

# Calcium Analysis kit vial 1- Buffer

## Winechek

Chemwatch: 9041-17

Version No: 2.1

Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Chemwatch Hazard Alert Code: 3

Initial Date: 07/03/2026

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Print Date: 09/21/2026

L.GHS.AUS.EN.E

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

### Product Identifier

|                               |                                     |
|-------------------------------|-------------------------------------|
| Product name                  | Calcium Analysis kit vial 1- Buffer |
| Chemical Name                 | Not Applicable                      |
| Synonyms                      | Not Available                       |
| Chemical formula              | Not Applicable                      |
| Other means of identification | Not Available                       |

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

|                          |                                     |
|--------------------------|-------------------------------------|
| Relevant identified uses | Use as received. Store at 4 degree. |
|--------------------------|-------------------------------------|

### Details of the manufacturer or importer of the safety data sheet

|                         |                                              |
|-------------------------|----------------------------------------------|
| Registered company name | Winechek                                     |
| Address                 | 10 Kalimna Road, Nuriootpa SA 5355 Australia |
| Telephone               | +61 8 8360 2200                              |
| Fax                     | Not Available                                |
| Website                 | Not Available                                |
| Email                   | support@winechek.com                         |

### Emergency telephone number

|                                     |                            |
|-------------------------------------|----------------------------|
| Association / Organisation          | Poisons Information Centre |
| Emergency telephone number(s)       | 13 11 26                   |
| Other emergency telephone number(s) | Not Available              |

## SECTION 2 Hazards identification

### Classification of the substance or mixture

|                               |                                                                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Poisons Schedule              | Not Applicable                                                                                                                                    |
| Classification <sup>[1]</sup> | Serious Eye Damage/Eye Irritation Category 1, Reproductive Toxicity Category 1B, Hazardous to the Aquatic Environment Long-Term Hazard Category 3 |
| Legend:                       | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI               |

### Label elements

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

### Hazard statement(s)

|       |                                                    |
|-------|----------------------------------------------------|
| H318  | Causes serious eye damage.                         |
| H360D | May damage the unborn child.                       |
| H412  | Harmful to aquatic life with long lasting effects. |

### Precautionary statement(s) Prevention

|      |                                                                                  |
|------|----------------------------------------------------------------------------------|
| P202 | Do not handle until all safety precautions have been read and understood.        |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |

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|      |                                   |
|------|-----------------------------------|
| P273 | Avoid release to the environment. |
|------|-----------------------------------|

## Precautionary statement(s) Response

|                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313      | IF exposed or concerned: Get medical advice/ attention.                                                                          |
| P310           | Immediately call a POISON CENTER/doctor/physician/first aider.                                                                   |

## Precautionary statement(s) Storage

|      |                  |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

## Precautionary statement(s) Disposal

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

No further product hazard information.

## SECTION 3 Composition / information on ingredients

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No                                                                                                                                                                                                      | %[weight] | Name                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------|
| 144-55-8                                                                                                                                                                                                    | <5        | <u>sodium bicarbonate</u>                  |
| 497-19-8                                                                                                                                                                                                    | <5        | <u>sodium carbonate</u>                    |
| 148-24-3                                                                                                                                                                                                    | <1        | <u>8-hydroxyquinoline</u>                  |
| Not Available                                                                                                                                                                                               | Balance   | Ingredients determined not to be hazardous |
| <b>Legend:</b> 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available |           |                                            |

## SECTION 4 First aid measures

## Description of first aid measures

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Contact  | If this product comes in contact with the eyes: <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> |
| Skin Contact | If skin contact occurs: <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>                                                                                                                                                                                                                                                                                                                                                                      |
| Inhalation   | <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>                                                                                           |
| Ingestion    | <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> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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

Treat symptomatically.

## SECTION 5 Firefighting measures

## Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances.

In such an event consider:

- foam.
- dry chemical powder.
- carbon dioxide.

## Special hazards arising from the substance or mixture

|                      |             |
|----------------------|-------------|
| Fire Incompatibility | None known. |
|----------------------|-------------|

## Advice for firefighters

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire Fighting | <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> </ul> |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Continued...

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|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <ul style="list-style-type: none"> <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> <li>▶ The material is not readily combustible under normal conditions.</li> <li>▶ However, it will break down under fire conditions and the organic component may burn.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Heat may cause expansion or decomposition with violent rupture of containers.</li> <li>▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> </ul> <p>Decomposes on heating and produces toxic fumes of:</p> <ul style="list-style-type: none"> <li>▶ carbon dioxide (CO<sub>2</sub>)</li> </ul> <p>nitrogen oxides (NO<sub>x</sub>)</p> <ul style="list-style-type: none"> <li>▶ other pyrolysis products typical of burning organic material.</li> </ul> <p>May emit poisonous fumes.</p> <p>May emit corrosive fumes.</p> |
| HAZCHEM               | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## SECTION 6 Accidental release measures

## Personal precautions, protective equipment and emergency procedures

See section 8

## Environmental precautions

See section 12

## Methods and material for containment and cleaning up

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minor Spills | <ul style="list-style-type: none"> <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Major Spills | <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>▶ 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>▶ Neutralise/decontaminate residue (see Section 13 for specific agent).</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</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

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling     | <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 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> <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> |
| Other information | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Conditions for safe storage, including any incompatibilities

|                         |                                                                                                                                                                                                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container      | <ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>                                                                 |
| Storage incompatibility | <p>Contains a six-membered heterocyclic ring.</p> <p>Six-membered heterocycles can be described as pi--deficient. Substitution by electronegative groups or additional nitrogen atoms in the ring significantly increase the pi-deficiency. These effects also decrease the basicity.</p> |

Continued...

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Electrophilic aromatic substitution is more difficult while nucleophilic aromatic substitution is facilitated. for pyridines:

- Because of the electronegative nitrogen in the pyridine ring, the molecule is relatively electron deficient. It, therefore, enters less readily electrophilic aromatic substitution reactions, which are characteristic of benzene derivatives; even more so if the reaction mix doesn't scavenge protons released by the reaction (protonated pyridine is even more electron-deficient). However, unlike benzene and its derivatives, pyridine is more prone to nucleophilic substitution and metalation of the ring by strong organometallic bases.

- The nitrogen center of pyridine features a basic lone pair of electrons. Because this lone pair is not part of the aromatic ring, pyridine is a base, having chemical properties similar to those of tertiary amines. Pyridine can act as Lewis base, donating its pair of electrons to a Lewis acid.

- Pyridine is protonated by reaction with acids and forms a positively charged aromatic polyatomic ion called pyridinium

The reactivity of pyridine can be distinguished for three chemical groups.

- With electrophiles, electrophilic substitution takes place where pyridine expresses aromatic properties.
- With nucleophiles, pyridine reacts at positions 2 and 4 and thus behaves similar to imines and carbonyls.
- The reaction with many Lewis acids results in the addition to the nitrogen atom of pyridine, which is similar to the reactivity of tertiary amines. The ability of pyridine and its derivatives to oxidize, forming amine oxides (N-oxides), is also a feature of tertiary amines

Secondary amines form salts with strong acids and can be oxidized to the corresponding nitron using hydrogen peroxide, catalyzed by selenium dioxide  
None known

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Not Available

## MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

## Exposure controls

## Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

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

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

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

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

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

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant:                                                                                                                                                                                                | Air Speed:                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| solvent, vapours, degreasing etc., evaporating from tank (in still air).                                                                                                                                            | 0.25-0.5 m/s<br>(50-100 f/min.) |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.)      |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)                                                      | 1-2.5 m/s (200-500 f/min.)      |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).                                                                | 2.5-10 m/s (500-2000 f/min.)    |

Within each range the appropriate value depends on:

| Lower end of the range                                     | Upper end of the range           |
|------------------------------------------------------------|----------------------------------|
| 1: Room air currents minimal or favourable to capture      | 1: Disturbing room air currents  |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity |
| 3: Intermittent, low production.                           | 3: High production, heavy use    |
| 4: Large hood or large air mass in motion                  | 4: Small hood-local control only |

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of 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.

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|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Individual protection measures, such as personal protective equipment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Eye and face protection                                               | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.[AS/NZS 1337.1, EN166 or national equivalent]</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>▶ 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.</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> |
| 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".

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

Calcium Analysis kit vial 1- Buffer

| Material       | CPI |
|----------------|-----|
| BUTYL          | C   |
| NATURAL RUBBER | C   |
| NEOPRENE       | C   |
| NITRILE        | C   |
| PVA            | C   |
| VITON          | C   |

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

## Respiratory protection

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

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.

| 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                                                               | A-AUS / Class1       | -                    |
| up to 50                           | 1000                                                               | -                    | A-AUS / Class 1      |
| up to 50                           | 5000                                                               | Airline *            | -                    |
| up to 100                          | 5000                                                               | -                    | A-2                  |
| up to 100                          | 10000                                                              | -                    | A-3                  |
| 100+                               |                                                                    |                      | Airline**            |

Continued...

## Calcium Analysis kit vial 1- Buffer

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.

## 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.*

\* - 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)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

| Appearance                                                  | Orange/yellow liquid; mixes with water. |                                                                  |                |
|-------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------|----------------|
| Physical state                                              | Liquid                                  | 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 Applicable |
| pH (as supplied)                                            | 10                                      | Decomposition temperature (°C)                                   | Not Available  |
| Melting point / freezing point (°C)                         | Not Available                           | Viscosity (mm <sup>2</sup> /s)                                   | Not Available  |
| Initial boiling point and boiling range (°C)                | Not Available                           | Molecular weight (g/mol)                                         | Not Applicable |
| Flash point (°C)                                            | Not Applicable                          | Taste                                                            | Not Available  |
| Evaporation rate                                            | Not Available                           | Explosive properties                                             | Not Available  |
| Flammability                                                | Not Applicable                          | Oxidising properties                                             | Not Available  |
| Upper Explosive Limit (%)                                   | Not Applicable                          | Surface Tension (dyn/cm or mN/m)                                 | Not Available  |
| Lower Explosive Limit (%)                                   | Not Applicable                          | 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  |

## SECTION 10 Stability and reactivity

| Reactivity                         | See section 7                                                                                                                                                                                        |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical stability                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| Possibility of hazardous reactions | See section 7                                                                                                                                                                                        |
| Conditions to avoid                | See section 7                                                                                                                                                                                        |
| Incompatible materials             | See section 7                                                                                                                                                                                        |
| Hazardous decomposition products   | See section 5                                                                                                                                                                                        |

## SECTION 11 Toxicological information

## Information on toxicological effects

| a) Acute Toxicity | Based on available data, the classification criteria are not met. |
|-------------------|-------------------------------------------------------------------|
|-------------------|-------------------------------------------------------------------|

## Calcium Analysis kit vial 1- Buffer

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| <b>b) Skin Irritation/Corrosion</b>         | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>c) Serious Eye Damage/Irritation</b>     | There is sufficient evidence to classify this material as eye damaging or irritating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| <b>d) Respiratory or Skin sensitisation</b> | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>e) Mutagenicity</b>                      | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>f) Carcinogenicity</b>                   | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>g) Reproductivity</b>                    | There is sufficient evidence to classify this material as toxic to reproductivity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>h) STOT - Single Exposure</b>            | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>i) STOT - Repeated Exposure</b>          | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>j) Aspiration Hazard</b>                 | Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Inhaled</b>                              | <p>The material is not classified as causing respiratory irritation under Regulation (EC) No 1272/2008 (CLP), as amended. Nevertheless, inhalation of vapours, fumes or aerosols, particularly following prolonged exposure, may cause respiratory discomfort and, occasionally, respiratory distress.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>Clinical signs of quinoline intoxication include lethargy, respiratory distress and prostration leading to coma.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| <b>Ingestion</b>                            | The material is not expected to produce harmful effects following ingestion based on the available information. However, the material may still cause adverse health effects following ingestion, particularly in individuals with pre-existing organ damage (e.g. liver or kidney impairment). Gastrointestinal discomfort may occur and may result in nausea and vomiting. In an occupational setting, ingestion of incidental quantities should be avoided, and good hygiene practices should be followed to prevent ingestion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| <b>Skin Contact</b>                         | <p>Skin contact is not expected to result in harmful health effects and the material is not classified as hazardous by the dermal route under Regulation (EC) No 1272/2008 (CLP), as amended. However, the material may cause harm following entry through wounds, lesions or abrasions.</p> <p>Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Eye</b>                                  | When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Chronic</b>                              | <p>On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.</p> <p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance who are likely to become hyper-responsive.</p> <p>Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing air-way hyper-responsiveness. The latter substances are not classified as asthmagens or respiratory sensitisers. Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive.</p> <p>Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance.</p> <p>There is sufficient evidence to provide a strong presumption that human exposure to the material may result in developmental toxicity, generally on the basis of:</p> <ul style="list-style-type: none"> <li>- clear results in appropriate animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects.</li> </ul> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>Metabolites may include quinoline and its conjugates. Quinoline has been shown to be carcinogenic in rats and mice, inducing hepatocellular carcinomas and haemangioendotheliomas. It has also been shown to be mutagenic to bacteria. Long term exposure to low quinoline concentrations may pose a cancer risk in humans, but a direct comparison from human data to predict human risk cannot be made.</p> <p><b>NIOSHTIC</b></p> <p>Rats fed 0.05, 0.10 or 0.25% quinoline for 16 to 40 weeks showed lower than normal weight gain, but higher liver weight and mortality. Rats fed at 0.25 % become moribund or died within 40 weeks due to rupture of vascular liver tumours or generalised toxic effects.</p> <p>Quinoline is a co-initiator of tumours in short-term mouse skin assays with "sub-threshold" levels of benzo[a]pyrene in the presence of tetradecanoyl phorbol esters. Quinoline binds to RNA, DNA and certain polyribonucleotides in microsomes. The 2,3- or 3,4-epoxy derivative of quinoline has been suggested as a reactive intermediate for nucleic acid modification.</p> <p>Clinical symptoms and signs of intoxication following occupational exposure to pyridine, its homologues and derivatives include gastrointestinal disturbance with diarrhoea, abdominal pain and nausea, weakness, headache, insomnia and nervousness. Data indicate that piperidine, pyridine, methyl and alkyl derivatives of pyridine (picolines, lutidines collidines), nicotinonitrile and picolinonitrile are slightly to moderately toxic following acute exposures.</p> <p>The available data support the conclusion that the pyridines possess similar human health-related data, and in particular, target organs appear to be the liver and the male reproductive tract.</p> <p>The weight-of-evidence suggests that Pyridine and Pyridine Derivatives Category chemicals are not mutagenic. This conclusion is supported by a number of in vivo mutagenicity assays and carcinogenicity studies with negative results for pyridine.</p> <p>Reproductive screening evaluations using several repeated dose toxicity studies indicates that piperidine, pyridine and nicotinonitrile may be male reproductive toxicants.</p> <p>Exposures less than those which produce overt clinical signs may produce varying levels of liver damage with central lobular fatty degeneration, congestion and cellular infiltration; repeated low level exposures may produce cirrhosis. The kidney is less sensitive to pyridine-induced damage than is the liver. Pyridine, like primidone, phenobarbital and oxazepam induces liver neoplasms in mice, but not in rats, even though in rats these chemicals cause a spectrum of toxic liver lesions. The mouse, an animal with a high background rate of liver neoplasms, is particularly sensitive to the development of malignant liver neoplasms following chemical exposure. There is equivocal evidence (1) that pyridine is carcinogenic in male F344/N rats (based on an increased incidence of renal tubule neoplasms), in female rats of the same species (based on increases in mononuclear cell leukaemia), in male Wistar rats (based on an increased incidence of mononuclear cell leukaemia), and clear evidence of carcinogenicity (1) in male and female B6C3F1 mice (based on increased incidences of malignant hepatocellular neoplasms). 1: National Toxicology Program Technical Report Series No. 470, March 2000</p> |

## Calcium Analysis kit vial 1- Buffer

| Calcium Analysis kit vial 1- Buffer | TOXICITY                                                                                                                                                                                                                           | IRRITATION                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|                                     | Not Available                                                                                                                                                                                                                      | Not Available                                                     |
| sodium bicarbonate                  | TOXICITY                                                                                                                                                                                                                           | IRRITATION                                                        |
|                                     | Oral (Mouse) LD50: 3360 mg/kg <sup>[2]</sup>                                                                                                                                                                                       | Eye (Rodent - rabbit): 100mg/30S - Mild                           |
|                                     |                                                                                                                                                                                                                                    | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>   |
|                                     |                                                                                                                                                                                                                                    | Skin (Human): 30mg/3D - Mild                                      |
|                                     |                                                                                                                                                                                                                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>  |
| sodium carbonate                    | TOXICITY                                                                                                                                                                                                                           | IRRITATION                                                        |
|                                     | dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup>                                                                                                                                                                                      | Eye (Rodent - rabbit): 100mg/24H - Moderate                       |
|                                     | Oral (Rat) LD50: 2800 mg/kg <sup>[2]</sup>                                                                                                                                                                                         | Eye (Rodent - rabbit): 100mg/30S - Mild                           |
|                                     |                                                                                                                                                                                                                                    | Eye (Rodent - rabbit): 50mg - Severe                              |
|                                     |                                                                                                                                                                                                                                    | Eye: adverse effect observed (irritating) <sup>[1]</sup>          |
|                                     |                                                                                                                                                                                                                                    | Skin (Rodent - rabbit): 500mg/24H - Mild                          |
|                                     |                                                                                                                                                                                                                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>  |
| 8-hydroxyquinoline                  | TOXICITY                                                                                                                                                                                                                           | IRRITATION                                                        |
|                                     | dermal (rat) LD50: >10000 mg/kg <sup>[1]</sup>                                                                                                                                                                                     | Eye (Rodent - rabbit): 100mg - Mild                               |
|                                     | Oral (Rat) LD50: 1200 mg/kg <sup>[2]</sup>                                                                                                                                                                                         | Eye: adverse effect observed (irreversible damage) <sup>[1]</sup> |
|                                     |                                                                                                                                                                                                                                    | Skin (Rodent - rabbit): 500mg/24H - Mild                          |
|                                     |                                                                                                                                                                                                                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>  |
| <b>Legend:</b>                      | <b>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances</b> |                                                                   |

| Calcium Analysis kit vial 1- Buffer                      | No significant acute toxicological data identified in literature search.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SODIUM BICARBONATE                                       | Oral (human-infant) TDLo: 1260 mg/kg Skin (human): 30 mg/3d-I-mild                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SODIUM CARBONATE                                         | <p>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>for sodium carbonate:<br/>Sodium carbonate has no or a low skin irritation potential but it is considered irritating to the eyes. Due to the alkaline properties an irritation of the respiratory tract is also possible.<br/>No valid animal data are available on repeated dose toxicity studies by oral, dermal, inhalation or by other routes for sodium carbonate. A repeated dose inhalation study, which was not reported in sufficient detail, revealed local effects on the lungs which could be expected based on the alkaline nature of the compound. Under normal handling and use conditions neither the concentration of sodium in the blood nor the pH of the blood will be increased and therefore sodium carbonate is not expected to be systemically available in the body. It can be stated that the substance will neither reach the fetus nor reach male and female reproductive organs, which shows that there is no risk for developmental toxicity and no risk for toxicity to reproduction. This was confirmed by a developmental study with rabbits, rats and mice. An <i>in vitro</i> mutagenicity test with bacteria was negative and based on the structure of sodium carbonate no genotoxic effects are expected.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8-HYDROXYQUINOLINE                                       | <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.<br/>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Calcium Analysis kit vial 1- Buffer & 8-HYDROXYQUINOLINE | <p>The following information refers to contact allergens as a group and may not be specific to this product.<br/>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.<br/>The substance is classified by IARC as Group 3:<br/><b>NOT</b> classifiable as to its carcinogenicity to humans.<br/>Evidence of carcinogenicity may be inadequate or limited in animal testing.<br/>In rabbits and dogs, quinoline and its metabolites are excreted in the urine. Urinary excretion of quinoline and its metabolites was nearly complete 24 hours after i.v. dosing of dogs with 20 or 25 mg/kg. Less than 0.5% of the administered quinoline was excreted unchanged. Approximately 29%-32% of the administered quinoline was recovered from the urine as 3-hydroxyquinoline (free and conjugated forms). Approximately 0.4%-0.8% of free quinoline was detected in rabbit urine collected 24 hours after administration of an oral dose of 250 mg/kg. Approximately 6.7%-11.0 % of the quinoline was determined to be excreted as a labile compound that yields quinoline on heating with acid. About 3%-4% of quinoline was excreted as the metabolite 5,6-dihydroxyquinoline.<br/><b>Repeat dose toxicity:</b> Groups of 20 male Sprague-Dawley rats were fed a diet containing 0.05% (low-dose), 0.10% (mid-dose), or 0.25% (high-dose) quinoline for approximately 16-40 weeks. Absolute and relative liver weights were significantly increased in all treatment groups, and the difference between initial and final mean body weights decreased with increasing dose. Histological examination of the liver revealed fatty change, bile duct proliferation, and oval cells in treated animals. Also, nodular hyperplasia was seen in the mid- and high-dose animals.<br/><b>Carcinogenicity:</b> No reliable human epidemiological studies are available that address the potential carcinogenicity of quinoline. However, laboratory studies have shown that quinoline is mitogenic and mutagenic in vitro and in vivo, and that humans and rats share a common quinoline-metabolizing P450 enzyme. Liver tumors have been observed in rats and mice exposed to quinoline via oral and i.p. routes of</p> |

Continued...

Calcium Analysis kit vial 1- Buffer

exposure, but not in rats exposed subcutaneously, despite the fact that the s.c. injections resulted in maximally tolerated doses more than 40 times higher than i.p. doses given to mice . The observation of skin tumors on mice dermally exposed to quinoline and tumor promoter tetradecanoyl phorbol acetate suggests that quinoline can initiate skin tumors (no other tumor types were reported) without first-pass metabolism in the liver, but the question of whether inhaled quinoline would have such effects without promotion remains. Several animal studies report hepatocarcinogenicity (hepatocellular carcinomas and haemangioendotheliomas or haemangiosarcomas, a vascular tumor) in rats and mice following oral dosing with quinoline. Quinoline has also been reported to be a hepatocarcinogen in newborn mice following intraperitoneal exposure . Metastatic changes, arising from these tumors, were detected in the lungs of some of the rats. Hepatic tumours (carcinomas, adenomas, and basophilic altered foci) were observed in male newborn mice, but not male or female newborn rats. No tumors, but basophilic altered foci, were observed in female newborn mice. Quinoline initiated skin tumors in female SENCAR mice following dermal application. Important aspects of the hepatocarcinogenicity of quinoline are the relatively short latency period (as low as 12 weeks) for tumor formation, and the fact that one of the tumor types observed, haemangioendotheliomas, is uncommon in rats and mice. Other studies indicate species differences in regard to liver tumorigenesis by quinoline; mice and rats are most susceptible and hamsters and guinea pigs appear to be resistant. Quinoline is considered **likely to be carcinogenic in humans** in accordance with proposed EPA carcinogen risk assessment guidelines (U.S. EPA, 1996) on the basis of observations of exposure-related increased incidence of an unusual malignant tumor in multiple strains of rats and mice, in multiple experiments using oral, dermal, i.p., and s.c. dosing, and at an early age. This determination is supported by studies that demonstrate that quinoline is genotoxic. Quinoline can apparently act as a promoter of liver carcinogenicity as well. Quinoline, 3-fluoroquinone (3-FQ), or 5-fluoroquinone (5-FQ) were fed to F344 male rats in their diet (0.1% and 0.05%) for a period of 6 weeks following a single, 200 mg/kg i.p. injection of the liver carcinogen diethylnitrosamine (DEN). The number and areas of GST-P (placental glutathione S10 transferase)-positive foci induced in the liver increased significantly as a result of treatment with 0.1% but not 0.05% quinoline. **Genotoxicity:** Quinoline is a mutagen in *Salmonella typhimurium* in the presence of metabolic activation . Quinoline has also been shown to induce chromosome aberrations and sister chromatid exchanges in the rat liver and micronucleus formation in the bone marrow of CD1 male mice. Although a predominance of data suggest that quinoline is genotoxic, the results of at least one study indicate that a nongenotoxic (i.e., mitogenic) mechanism of action may play a role in its hepatocarcinogenicity (Quinoline was found to have significant activity in the *Salmonella typhimurium* strain TA100, but generally not in strains TA1537 and TA1538 , nor TA98 , suggesting that it may be acting via base-pair substitution). 3-Fluoro- and 2- and 3-chloroquinolines were less mutagenic than all other fluoro- and chloro-substituted derivatives of quinoline . The 3-fluoro derivative of quinoline completely blocks the mutagenic activity of quinoline. Substitutions at other locations do not reduce quinoline's mutagenicity, and in some cases enhance it (presumably by inhibiting detoxification pathways). Studies suggest that the 2,3-epoxide is the active metabolic mutagen based on the fact that the 4-chloro isomer is weakly mutagenic (presumably no mutagenicity would be observed if a 3,4-epoxide were necessary), the 4-methyl isomer is strongly mutagenic (suggested to be because of suppression of detoxification of the 2,3-epoxide), and the 2-methyl isomer is weakly mutagenic (the authors report that methyl substitution at the site of epoxide formation is known to partially reduce mutagenicity).

|                                                            |                                                                                                                                                                                                |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SODIUM BICARBONATE & SODIUM CARBONATE & 8-HYDROXYQUINOLINE | 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

|                                     |               |                    |                               |                 |               |
|-------------------------------------|---------------|--------------------|-------------------------------|-----------------|---------------|
| Calcium Analysis kit vial 1- Buffer | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|                                     | Not Available | Not Available      | Not Available                 | Not Available   | Not Available |
| sodium bicarbonate                  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|                                     | EC50          | 48h                | Crustacea                     | 101mg/l         | 2             |
|                                     | NOEC(ECx)     | 240h               | Algae or other aquatic plants | 26.8mg/l        | 2             |
|                                     | EC50          | 96h                | Algae or other aquatic plants | 650mg/L         | 4             |
| sodium carbonate                    | LC50          | 96h                | Fish                          | 833.28mg/L      | 4             |
|                                     | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|                                     | EC50          | 72h                | Algae or other aquatic plants | >800mg/l        | 2             |
|                                     | NOEC(ECx)     | 48h                | Fish                          | 0.011mg/L       | 4             |
|                                     | EC50          | 48h                | Crustacea                     | 156.6-298.9mg/l | 4             |
| 8-hydroxyquinoline                  | EC50          | 96h                | Algae or other aquatic plants | 242mg/L         | 4             |
|                                     | LC50          | 96h                | Fish                          | 300mg/l         | 2             |
|                                     | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|                                     | EC50          | 72h                | Algae or other aquatic plants | 0.039mg/l       | 2             |
|                                     | BCF           | 1008h              | Fish                          | <4.2            | 7             |
| 8-hydroxyquinoline                  | EC50          | 48h                | Crustacea                     | 2.4mg/l         | 2             |
|                                     | NOEC(ECx)     | 72h                | Algae or other aquatic plants | 0.005mg/l       | 2             |
|                                     | LC50          | 96h                | Fish                          | 14.6-22.1mg/L   | 4             |

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 8. User defined data

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.  
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.  
For quinoline:  
Henry's Law constant: 2.49x10<sup>-7</sup> atm-m<sup>3</sup>mol<sup>-2</sup>  
Koc 79-205  
Bioconcentration factor 21  
log Kow 2.03  
**Environmental fate:**  
When released to aquatic systems, quinoline will biodegrade . The rate depends upon temperature and microbial conditions, with complete degradation occurring within 5 days. Quinoline is also likely to be photolysed at rates that depend on pH, depth of water, season, and presence of humic acids. Photolytic half-lives range from 21 days during the summer to 160 days during the winter. A low Henry's Law constant predicts little volatilisation.  
Given a bioconcentration factor (BCF) of 21 and a Koc of 79-205, sorption to suspended sediments and bioaccumulation are likely to be responsible for a moderate-to-low level of removal from aquatic systems.  
When released to soil, quinoline is likely to leach quickly into groundwater It is predicted that less than 0.5% of quinoline released would sorb to sediments and particulates, and quinoline is likely to partition into water, given its moderate water solubility and low Kow . Once quinoline partitions to water, it is not likely to volatilise to air because of its low Henry's Law constant . There was no relation between adsorption and soil carbon content.  
Biodegradation is likely to take place but, on the basis of information available for quinoline in water, hydrolysis, oxidation, and volatilisation should not be significant.  
Quinoline released to the atmosphere is likely to react with hydroxyl radicals, with an estimated reaction half-life of 2.51 days Because of its strong absorption of light wavelengths >290 nm, quinoline has the potential for direct photolysis in the atmosphere. Removal from the atmosphere can occur via wet and dry deposition.  
**DO NOT discharge into sewer or waterways.**

Persistence and degradability

| Ingredient         | Persistence: Water/Soil | Persistence: Air |
|--------------------|-------------------------|------------------|
| sodium bicarbonate | LOW                     | LOW              |
| sodium carbonate   | LOW                     | LOW              |
| 8-hydroxyquinoline | HIGH                    | HIGH             |

Bioaccumulative potential

| Ingredient         | Bioaccumulation        |
|--------------------|------------------------|
| sodium bicarbonate | LOW (LogKOW = -4.01)   |
| sodium carbonate   | LOW (LogKOW = -0.4605) |
| 8-hydroxyquinoline | LOW (BCF = 41)         |

Mobility in soil

| Ingredient         | Mobility             |
|--------------------|----------------------|
| sodium bicarbonate | HIGH (Log KOC = 1)   |
| sodium carbonate   | HIGH (Log KOC = 1)   |
| 8-hydroxyquinoline | LOW (Log KOC = 3038) |

SECTION 13 Disposal considerations

Waste treatment methods

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product / Packaging disposal | <div>▶ Containers may still present a chemical hazard/ danger when empty.<br/>▶ Return to supplier for reuse/ recycling if possible.<br/>Otherwise:<br/>▶ 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.<br/>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.<br/>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.<br/>A Hierarchy of Controls seems to be common - the user should investigate:<br/>▶ Reduction<br/>▶ Reuse<br/>▶ Recycling<br/>▶ Disposal (if all else fails)<br/>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.<br/>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b><br/>▶ It may be necessary to collect all wash water for treatment before disposal.<br/>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br/>▶ Where in doubt contact the responsible authority.<br/>▶ Recycle wherever possible.<br/>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br/>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).<br/>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</div> |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

SECTION 14 Transport information

Labels Required

|                  |    |
|------------------|----|
| Marine Pollutant | NO |
|------------------|----|

|         |                |
|---------|----------------|
| HAZCHEM | Not Applicable |
|---------|----------------|

Land transport (ADG): 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          |
|--------------------|----------------|
| sodium bicarbonate | Not Applicable |
| sodium carbonate   | Not Applicable |
| 8-hydroxyquinoline | Not Applicable |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name       | Ship Type      |
|--------------------|----------------|
| sodium bicarbonate | Not Applicable |
| sodium carbonate   | Not Applicable |
| 8-hydroxyquinoline | Not Applicable |

SECTION 15 Regulatory information

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

sodium bicarbonate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

sodium carbonate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

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

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

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

Australian Inventory of Industrial Chemicals (AIIC)

8-hydroxyquinoline is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

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

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Additional Regulatory Information

Not Applicable

National Inventory Status

| National Inventory                                | Status                                                                                                                                                                                            |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use   | Yes                                                                                                                                                                                               |
| Canada - DSL                                      | Yes                                                                                                                                                                                               |
| Canada - NDSL                                     | No (sodium bicarbonate; sodium carbonate; 8-hydroxyquinoline)                                                                                                                                     |
| 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 (sodium bicarbonate; sodium carbonate; 8-hydroxyquinoline)                                                                                                                                     |
| Legend:                                           | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

## Calcium Analysis kit vial 1- Buffer

## SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 07/03/2026 |
| Initial Date  | 07/03/2026 |

## SDS Version Summary

| Version | Date of Update | Sections Updated                                                                                                                                                                               |
|---------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1     | 07/03/2026     | Composition / information on ingredients - Ingredients, Handling and storage - Storage (storage requirement), Identification of the substance / mixture and of the company / undertaking - Use |

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

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