. Boron is not regarded to be dangerous to aquatic organisms. In aquatic environments low concentrations of borates generally promote the growth of algae, whereas higher concentrations inhibited algal growth. Boron has little effect on freshwater algae and water fleas. The toxicity of boron in fish is often higher in soft water than in hard water. Zebra fish and rainbow trout are the most sensitive species to the effects of boron.

**For lithium (Anion):**

**Environmental Fate:** Lithium hypochlorite is an algaecide, disinfectant, fungicide and food

contact surface sanitizer. Its primary use is as a pesticide to control algae, bacteria and mildew in swimming pool water systems, hot tubs and spas. Lithium is an element that occurs naturally at low levels in food and drinking water. Compounds of lithium that would most likely enter freshwater environments are from mining, refining, and fabrication. Fluorides and carbonates of lithium appear to be the most probable environmental contaminants.

**Atmospheric Fate:** Lithium will react with oxygen to form lithium chloride and nitrogen, to form lithium nitride. Freshly cut surfaces will tarnish in the presence of the substance in the air.

**Terrestrial Fate: Soil** Lithium is found naturally in the Earth's crust and this content is estimated to be from 20 to 70 ppm, by weight. However, the concentration of lithium in soil varies significantly depending on geographic location and soil type.

**Terrestrial Fate: Plants** - Lithium is not a dietary mineral for plants but it does stimulate plant growth. It is readily absorbed by plants, causing plants to be an indicator of soil lithium concentrations.

**Aquatic Fate:** Lithium hypochlorite, like all the hypochlorite salts, forms hypochlorous acid when dissolved in water; it is hypochlorous acid that exhibits actual pesticide activity. Pieces of lithium metal react slowly with water to liberate hydrogen, a flammable gas, but the reaction does not generate enough heat to cause spontaneous ignition. Powdered lithium may react explosively with water.

**Ecotoxicity:** Lithium can have toxic effects on the reproductive systems of experimental animals and increasing consumption may result in adverse effects on health and environment. Lithium has significant biological availability only when administered as a partially soluble salt, such as lithium carbonate. Lithium hypochlorite is considered slightly toxic to nontoxic to avian

species, and it is not expected to be found in the environment at levels of concern. Therefore, risk to avian species is expected to be minimal. Toxicity to fish and aquatic invertebrates, however, is considered very high. Lithium salt is toxic to rainbow trout, fathead minnow, and Daphnia magna water fleas. Lithium is not expected to accumulate in mammals and its human and environmental toxicity are low. Lithium does accumulate in several species of fish, mollusks and crustaceans where it stored in the digestive tract and outer skeleton.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
boric acid	LOW	LOW

#### Bioaccumulative potential

Ingredient	Bioaccumulation
boric acid	LOW (BCF = 0)

#### Mobility in soil

Ingredient	Mobility
boric acid	LOW (Log KOC = 35.04)

#### Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

### SECTION 13 Disposal considerations

#### Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <ul style="list-style-type: none"> <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.</li> <li>▶ 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>
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### SECTION 14 Transport information

#### Labels Required

<b>Marine Pollutant</b>	NO
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**Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

#### 14.7. Maritime transport in bulk according to IMO instruments

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

Not Applicable

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

Product name	Group
boric acid	Not Applicable
lithium hydroxide	Not Applicable

##### 14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
boric acid	Not Applicable
lithium hydroxide	Not Applicable

## SECTION 15 Regulatory information

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

#### boric acid is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List  
 US DOE Temporary Emergency Exposure Limits (TEELs)  
 US EPA Integrated Risk Information System (IRIS)  
 US EPA Pesticide Chemical Search - Antimicrobial  
 US EPA Pesticide Chemical Search - Biopesticides  
 US EPA Pesticide Chemical Search - Conventional Chemical  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

#### lithium hydroxide is found on the following regulatory lists

US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Corrosives  
 US - New Jersey Right to Know Hazardous Substances  
 US AIHA Workplace Environmental Exposure Levels (WEELs)  
 US DOE Temporary Emergency Exposure Limits (TEELs)  
 US New York City Community Right-to-Know: List of Hazardous Substances  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  
 US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

### Additional Regulatory Information

Not Applicable

### Federal Regulations

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	Yes

Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

None Reported

**US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)**

None Reported

**Additional Federal Regulatory Information**

Not Applicable

**State Regulations****US. California Proposition 65**

None Reported

**Additional State Regulatory Information**

Not Applicable

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (boric acid; lithium hydroxide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
UAE - Control List (Banned/Restricted Substances)	No (lithium hydroxide)
<b>Legend:</b>	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**

<b>Revision Date</b>	10/05/2018
<b>Initial Date</b>	10/06/2018

**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**

- ▶ PC - TWA: Permissible Concentration-Time Weighted Average
- ▶ PC - STEL: Permissible Concentration-Short Term Exposure Limit
- ▶ IARC: International Agency for Research on Cancer
- ▶ ACGIH: American Conference of Governmental Industrial Hygienists
- ▶ STEL: Short Term Exposure Limit
- ▶ TEEL: Temporary Emergency Exposure Limit,
- ▶ IDLH: Immediately Dangerous to Life or Health Concentrations
- ▶ ES: Exposure Standard
- ▶ OSF: Odour Safety Factor
- ▶ NOAEL: No Observed Adverse Effect Level
- ▶ LOAEL: Lowest Observed Adverse Effect Level
- ▶ TLV: Threshold Limit Value
- ▶ LOD: Limit Of Detection
- ▶ OTV: Odour Threshold Value
- ▶ BCF: BioConcentration Factors
- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level

- ▶ PNEC: Predicted no-effect concentration
- ▶ MARPOL: International Convention for the Prevention of Pollution from Ships
- ▶ IMSBC: International Maritime Solid Bulk Cargoes Code
- ▶ IGC: International Gas Carrier Code
- ▶ IBC: International Bulk Chemical Code
  
- ▶ AIIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European Inventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers
- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory
- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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