

## TRADITIONAL GREEN & BLUE PATINAS

### BARNES PRODUCTS PTY LTD

Chemwatch Hazard Alert Code: 3

Chemwatch: 5247-16

Version No: 6.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Issue Date: 16/03/2023

Print Date: 19/06/2023

S.GHS.NZL.EN.E

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

##### Product Identifier

|                               |   |
|-------------------------------|---|
| Product name                  | TRADITIONAL GREEN & BLUE PATINAS  |
| Chemical Name                 | Not Applicable  |
| Synonyms                      | POWDER BLUE PATINA,; TIFFANY GREEN PATINA,; LIGHT GREEN PATINA,; BLUE INDOOR PATINA,; MINT GREEN PATINA |
| Proper shipping name          | CORROSIVE LIQUID, N.O.S. (contains acetic acid glacial)   |
| 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 | Patina solution. |
|--------------------------|------------------|

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

|                         |  |
|-------------------------|--|
| Registered company name | BARNES PRODUCTS PTY LTD                                    |
| Address                 | 5 GREENHILLS AVE MOOREBANK NSW 2170 Australia              |
| Telephone               | Barnes Australia +612 9793 7555 Mon-Fri 8am-4:30pm         |
| Fax                     | Barnes Australia +612 9793 7091                            |
| Website                 | <a href="http://www.barnesnz.co.nz">www.barnesnz.co.nz</a> |
| Email                   | sales@barnes.com.au  |

##### Emergency telephone number

|                                   |   |
|-----------------------------------|---|
| Association / Organisation        | New Zealand Poisons Information Centre                              |
| Emergency telephone numbers       | Barnes NZ +649 9731 816 - Monday-Thursday 9am-5pm Friday 9am-4.30pm |
| Other emergency telephone numbers | New Zealand Poisons Information Centre 0800 764 766 After Hours     |

#### SECTION 2 Hazards identification

##### Classification of the substance or mixture

|   |   |
|---|---|
| Classification [1]                              | Corrosive to Metals Category 1, Skin Corrosion/Irritation Category 1B, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1 |
| Legend:   | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI  |
| Determined by Chemwatch using GHS/HSNO criteria | 8.1A, 8.2B, 8.3A, 6.5B (contact), 6.9B, 9.1A  |

##### Label elements

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

##### Hazard statement(s)

|      |  |
|------|--|
| H290 | May be corrosive to metals.  |
| H314 | Causes severe skin burns and eye damage.                           |
| H317 | May cause an allergic skin reaction.                               |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

|      |   |
|------|---|
| H410 | Very toxic to aquatic life with long lasting effects. |
|------|---|

**Precautionary statement(s) Prevention**

|      |  |
|------|--|
| P260 | Do not breathe mist/vapours/spray.   |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P234 | Keep only in original packaging.   |
| P273 | Avoid release to the environment.  |
| P272 | Contaminated work clothing should not be allowed out of the workplace.           |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].                         |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310           | Immediately call a POISON CENTER/doctor/physician/first aider.   |
| P302+P352      | IF ON SKIN: Wash with plenty of water.   |
| P363           | Wash contaminated clothing before reuse.   |
| P333+P313      | If skin irritation or rash occurs: Get medical advice/attention.   |

**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. |
|------|--|

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

See section below for composition of Mixtures

**Mixtures**

| CAS No         | %[weight]   | Name                                       |
|----------------|---|--|
| 7758-99-8      | <10   | <u>copper sulfate pentahydrate</u>         |
| 64-19-7        | <10   | <u>acetic acid glacial</u>                 |
| Not Available  | balance   | Ingredients determined not to be hazardous |
| <b>Legend:</b> | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 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**

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>   |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul> <p>Wash all affected areas thoroughly with soap and water for at least 15 minutes.</p>   |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b><br/>(ICSC13719)</p> |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated</li> </ul>  |

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by the patient's condition.

- ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
- ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.

**Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:**

- ▶ **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

**NOTE:** Wear a protective glove when inducing vomiting by mechanical means.

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

Treat symptomatically.

for copper intoxication:

- ▶ Unless extensive vomiting has occurred empty the stomach by lavage with water, milk, sodium bicarbonate solution or a 0.1% solution of potassium ferrocyanide (the resulting copper ferrocyanide is insoluble).
- ▶ Administer egg white and other demulcents.
- ▶ Maintain electrolyte and fluid balances.
- ▶ Morphine or meperidine (Demerol) may be necessary for control of pain.
- ▶ If symptoms persist or intensify (especially circulatory collapse or cerebral disturbances, try BAL intramuscularly or penicillamine in accordance with the supplier's recommendations.
- ▶ Treat shock vigorously with blood transfusions and perhaps vasopressor amines.
- ▶ If intravascular haemolysis becomes evident protect the kidneys by maintaining a diuresis with mannitol and perhaps by alkalising the urine with sodium bicarbonate.
- ▶ It is unlikely that methylene blue would be effective against the occasional methaemoglobinemia and it might exacerbate the subsequent haemolytic episode.
- ▶ Institute measures for impending renal and hepatic failure.

[GOSSELIN, SMITH & HODGE: Commercial Toxicology of Commercial Products]

- ▶ A role for activated charcoals for emesis is, as yet, unproven.
- ▶ In severe poisoning CaNa<sub>2</sub>EDTA has been proposed.

[ELLENHORN & BARCELOUX: Medical Toxicology]

For acute or short term repeated exposures to strong acids:

- ▶ Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- ▶ Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- ▶ Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- ▶ Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

INGESTION:

- ▶ Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- ▶ **DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.**
- ▶ Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- ▶ Charcoal has no place in acid management.
- ▶ Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:

- ▶ Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- ▶ Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:

- ▶ Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. **DO NOT use neutralising agents or any other additives.** Several litres of saline are required.
- ▶ Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- ▶ Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and Barceloux: Medical Toxicology]

## SECTION 5 Firefighting measures

### Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### Special hazards arising from the substrate or mixture

|                             |             |
|-----------------------------|-------------|
| <b>Fire Incompatibility</b> | None known. |
|-----------------------------|-------------|

### Advice for firefighters

|                              |   |
|------------------------------|---|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>Do not approach containers suspected to be hot.</b></li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ May emit corrosive, poisonous fumes. May emit acrid smoke.</li> </ul> <p>Decomposition may produce toxic fumes of:<br/>sulfur oxides (SO<sub>x</sub>)<br/>copper</p>  |

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### SECTION 6 Accidental release measures

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

See section 8

#### Environmental precautions

See section 12

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

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul> |
| <b>Major Spills</b> | <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 full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Consider evacuation (or protect in place).</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> </ul>   |

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

### SECTION 7 Handling and storage

#### Precautions for safe handling

|                          |   |
|--------------------------|---|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with moisture.</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> </ul> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, 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

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ <b>DO NOT use aluminium or galvanised containers</b></li> <li>▶ Check regularly for spills and leaks</li> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▶ Drums and jerricans must be of the non-removable head type.</li> <li>▶ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> <li>▶ Removable head packaging;</li> <li>▶ Cans with friction closures and</li> <li>▶ low pressure tubes and cartridges</li> </ul> <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</p> |
| <b>Storage incompatibility</b> | <ul style="list-style-type: none"> <li>▶ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.</li> </ul> <p>Avoid contamination with</p> <ul style="list-style-type: none"> <li>, metals</li> <li>, cyanides</li> </ul> <ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> <li>▶ Avoid storage with reducing agents.</li> </ul>  |

### SECTION 8 Exposure controls / personal protection

#### Control parameters

Occupational Exposure Limits (OEL)

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## INGREDIENT DATA


| Source   | Ingredient                   | Material name   | TWA               | STEL              | Peak          | Notes                      |
|--|------------------------------|---|-------------------|-------------------|---------------|----------------------------|
| New Zealand Workplace Exposure Standards (WES) | copper sulfate, pentahydrate | Copper and its inorganic compounds, as Cu respirable dust | 0.01 mg/m3        | Not Available     | Not Available | (dsen) - Dermal sensitiser |
| New Zealand Workplace Exposure Standards (WES) | acetic acid glacial          | Acetic acid   | 10 ppm / 25 mg/m3 | 37 mg/m3 / 15 ppm | Not Available | Not Available              |

## Emergency Limits

| Ingredient                   | TEEL-1        | TEEL-2        | TEEL-3        |
|------------------------------|---------------|---------------|---------------|
| copper sulfate, pentahydrate | 7.5 mg/m3     | 9.9 mg/m3     | 59 mg/m3      |
| copper sulfate, pentahydrate | 12 mg/m3      | 32 mg/m3      | 190 mg/m3     |
| acetic acid glacial          | Not Available | Not Available | Not Available |

| Ingredient                   | Original IDLH | Revised IDLH  |
|------------------------------|---------------|---------------|
| copper sulfate, pentahydrate | Not Available | Not Available |
| acetic acid glacial          | 50 ppm        | Not Available |

## Exposure controls

|  |  |
|--|--|
| <b>Appropriate engineering controls</b>                                      | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p>   |
| <b>Individual protection measures, such as personal protective equipment</b> |    |
| <b>Eye and face protection</b>   | <ul style="list-style-type: none"> <li>Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> <li>Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.</li> <li>Alternatively a gas mask may replace splash goggles and face shields.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul> |
| <b>Skin protection</b>   | See Hand protection below  |
| <b>Hands/feet protection</b>   | <ul style="list-style-type: none"> <li>Elbow length PVC gloves</li> <li>When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</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>   |
| <b>Body protection</b>   | See Other protection below   |
| <b>Other protection</b>  | <ul style="list-style-type: none"> <li>Overalls.</li> <li>PVC Apron.</li> <li>PVC protective suit may be required if exposure severe.</li> <li>Eyewash unit.</li> <li>Ensure there is ready access to a safety shower.</li> </ul>  |

## 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:

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| Material    | CPI |
|-------------|-----|
| BUTYL       | A   |
| NEOPRENE    | A   |
| NITRILE+PVC | A   |
| PE          | A   |
| PE/EVAL/PE  | A   |
| PVC         | A   |
| SARANEX-23  | A   |

## Respiratory protection

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | AB-AUS               | -                    | AB-PAPR-AUS / Class 1  |
| up to 50 x ES                      | -                    | AB-AUS / Class 1     | -                      |
| up to 100 x ES                     | -                    | AB-2                 | AB-PAPR-2 ^            |

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or

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|                   |   |
|-------------------|---|
| TEFLON            | A |
| BUTYL/NEOPRENE    | B |
| NATURAL RUBBER    | B |
| NATURAL+NEOPRENE  | B |
| NITRILE           | B |
| NAT+NEOPR+NITRILE | C |

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)

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

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

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

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

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Clear blue acidic liquid with a vinegar like odour; mixes with water. |  |                |
| <b>Physical state</b>                               | Liquid  | <b>Relative density (Water = 1)</b>            | 1.06           |
| <b>Odour</b>  | Not Available   | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available   | <b>Auto-ignition temperature (°C)</b>          | Not Applicable |
| <b>pH (as supplied)</b>                             | 1   | <b>Decomposition temperature (°C)</b>          | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Available   | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | 100   | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | Not Applicable  | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | <1  | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Applicable  | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Applicable  | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Applicable  | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available   | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water</b>                          | Miscible  | <b>pH as a solution (1%)</b>                   | Not Available  |
| <b>Vapour density (Air = 1)</b>                     | <1  | <b>VOC g/L</b>                                 | Not Available  |

## SECTION 10 Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | See section 7                                   |
| <b>Chemical stability</b>                 | ▶ Contact with alkaline material liberates heat |
| <b>Possibility of hazardous reactions</b> | See section 7                                   |
| <b>Conditions to avoid</b>                | See section 7                                   |
| <b>Incompatible materials</b>             | See section 7                                   |
| <b>Hazardous decomposition products</b>   | See section 5                                   |

## SECTION 11 Toxicological information

## Information on toxicological effects

|                     |  |
|---------------------|--|
| <b>Inhaled</b>      | Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.   |
| <b>Ingestion</b>    | Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.   |
| <b>Skin Contact</b> | Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.<br>Causes burns.  |
| <b>Eye</b>          | If applied to the eyes, this material causes severe eye damage.<br>Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.<br>Causes burns. |

## TRADITIONAL GREEN &amp; BLUE PATINAS

|                |   |
|----------------|---|
| <b>Chronic</b> | <p>Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.</p> <p>For copper and its compounds (typically copper chloride):</p> <p>Acute toxicity: There are no reliable acute oral toxicity results available. Animal testing shows that skin in exposure to copper may lead to hardness of the skin, scar formation, exudation and reddish changes. Inflammation, irritation and injury of the skin were noted.</p> <p>Repeat dose toxicity: Animal testing shows that very high levels of copper monochloride may cause anaemia.</p> <p>Genetic toxicity: Copper monochloride does not appear to cause mutations in vivo, although chromosomal aberrations were seen at very high concentrations in vitro.</p> <p>Cancer-causing potential: There was insufficient information to evaluate the cancer-causing activity of copper monochloride.</p> <p>Repeated minor exposure to acetic acid by mouth can cause blackening of the skin and teeth, erosion of the teeth, vomiting, diarrhea and nausea. Repeated minor vapour exposure may cause chronic inflammation of the airways and bronchitis. Results from testing are mixed, with one report indicating only slight irritation to the airways, stomach and skin, while another reported inflammation of the conjunctiva, bronchi, pharynx and erosion of teeth. Exposure to higher levels caused blackening and hyperkeratosis of the skin and hands. Heartburn and constipation have also been reported with prolonged exposures.</p> |
|----------------|---|

| TRADITIONAL GREEN & BLUE PATINAS | TOXICITY  | IRRITATION                         |
|----------------------------------|---|------------------------------------|
|                                  | Not Available   | Not Available                      |
| copper sulfate, pentahydrate     | TOXICITY  | IRRITATION                         |
|                                  | dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup>   | Not Available                      |
|                                  | Oral (Mouse) LD50; 43 mg/kg <sup>[2]</sup>  |                                    |
| acetic acid glacial              | TOXICITY  | IRRITATION                         |
|                                  | Dermal (rabbit) LD50: 1060 mg/kg <sup>[2]</sup>   | Eye (rabbit): 0.05mg (open)-SEVERE |
|                                  | Inhalation(Mouse) LC50; 1.405 mg/L4h <sup>[2]</sup>   | Skin (human):50mg/24hr - mild      |
|                                  | Oral (Rat) LD50: 3310 mg/kg <sup>[2]</sup>  | Skin (rabbit):525mg (open)-SEVERE  |
| <b>Legend:</b>                   | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances |                                    |

|                                     |   |
|-------------------------------------|---|
| <b>COPPER SULFATE, PENTAHYDRATE</b> | <p>for copper and its compounds (typically copper chloride):</p> <p><b>Acute toxicity:</b> There are no reliable acute oral toxicity results available. In an acute dermal toxicity study (OECD TG 402), one group of 5 male rats and 5 groups of 5 female rats received doses of 1000, 1500 and 2000 mg/kg bw via dermal application for 24 hours. The LD50 values of copper monochloride were 2,000 mg/kg bw or greater for male (no deaths observed) and 1,224 mg/kg bw for female. Four females died at both 1500 and 2000 mg/kg bw, and one at 1,000 mg/kg bw. Symptom of the hardness of skin, an exudation of hardness site, the formation of scar and reddish changes were observed on application sites in all treated animals. Skin inflammation and injury were also noted. In addition, a reddish or black urine was observed in females at 2,000, 1,500 and 1,000 mg/kg bw.</p> <p>For copper sulfate</p> <p>Copper sulfate is corrosive. Side effects are diverse and multi-systemic, and include severe gastrointestinal symptoms and signs, metallic taste in the mouth, burning pain in the chest, headache, sweating, shock and damage to brain, liver and kidneys. It has been reported as a cause of human suicide. On exposure, it can cause dose dependent damage to the skin and eye, also, eczema and allergic reactions. Long term effects can lead to anaemia and degenerative changes and are more likely in individuals with Wilson's disease, a condition which causes excessive absorption and storage of copper. It has adverse effects on reproduction and fertility as well as cancer and embryo toxic effects. Although it is excreted in the faeces, there is residual accumulation the liver, brain, heart, kidney and muscles.</p>   |
| <b>ACETIC ACID GLACIAL</b>          | <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 acid mists, aerosols, vapours</p> <p>Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there).</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause severe 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. Repeated exposures may produce severe ulceration.</p> <p>Prolonged or repeated exposure to acetic acid may produce irritation and/ or corrosion at the site of contact as well as systemic toxicity.</p> <p>Prolonged inhalation exposure results in muscle imbalance, increase in blood cholinesterase activity, decrease in albumin and decreased growth but no reproductive or foetal toxicity, according to animal testing.</p> |

|  |   |                                 |   |
|--|---|---------------------------------|---|
| <b>Acute Toxicity</b>                    | ✘ | <b>Carcinogenicity</b>          | ✘ |
| <b>Skin Irritation/Corrosion</b>         | ✔ | <b>Reproductivity</b>           | ✘ |
| <b>Serious Eye Damage/Irritation</b>     | ✔ | <b>STOT - Single Exposure</b>   | ✘ |
| <b>Respiratory or Skin sensitisation</b> | ✔ | <b>STOT - Repeated Exposure</b> | ✔ |
| <b>Mutagenicity</b>                      | ✘ | <b>Aspiration Hazard</b>        | ✘ |

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

## SECTION 12 Ecological information

## Toxicity

Continued...



## TRADITIONAL GREEN &amp; BLUE PATINAS

| TRADITIONAL GREEN & BLUE PATINAS | Endpoint      | Test Duration (hr) | Species       | Value         | Source        |
|----------------------------------|---------------|--------------------|---------------|---------------|---------------|
|                                  | Not Available | Not Available      | Not Available | Not Available | Not Available |

| copper sulfate, pentahydrate | Endpoint  | Test Duration (hr) | Species                       | Value     | Source |
|------------------------------|-----------|--------------------|-------------------------------|-----------|--------|
|                              | EC50(ECx) | 96h                | Crustacea                     | 0.001mg/L | 5      |
|                              | EC50      | 72h                | Algae or other aquatic plants | 0.8mg/L   | 5      |
|                              | LC50      | 96h                | Fish                          | 0.073mg/L | 4      |
|                              | EC50      | 48h                | Crustacea                     | 0.003mg/L | 5      |

| acetic acid glacial | Endpoint  | Test Duration (hr) | Species                       | Value         | Source |
|---------------------|-----------|--------------------|-------------------------------|---------------|--------|
|                     | EC50(ECx) | 24h                | Algae or other aquatic plants | 0.08mg/l      | 2      |
|                     | EC50      | 72h                | Algae or other aquatic plants | 29.23mg/l     | 2      |
|                     | LC50      | 96h                | Fish                          | 31.3-67.6mg/l | 2      |
|                     | EC50      | 96h                | Algae or other aquatic plants | 73.4mg/l      | 4      |
| EC50                | 48h       | Crustacea          | 18.9mg/l                      | 2             |        |

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Prevent, by any means available, spillage from entering drains or water courses.

**DO NOT discharge into sewer or waterways.**

#### Persistence and degradability

| Ingredient                   | Persistence: Water/Soil | Persistence: Air |
|------------------------------|-------------------------|------------------|
| copper sulfate, pentahydrate | HIGH                    | HIGH             |
| acetic acid glacial          | LOW                     | LOW              |

#### Bioaccumulative potential

| Ingredient                   | Bioaccumulation        |
|------------------------------|------------------------|
| copper sulfate, pentahydrate | LOW (LogKOW = -2.2002) |
| acetic acid glacial          | LOW (LogKOW = -0.17)   |

#### Mobility in soil

| Ingredient                   | Mobility          |
|------------------------------|-------------------|
| copper sulfate, pentahydrate | LOW (KOC = 6.124) |
| acetic acid glacial          | HIGH (KOC = 1)    |

### SECTION 13 Disposal considerations

#### Waste treatment methods

|                                     |   |
|-------------------------------------|---|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ 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.</li> <li>▶ Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with soda-ash or soda-lime followed 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).</li> <li>▶ Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul> |
|-------------------------------------|---|

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

#### Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. Only dispose to the environment if a tolerable exposure limit has been set for the substance.



Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

### SECTION 14 Transport information

#### Labels Required



## TRADITIONAL GREEN &amp; BLUE PATINAS

|                  |   |
|------------------|---|
|                  |  |
| Marine Pollutant |  |
| HAZCHEM          | 2X  |

## Land transport (UN)

|                              |   |                |
|------------------------------|---|----------------|
| UN number or ID number       | 1760  |                |
| UN proper shipping name      | CORROSIVE LIQUID, N.O.S. (contains acetic acid glacial) |                |
| Transport hazard class(es)   | Class   | 8              |
|                              | Subsidiary risk   | Not Applicable |
| Packing group                | III   |                |
| Environmental hazard         | Environmentally hazardous                               |                |
| Special precautions for user | Special provisions                                      | 223; 274       |
|                              | Limited quantity  | 5 L            |

## Air transport (ICAO-IATA / DGR)

|                              |   |                |
|------------------------------|---|----------------|
| UN number                    | 1760  |                |
| UN proper shipping name      | Corrosive liquid, n.o.s. * (contains acetic acid glacial) |                |
| Transport hazard class(es)   | ICAO/IATA Class   | 8              |
|                              | ICAO / IATA Subrisk                                       | Not Applicable |
|                              | ERG Code  | 8L             |
| Packing group                | III   |                |
| Environmental hazard         | Environmentally hazardous                                 |                |
| Special precautions for user | Special provisions  | A3 A803        |
|                              | Cargo Only Packing Instructions                           | 856            |
|                              | Cargo Only Maximum Qty / Pack                             | 60 L           |
|                              | Passenger and Cargo Packing Instructions                  | 852            |
|                              | Passenger and Cargo Maximum Qty / Pack                    | 5 L            |
|                              | Passenger and Cargo Limited Quantity Packing Instructions | Y841           |
|                              | Passenger and Cargo Limited Maximum Qty / Pack            | 1 L            |

## Sea transport (IMDG-Code / GGVSee)

|                              |   |                |
|------------------------------|---|----------------|
| UN number                    | 1760  |                |
| UN proper shipping name      | CORROSIVE LIQUID, N.O.S. (contains acetic acid glacial) |                |
| Transport hazard class(es)   | IMDG Class  | 8              |
|                              | IMDG Subrisk  | Not Applicable |
| Packing group                | III   |                |
| Environmental hazard         | Marine Pollutant  |                |
| Special precautions for user | EMS Number  | F-A, S-B       |
|                              | Special provisions                                      | 223 274        |
|                              | Limited Quantities                                      | 5 L            |

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

Not Applicable

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

| Product name                 | Group         |
|------------------------------|---------------|
| copper sulfate, pentahydrate | Not Available |
| acetic acid glacial          | Not Available |

## Transport in bulk in accordance with the IGC Code

Continued...

## TRADITIONAL GREEN &amp; BLUE PATINAS

| Product name                 | Ship Type     |
|------------------------------|---------------|
| copper sulfate, pentahydrate | Not Available |
| acetic acid glacial          | Not Available |

## SECTION 15 Regulatory information

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

This substance is to be managed using the conditions specified in an applicable Group Standard

| HSR Number | Group Standard  |
|------------|---|
| HSR002526  | Cleaning Products Corrosive Group Standard 2020   |
| HSR002491  | Additives Process Chemicals and Raw Materials Corrosive Group Standard 2020                 |
| HSR002609  | Metal Industry Products Corrosive Group Standard 2020                                       |
| HSR002618  | N.O.S. Corrosive Group Standard 2020  |
| HSR002636  | Photographic Chemicals Corrosive Group Standard 2020  |
| HSR002658  | Surface Coatings and Colourants Corrosive Group Standard 2020                               |
| HSR002681  | Water Treatment Chemicals Corrosive Group Standard 2020                                     |
| HSR100425  | Pharmaceutical Active Ingredients Group Standard 2020                                       |
| HSR002598  | Leather and Textile Products Corrosive Group Standard 2020                                  |
| HSR002547  | Corrosion Inhibitors Corrosive Group Standard 2020  |
| HSR002555  | Dental Products Corrosive Group Standard 2020   |
| HSR002569  | Fertilisers Corrosive Group Standard 2020   |
| HSR002582  | Fuel Additives Corrosive Group Standard 2020  |
| HSR100757  | Veterinary Medicines Limited Pack Size Finished Dose Group Standard 2020                    |
| HSR100756  | Active Ingredients for Use in the Manufacture of Agricultural Compounds Group Standard 2020 |

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

## copper sulfate, pentahydrate is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

## acetic acid glacial is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

## Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class | Quantity (Compliance Certificate) | Quantity (Compliance Certificate - Farms >4 ha) |
|--------------|-----------------------------------|---|
| 8.2B         | 250 kg or 250 L                   | 3500 kg or 3500 L                               |

## Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Class of substance | Quantities     |
|--------------------|----------------|
| Not Applicable     | Not Applicable |

Refer Group Standards for further information

## Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class | Gas (aggregate water capacity in mL) | Liquid (L) | Solid (kg) | Maximum quantity per package for each classification |
|--------------|--------------------------------------|------------|------------|--|
| 6.5A or 6.5B | 120                                  | 1          | 3          |  |
| 8.2B         | 120                                  | 1          | 3          |  |

## Tracking Requirements

Not Applicable

## National Inventory Status

| National Inventory                             | Status |
|--|--------|
| Australia - AIC / Australia Non-Industrial Use | Yes    |

## TRADITIONAL GREEN &amp; BLUE PATINAS

| National Inventory            | Status  |
|-------------------------------|---|
| Canada - DSL                  | Yes   |
| Canada - NDSL                 | No (copper sulfate, pentahydrate; acetic acid glacial)  |
| China - IECSC                 | Yes   |
| Europe - EINEC / ELINCS / NLP | Yes   |
| Japan - ENCS                  | Yes   |
| Korea - KECI                  | Yes   |
| New Zealand - NZIoC           | Yes   |
| Philippines - PICCS           | Yes   |
| USA - TSCA                    | Yes   |
| Taiwan - TCSI                 | Yes   |
| Mexico - INSQ                 | Yes   |
| Vietnam - NCI                 | Yes   |
| Russia - FBEPH                | Yes   |
| <b>Legend:</b>                | 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. |

## SECTION 16 Other information

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 16/03/2023 |
| <b>Initial Date</b>  | 10/03/2017 |

## SDS Version Summary

| Version | Date of Update | Sections Updated  |
|---------|----------------|---|
| 5.1     | 23/12/2022     | Classification review due to GHS Revision change.   |
| 6.1     | 16/03/2023     | Hazards identification - Classification, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Synonyms, Name |

## 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  
 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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