



# CHROME OXIDE, GREEN

## ALPHA CHEMICALS PTY LTD

Chemwatch Hazard Alert Code: 2

Chemwatch: 19949  
Version No: 7.1.1.1  
Safety Data Sheet according to WHS and ADG requirements

Issue Date: 13/03/2019  
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S.GHS.AUS.EN

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

#### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | CHROME OXIDE, GREEN  |
| Chemical Name                 | C.I. Pigment Green 17  |
| Synonyms                      | Cr2O3; chromium oxide greens; chromium(III) oxide; chromia; chromium(3+) oxide; chromic oxide; chromium green oxide; C.I. 77288; dichromium trioxide; Green Cinnabar; Ultramarine green; Green rouge; chromium (III) oxide Cr2O3; Chrome oxide green; casalis green; chromium sesquioxide; leaf green; oil green; green chromic oxide; Merck Chromium (III) oxide GPR (chromic oxide); Chromium Green Oxide M100; hematite, chromium green black (CAS RN: 68909-79-5); haematite, chromium green black; C.I. Constitution No. 77288; CPMA 3-05-3; Acanthus Green; Acqua Blue; Chromium Oxide Green Deep; Chromium Oxide Green (Opaque); Chromium Oxide Light; Chromium Oxid Green; Lamoriniere Green; Opaque Oxide of Chromium; Oxide of Chromium; Oxide of Chromium Green; chromium oxide green; Grades: GN,GX,GN-M,GP & GM |
| Chemical formula              | Cr2O3  |
| Other means of identification | Not Available  |
| CAS number                    | 1308-38-9  |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | <p>Pigments are defined as "colored, black, white, or fluorescent particulate organic or inorganic solids which usually are insoluble in, and essentially physically and chemically unaffected by, the vehicle or substrate in which they are incorporated" They are extremely insoluble in water. They alter appearance by selective absorption and/or by scattering of light. Pigments are usually dispersed in vehicles or substrates for application, as for instance in the manufacture of inks, paints, plastics, or other polymeric materials. Pigments retain a crystal or particulate structure throughout the colouration process</p> <p>Catalyst</p> <p>Used as a green pigment in paints, plastics, concrete based building products, artist colours, ceramics and glass. used as a green pigment in paints, plastics, concrete based building products, artist colours, ceramics and glass. In cosmetics. hair dyes. Cr-Fe catalyst in high temperature shift reactions in the petroleum industry. Refractory material used as a structural material (insulation linings and vessels) in high temperature and corrosive environments in many industries. Chromium in the form of chromium oxide is frequently used as a refractory material</p> |
|--------------------------|--|

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

|                         |   |
|-------------------------|---|
| Registered company name | ALPHA CHEMICALS PTY LTD                         |
| Address                 | 4 ALLEN PLACE WETHERILL PARK NSW 2099 Australia |
| Telephone               | 61 (0)2 9982 4622                               |
| Fax                     | Not Available                                   |
| Website                 | ~   |
| Email                   | shane@alphachem.com.au                          |

#### Emergency telephone number

|                                   |                         |
|-----------------------------------|-------------------------|
| Association / Organisation        | ALPHA CHEMICALS PTY LTD |
| Emergency telephone numbers       | 61 (0)418 237 771       |
| Other emergency telephone numbers | Not Available           |

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.


#### ChemWatch Hazard Ratings

|              | Min | Max |              |
|--------------|-----|-----|--------------|
| Flammability | 0   |     |              |
| Toxicity     | 2   |     | 0 = Minimum  |
| Body Contact | 0   |     | 1 = Low      |
| Reactivity   | 0   |     | 2 = Moderate |
| Chronic      | 2   |     | 3 = High     |
|              |     |     | 4 = Extreme  |

**CHROME OXIDE, GREEN**

|                           |   |
|---------------------------|---|
| <b>Poisons Schedule</b>   | Not Applicable  |
| <b>Classification [1]</b> | Acute Toxicity (Inhalation) Category 4, Skin Sensitizer Category 1, Acute Toxicity (Oral) Category 4, Acute Aquatic Hazard Category 3 |
| <b>Legend:</b>            | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI   |

**Label elements**

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

**Hazard statement(s)**

|             |                                      |
|-------------|--------------------------------------|
| <b>H332</b> | Harmful if inhaled.                  |
| <b>H317</b> | May cause an allergic skin reaction. |
| <b>H302</b> | Harmful if swallowed.                |
| <b>H402</b> | Harmful to aquatic life.             |

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                            |
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |
| <b>P261</b> | Avoid breathing dust/fumes.  |
| <b>P270</b> | Do not eat, drink or smoke when using this product.                        |
| <b>P273</b> | Avoid release to the environment.  |
| <b>P272</b> | Contaminated work clothing should not be allowed out of the workplace.     |

**Precautionary statement(s) Response**

|                  |  |
|------------------|--|
| <b>P321</b>      | Specific treatment (see advice on this label).   |
| <b>P363</b>      | Wash contaminated clothing before reuse.   |
| <b>P302+P352</b> | IF ON SKIN: Wash with plenty of water and soap.  |
| <b>P333+P313</b> | If skin irritation or rash occurs: Get medical advice/attention.                                 |
| <b>P301+P312</b> | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.                       |
| <b>P304+P340</b> | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| <b>P330</b>      | Rinse mouth.   |

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

|             |  |
|-------------|--|
| <b>P501</b> | 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**

| CAS No    | %[weight] | Name                |
|-----------|-----------|---------------------|
| 1308-38-9 | >99       | CHROME OXIDE, GREEN |

**Mixtures**

See section above for composition of Substances

**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>▶ Wash out immediately with fresh 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>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>   |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> </ul>   |

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|                  |   |
|------------------|---|
|                  | <ul style="list-style-type: none"> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>  |
| <b>Ingestion</b> | <ul style="list-style-type: none"> <li>▶ <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 by the patient's condition.</li> <li>▶ 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.</li> <li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> |

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

Treat symptomatically.

## SECTION 5 Firefighting measures

### Extinguishing media

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

### Special hazards arising from the substrate or mixture

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

### 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 breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | Decomposition may produce toxic fumes of:<br>metal oxides<br>May emit poisonous fumes.<br>May emit corrosive fumes.   |
| <b>HAZCHEM</b>               | 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

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>  |
| <b>Major Spills</b> | Moderate hazard. <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.</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> | ▶ Avoid all personal contact, including inhalation. |
|----------------------|---|

Continued...

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|                          |   |
|--------------------------|---|
|                          | <ul style="list-style-type: none"> <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 allow material to contact humans, exposed food or food utensils.</b></li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> </ul>  |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul> |

### Conditions for safe storage, including any incompatibilities

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>   |
| <b>Storage incompatibility</b> | <p>Derivative of electropositive metal.</p> <ul style="list-style-type: none"> <li>▶ <b>WARNING:</b> Avoid or control reaction with peroxides. All <i>transition metal</i> peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.</li> <li>▶ The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.</li> <li>▶ Avoid reaction with borohydrides or cyanoborohydrides</li> <li>▶ Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.</li> <li>▶ These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.</li> <li>▶ The state of subdivision may affect the results.</li> </ul> <p>Reacts vigorously with oxygen difluoride and lithium.</p> |

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

| Source                       | Ingredient          | Material name                    | TWA       | STEL          | Peak          | Notes         |
|------------------------------|---------------------|----------------------------------|-----------|---------------|---------------|---------------|
| Australia Exposure Standards | CHROME OXIDE, GREEN | Chromium (III) compounds (as Cr) | 0.5 mg/m3 | Not Available | Not Available | Not Available |


#### Emergency Limits

| Ingredient          | Material name  | TEEL-1    | TEEL-2   | TEEL-3    |
|---------------------|--|-----------|----------|-----------|
| CHROME OXIDE, GREEN | Chromic oxide; (Chromium(III) oxide; Chromium sesquioxide) | 2.2 mg/m3 | 24 mg/m3 | 140 mg/m3 |

| Ingredient          | Original IDLH | Revised IDLH  |
|---------------------|---------------|---------------|
| CHROME OXIDE, GREEN | 25 mg/m3      | 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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required.</p> |
| <b>Personal protection</b>              |   |
| <b>Eye and face protection</b>          | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.</li> </ul>   |
| <b>Skin protection</b>                  | See Hand protection below  |
| <b>Hands/feet protection</b>            | <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> </ul>   |

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|                         |  |
|-------------------------|--|
|                         | <ul style="list-style-type: none"> <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.</p> <ul style="list-style-type: none"> <li>▶ Polyethylene gloves</li> </ul> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> <li>▶ fluoroacoutchouc.</li> <li>▶ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p> |
| <b>Body protection</b>  | See Other protection below   |
| <b>Other protection</b> | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>   |

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | P1<br>Air-line*      | -<br>-               | PAPR-P1<br>-           |
| up to 50 x ES                      | Air-line**           | P2                   | PAPR-P2                |
| up to 100 x ES                     | -                    | P3                   | -                      |
|                                    |                      | Air-line*            | -                      |
| 100+ x ES                          | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

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)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

|   |  |  |                |
|---|--|--|----------------|
| <b>Appearance</b>                                   | Green to black powder. Odourless. Principally Cr <sub>2</sub> O <sub>3</sub> . Practically insoluble in water. Bulk density 800 kg/m <sup>3</sup> . An inorganic pigment that is the reaction product of high temperature calcination of principally chromium (III) oxide forming a crystalline haematite. Its composition may include any one or a combination of the modifiers Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , or Mn <sub>2</sub> O <sub>3</sub> . Cr-Fe catalysts are prepared by mixing an aqueous solution of Cr- and Fe-salts and precipitating the metals as hydroxides with ammonia. |  |                |
| <b>Physical state</b>                               | Divided Solid  | <b>Relative density (Water = 1)</b>            | 5.21           |
| <b>Odour</b>  | Not Available  | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available  | <b>Auto-ignition temperature (°C)</b>          | Not available. |
| <b>pH (as supplied)</b>                             | Not Applicable   | <b>Decomposition temperature</b>               | Not available. |
| <b>Melting point / freezing point (°C)</b>          | 2266+/-25  | <b>Viscosity (cSt)</b>                         | Not Applicable |
| <b>Initial boiling point and boiling range (°C)</b> | 4000   | <b>Molecular weight (g/mol)</b>                | 151.99         |
| <b>Flash point (°C)</b>                             | Not Applicable   | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Applicable   | <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 Applicable |
| <b>Lower Explosive Limit (%)</b>                    | Not Applicable   | <b>Volatile Component (%vol)</b>               | Nil            |
| <b>Vapour pressure (kPa)</b>                        | Negligible   | <b>Gas group</b>                               | Not Available  |

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|                                 |                |                              |               |
|---------------------------------|----------------|------------------------------|---------------|
| <b>Solubility in water</b>      | Immiscible     | <b>pH as a solution (1%)</b> | 9.1           |
| <b>Vapour density (Air = 1)</b> | Not Applicable | <b>VOC g/L</b>               | Not Available |

**SECTION 10 Stability and reactivity**

|   |  |
|---|--|
| <b>Reactivity</b>                         | See section 7  |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <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>             | <p>Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> |                   |
| <b>Ingestion</b>           | <p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract</p>   |                   |
| <b>Skin Contact</b>        | <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>  |                   |
| <b>Eye</b>                 | <p>Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.</p>  |                   |
| <b>Chronic</b>             | <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung. Chromium (III) is an essential trace mineral. Chronic exposure to chromium (III) irritates the airways, malnourishes the liver and kidneys, causes fluid in the lungs, and adverse effects on white blood cells, and also increases the risk of developing lung cancer.</p>   |                   |
| <b>CHROME OXIDE, GREEN</b> | <b>TOXICITY</b>  | <b>IRRITATION</b> |
|                            | Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>  | Not Available     |
| <b>Legend:</b>             | <p>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</p>  |                   |

|                            |  |  |  |
|----------------------------|--|--|--|
| <b>CHROME OXIDE, GREEN</b> | <p>The following information refers to contact allergens as a group and may not be specific to this product. 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. On skin and inhalation exposure, chromium and its compounds (except hexavalent) can be a potent sensitiser, as particulates. Studies show that they have a complex toxicity mechanism with hexavalent chromium associated with an increased risk of lung damage and respiratory cancers (primarily bronchogenic and nose cancers). However, there is no evidence that elemental, divalent, or trivalent chromium compounds causes cancer or genetic toxicity. The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. Substance has been investigated as a mutagen in bacteria and rodents and a tumorigen by intraperitoneal, intrapleural and intratracheal administration to rats.</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>        | ✗ |

**CHROME OXIDE, GREEN**

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

**SECTION 12 Ecological information**

**Toxicity**

|                            | Endpoint | Test Duration (hr) | Species                       | Value       | Source |
|----------------------------|----------|--------------------|-------------------------------|-------------|--------|
| <b>CHROME OXIDE, GREEN</b> | LC50     | 96                 | Fish                          | >0.001mg/L  | 2      |
|                            | EC50     | 72                 | Algae or other aquatic plants | >0.1481mg/L | 2      |
|                            | NOEC     | 96                 | Fish                          | 0.001mg/L   | 2      |

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Harmful to aquatic organisms.

For Metal:

Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.

Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals to more soluble ionic forms. Environmental processes may enhance bioavailability and may also be important in changing solubilities.

Aquatic/Terrestrial Fate: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. A metal ion is considered infinitely persistent because it cannot degrade further. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms. Ionic species may bind to dissolved ligands or sorb to solid particles in water.

For Chromium: Chromium is poorly absorbed by cells found in microorganisms, plants and animals. Hexavalent chromate anions are readily transported into cells and toxicity is closely linked to the higher oxidation state.

Ecotoxicity - Toxicity in Aquatic Organisms: Chromium is harmful to aquatic organisms in very low concentrations. Organisms consumed by fish species are very sensitive to low levels of chromium. Chromium is toxic to fish although less so in warm water. Marked decreases in toxicity are found with increasing pH or water hardness; changes in salinity have little if any effect. Chromium appears to make fish more susceptible to infection. High concentrations can damage and/or accumulate in various fish tissues and in invertebrates such as snails and worms.

For chromium:

Aquatic Fate - Most chromium released into water will be deposited in the sediment. A small percentage of chromium can be found in soluble and insoluble forms with soluble chromium making up a very small percentage of the total chromium. Most of the soluble chromium is present as chromium (VI) and soluble chromium (III) complexes. In the aquatic phase, chromium (III) occurs mostly as suspended solids adsorbed onto clayish materials, organics, or iron oxide present in water. Soluble forms and suspended chromium can undergo intramedia transport. Chromium (VI) in water will eventually be reduced to chromium (III) by organic matter in the water. This process may be slower depending on the type and amount of organic material present and on the redox condition of the water. The reaction was generally faster under anaerobic than aerobic conditions.

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

Not ecologically harmful to bacteria at <5 g/l; to fish up to 1 g/l. g/l;="" to="" fish="" up="" to="" 1=""> Separates readily in water treatment processes.

**Persistence and degradability**

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

**Bioaccumulative potential**

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

**Mobility in soil**

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

**SECTION 13 Disposal considerations**

**Waste treatment methods**

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Bury residue in an authorised landfill.</li> </ul> |
|-------------------------------------|--|



▸ Recycle containers if possible, or dispose of in an authorised landfill.

## 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

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

Not Applicable

## SECTION 15 Regulatory information

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

CHROME OXIDE, GREEN is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

### National Inventory Status

| National Inventory             | Status  |
|--------------------------------|---|
| Australia - AIIC               | Yes   |
| Australia - Non-Industrial Use | No (CHROME OXIDE, GREEN)  |
| Canada - DSL                   | Yes   |
| Canada - NDSL                  | No (CHROME OXIDE, GREEN)  |
| 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 - ARIPS                 | 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 and are not exempt from listing (see specific ingredients in brackets) |

## SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 13/03/2019 |
| Initial Date  | 09/04/2002 |

### SDS Version Summary

| Version | Issue Date | Sections Updated   |
|---------|------------|--|
| 6.1.1.1 | 23/05/2014 | Advice to Doctor, Appearance, Fire Fighter (fire/explosion hazard), Physical Properties, Storage (storage incompatibility), Storage (storage requirement), Supplier Information, Synonyms, Use |
| 7.1.1.1 | 13/03/2019 | Expiration. Review and Update  |

### 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

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

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