SECTION 1 IDENTIFICATION

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Storm System Wood Brightener/Neutralizer 10310</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Not Available</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Corrosive liquid, acidic, organic, n.o.s.</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Recommended use of the chemical and restrictions on use

| Relevant identified uses     | Wood brightener                                |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

<table>
<thead>
<tr>
<th>Registered company name</th>
<th>ICP Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>150 Dascomb Road Massachusetts Andover United States</td>
</tr>
<tr>
<td>Telephone</td>
<td>978-623-9980</td>
</tr>
<tr>
<td>Fax</td>
<td>Not Available</td>
</tr>
<tr>
<td>Website</td>
<td>Not Available</td>
</tr>
<tr>
<td>Email</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Emergency phone number

<table>
<thead>
<tr>
<th>Association / Organisation</th>
<th>Chemtel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone numbers</td>
<td>1-800-255-3924</td>
</tr>
<tr>
<td>Other emergency telephone numbers</td>
<td>1-813-246-0585</td>
</tr>
</tbody>
</table>

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

| Classification               | Skin Corrosion/Irritation Category 1C, Serious Eye Damage Category 1, Metal Corrosion Category 1 |

Label elements

<table>
<thead>
<tr>
<th>Hazard pictogram(s)</th>
<th><img src="image" alt="" /></th>
</tr>
</thead>
</table>

| SIGNAL WORD       | DANGER     |

Hazard statement(s)

- **H314**: Causes severe skin burns and eye damage.
- **H290**: May be corrosive to metals.

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

- **P100**: Do not breathe dust/fume/gas/mist/vapours/spray.
- **P280**: Wear protective gloves/protective clothing/eye protection/face protection.

Continued...
Precautionary statement(s) Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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.

Precautionary statement(s) Storage

P405 Store locked up.

Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>6153-56-6</td>
<td>5-15</td>
<td>oxalic acid dihydrate</td>
</tr>
<tr>
<td>77-92-9</td>
<td>1-10</td>
<td>citric acid</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- 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.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

Inhalation
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patent down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.
- Transport to hospital, or doctor, without delay.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- 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.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.
- This must definitely be left to a doctor or person authorised by him/her.

Ingestion
- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

- Effective therapy against burns from oxalic acid involves replacement of calcium.
- Intravenous oxalic acid is substantially excreted (88% - 90%) in the urine within 36 hours.

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 dissicating 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.

Continued...
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]

**Treatment must be prompt.**

- Give immediately by mouth, a dilute solution of any soluble calcium salt: calcium lactate, lime water, finely pulverised chalk or plaster suspended in a large volume of water or milk. Large amounts of calcium are required to inactivate oxalate by precipitating it as the insoluble calcium salt. **DO NOT** give an emetic drug.
- Perform gastric lavage carefully or not at all if severe mucosal injury is evident. Dilute lime water (calcium hydroxide) makes a good lavage fluid if used in large quantity.
- Administer a slow intravenous injection of 10-20 ml of calcium gluconate (10% solution) or of calcium chloride (5% solution). This injection may be repeated frequently to prevent hypocalcaemic tetany. Calcium gluconate (10 m) may also be given intramuscularly every few hours. Calcium compounds are never given subcutaneously; even the intramuscular route is hazardous in infants because of the incidence of sloughing.
- In severe cases parathyroid extract (100 USP units) should be given intramuscularly.
- Morphine may be necessary to control pain.
- Treat shock by cautious intravenous injection of isotonic saline solution. Check for metabolic acidosis and infuse sodium bicarbonate if necessary.
- Watch for oedema of the glottis late formation of oesophageal stricture.
- Useful demulcents by mouth include milk of magnesia, bismuth subcarbonate, and mineral oil.
- Prophylactic and therapeutic measures in anticipation of renal damage.

Atropine may be necessary to counteract the effects of parasympathomimetic stimulation. Useful antispasmodics include hyoscine and codeine.

Waste may be administered orally, by enema, or by rectum if poisoning is severe. Calcium is not given by other routes.

- Prophylactic and therapeutic measures in anticipation of renal damage.
- Useful demulcents by mouth include milk of magnesia, bismuth subcarbonate, and mineral oil.
- Prophylactic and therapeutic measures in anticipation of renal damage.
- Useful antispasmodics include hyoscine and codeine.

Waste may be administered orally, by enema, or by rectum if poisoning is severe. Calcium is not given by other routes.

**SECTION 5 FIRE-FIGHTING MEASURES**

**Extinguishing media**

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

**Special hazards arising from the substrate or mixture**

| Fire Incompatibility | Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |

**Special protective equipment and precautions for fire-fighters**

**Fire Fighting**

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- May emit acid smoke and corrosive fumes.

Combustion products include:

- amp:43cw
- carbon dioxide (CO2)
- other pyrolysis products typical of burning organic material.

**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**

<table>
<thead>
<tr>
<th>Minor Spills</th>
<th>Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Check regularly for spills and leaks.</td>
</tr>
<tr>
<td></td>
<td>Clean up all spills immediately.</td>
</tr>
<tr>
<td></td>
<td>Avoid breathing vapours and contact with skin and eyes.</td>
</tr>
<tr>
<td></td>
<td>Control personal contact with the substance, by using protective equipment.</td>
</tr>
<tr>
<td></td>
<td>Contain and absorb spill with sand, earth, inert material or vermiculite.</td>
</tr>
<tr>
<td></td>
<td>Wipe up.</td>
</tr>
<tr>
<td></td>
<td>Place in a suitable, labelled container for waste disposal.</td>
</tr>
</tbody>
</table>

[Ellenhorn and Barceloux: Medical Toxicology]
### Major Spills

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue (see Section 13 for specific agent).
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

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

### SECTION 7 HANDLING AND STORAGE

#### Precautions for safe handling

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

#### Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.

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

- **DO NOT** use aluminium or galvanised containers
- Check regularly for spills and leaks
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packed as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.
- For low viscosity materials
  - Drums and jerricans must be of the non-removable head type.
  - Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):
  - Removable head packaging;
  - Cans with friction closures and low pressure tubes and cartridges may be used.
- 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.

#### Suitable container

- Oxalic acid (and its dihydrate):
  - React violently with strong oxidisers, bromine, furfuryl alcohol, hydrogen peroxide (90%), phosphorous trichloride, silver powders
  - Reacts explosively with chlorites and hypochlorites
  - Mixture with some silver compounds form explosive salts of silver oxalate
  - Is incompatible with caustics and alkalis, urea, alkaline metals and steel
  - Attacks polyvinyl alcohol and acetal plastics
  - Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.
  - Avoid strong bases.
  - Segregate from alkalis, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

<table>
<thead>
<tr>
<th>OCCUPATIONAL EXPOSURE LIMITS (OEL)</th>
<th>INGREDIENT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Ingredient</td>
</tr>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
<td>oxalic acid dihydrate</td>
</tr>
<tr>
<td>US ACGIH Threshold Limit Values (TLV)</td>
<td>oxalic acid dihydrate</td>
</tr>
</tbody>
</table>
### Exposure controls

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

The basic types of engineering controls are:

- **Process controls** which involve changing the way a job activity or process is done to reduce the risk.
- **Enclosure and/or isolation of emission source** which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
- **Local exhaust ventilation** usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.
- **Ventilation** can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.

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

#### Appropriate engineering controls

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

Within each range the appropriate value depends on:

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

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to the particular process and chemical or contaminant in use. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

### Personal protection

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. (CDC NIOSH Current Intelligence Bulletin 59) [AS/NZS 1336 or national equivalent]

### Eye and face protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

### Skin protection

See Hand protection below

### Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

### Body protection

See Other protection below

### Other protection

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Not Available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH (as supplied)</td>
<td>2</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Initial boiling point and</td>
<td>100</td>
</tr>
<tr>
<td>boiling range (°C)</td>
<td></td>
</tr>
<tr>
<td>Flash point (°C)</td>
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</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability</td>
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</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Vapour pressure (kPa)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Solubility in water (g/L)</td>
<td>Immiscible</td>
</tr>
<tr>
<td>Vapour density (Air = 1)</td>
<td>1.08</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
<td>Not Available</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not Available</td>
</tr>
<tr>
<td>Viscosity (cSt)</td>
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</tr>
<tr>
<td>Molecular weight (g/mol)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Taste</td>
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</tr>
<tr>
<td>Explosive properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
<td>Not Available</td>
</tr>
<tr>
<td>VOC g/L</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

SECTION 10 STABILITY AND REACTIVITY

Reactivity
- See section 7

Chemical stability
- Contact with alkaline material liberates heat

Possibility of hazardous reactions
- See section 7

Conditions to avoid
- See section 7

Incompatible materials
- See section 7

Hazardous decomposition products
- See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled
- The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
- Inhalation of oxalic acid dusts or vapours can cause ulceration of the linings of the nose and throat, nosebleed, headache and nervousness. The airborne dust behaves as a strong acid producing severe local burns of the linings of the nose and throat.
- Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.
- Inhalation of soluble oxalate produces irritation of the respiratory tract. Effects on the body may include protein in the urine, ulceration of the mucous membranes, headache, nervousness, cough, vomiting, severe weight loss, back pain (due to kidney injury) and weakness.

Ingestion
- 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.
- Ingestion of 5 grams has caused death within hours. It is a poison which affects the central nervous system and kidney function. Low doses may cause low blood calcium concentration.
- 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.

Skin Contact
- Skin contact with the material may be harmful; systemic effects may result following absorption.
- The material can produce chemical burns following direct contact with the skin.
- Solutions of 5% to 10% oxalic acid are irritating to the skin after prolonged contact; early gangrene may occur after hand immersion in oxalate solutions.
- 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.
- Oxalate ion is an irritant, and may cause skin irritation. Following contact, skin lesions may develop.

Continued...
OXALIC ACID DIHYDRATE

For acid mists, aerosols, vapours
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). The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

*C* Supreme Resources MSDS

CITRIC ACID

For citric acid (and its inorganic citrate salts)
Based on extensive animal testing data and on human experience, citric acid ahs low acute toxicity. Citric acid is not suspected of causing cancer, birth defects or reproductive toxicity. Further, it does not cause mutations.

OXALIC ACID DIHYDRATE & CITRIC ACID

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.

OXALIC ACID DIHYDRATE & CITRIC ACID

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

### Acute Toxicity

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irritation/Corrosion</td>
<td>✔</td>
</tr>
<tr>
<td>Serious Eye Damage/Irritation</td>
<td>✔</td>
</tr>
<tr>
<td>Respiratory or Skin sensitisation</td>
<td>✔</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Carcinogenicity

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductivity</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Aspiration Hazard

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Legend:

- ✔: Data available to make classification
- ✗: Data not available for classification
- ❔: Data not available to make classification

### SECTION 12 ECOLOGICAL INFORMATION

#### Toxicity

<table>
<thead>
<tr>
<th>Storm System Wood Brightener/Neutralizer 10310</th>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>oxalic acid dihydrate</th>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC10</td>
<td>24</td>
<td>Algae or other aquatic plants</td>
<td>=220mg/L</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

#### Notes:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.
2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

---

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.

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. It applied to the eyes, this material causes severe eye damage.

Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithela generally recover rapidly and completely.

Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. 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.

Chronic exposure to oxalates may result in circulatory failure or nervous system irregularities, the latter due to calcium binding to oxalate. Prolonged and severe exposure can cause chronic cough, protein in the urine, vomiting, pain in the back, and gradual weight loss and weakness.

### Storm System Wood Brightener/Neutralizer 10310

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

#### oxalic acid dihydrate

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: 7500 mg/kg[^2]</td>
<td>Eye (rabbit): 250 mg/24 h - SEVERE *</td>
</tr>
</tbody>
</table>

#### citric acid

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermal (rat) LD50: &gt;2000 mg/kg[^1]</td>
<td>Eye (rabbit): 0.75 mg/24h-SEVERE</td>
</tr>
<tr>
<td>Oral (rat) LD50: 3000 mg/kg[^2]</td>
<td>Skin (rabbit): 500 mg/24 h - mild</td>
</tr>
</tbody>
</table>

---

### Legend:

- *: Value obtained from manufacturer's SDS.
Ecotoxicity: The tolerance of water organisms towards pH margin and variation is diverse. Recommended pH values for test species listed in OECD guidelines are between 6.0 and almost 9. Acute testing with fish showed 96h-LC50 at about pH 3.5.

For Oxalic Acid and Oxalate Salts:
- Atmospheric Fate: If released to the atmosphere, removal from air via wet deposition, dry deposition, and photolysis is likely to occur.
- Terrestrial Fate: If released to soil, oxalic acid at pH 5 - 9 will be in the form of the oxalate ion and is expected to leach in soil. Photolysis and biodegradation are expected to be an important fate processes. It has not been determined whether the oxalate ion will adsorb to sediment or soil more strongly than its estimated Koc value indicates.
- Aquatic Fate: If released to water, oxalic acid / oxalates will not volatilize, adsorb to sediment, bioconcentrate in aquatic organisms, oxidize or hydrolyze. Oxalic acid, however, may act as a leaching agent for those metals that form soluble oxalate complexes, including aluminum and iron. Oxalic acid is not expected to bioconcentrate in aquatic organisms. The predominant aquatic fate processes are expected to be photolysis in surface waters, aerobic and anaerobic biodegradation.

Ecotoxicity: Exposure of the general population to oxalic acid / oxalates is expected to occur through consumption of foods in which it is naturally contained, inhalation of contaminated air, and consumption of contaminated groundwater. When assessing the overall exposure to oxalic acid, the residues of ethylene glycol and ethylene oxide must be considered. Metabolites are not expected to contribute significantly to total exposure.

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

DO NOT discharge into sewer or waterways.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>oxalic acid dihydrate</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>citric acid</td>
<td>LOW</td>
<td></td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>oxalic acid dihydrate</td>
<td>LOW (LogKOW = -1.7365)</td>
</tr>
<tr>
<td>citric acid</td>
<td>LOW (LogKOW = -1.64)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>oxalic acid dihydrate</td>
<td>HIGH (KOC = 1.895)</td>
</tr>
<tr>
<td>citric acid</td>
<td>LOW (KOC = 10)</td>
</tr>
</tbody>
</table>

### SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.
- Otherwise:
  - 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.
  - Where possible retain label warnings and SDS and observe all notices pertaining to the product.
  - Recycle wherever possible.
  - 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.
  - 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
  - Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.

### SECTION 14 TRANSPORT INFORMATION

#### Labels Required

<table>
<thead>
<tr>
<th>Marine Pollutant</th>
<th>NO</th>
</tr>
</thead>
</table>

**Land transport (DOT)**
UN number 3265
UN proper shipping name Corrosive liquid, acidic, organic, n.o.s.

Transport hazard class(es)

- Class 8
- Subrisk Not Applicable

Packing group III

Environmental hazard Not Applicable

Special precautions for user

- Hazard Label 8
- Special provisions 386, IB3, T7, TP1, TP28

Air transport (ICAO-IATA / DGR)

UN number 3265
UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

Transport hazard class(es)

- ICAO/IATA Class 8
- ICAO / IATA Subrisk Not Applicable
- ERG Code 8L

Packing group III

Environmental hazard Not Applicable

Special precautions for user

- Special provisions A3A803
- Cargo Only Packing Instructions 866
- Cargo Only Maximum Qty / Pack 60 L
- Passenger and Cargo Packing Instructions 862
- Passenger and Cargo Maximum Qty / Pack 5 L
- Passenger and Cargo Limited Quantity Packing Instructions YB41
- Passenger and Cargo Limited Maximum Qty / Pack 1 L

Sea transport (IMDG-Code / GGVSee)

UN number 3265
UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. *

Transport hazard class(es)

- IMDG Class 8
- IMDG Subrisk Not Applicable

Packing group III

Environmental hazard Not Applicable

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

SECTION 15 REGULATORY INFORMATION

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

OXALIC ACID DIHYDRATE(6153-56-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

- US - Alaska Limits for Air Contaminants
- US - California Permissible Exposure Limits for Chemical Contaminants
- US - Hawaii Air Contaminant Limits
- US - Idaho - Limits for Air Contaminants
- US - Massachusetts - Right To Know Listed Chemicals
- US - Michigan Exposure Limits for Air Contaminants
- US - Minnesota Permissible Exposure Limits (PELS)
- US - Oregon Permissible Exposure Limits (Z-1)
- US - Pennsylvania - Hazardous Substance List
- US - Rhode Island Hazardous Substance List
- US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
- US - Washington Permissible exposure limits of air contaminants
- US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
- US ACGIH Threshold Limit Values (TLV)
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Levels (PELS) - Table Z1
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate (acute) health hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed (chronic) health hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory Status

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Y</td>
</tr>
<tr>
<td>Canada</td>
<td>Y</td>
</tr>
<tr>
<td>Canada</td>
<td>N (citric acid; oxalic acid dihydrate)</td>
</tr>
<tr>
<td>China</td>
<td>Y</td>
</tr>
<tr>
<td>Europe</td>
<td>Y</td>
</tr>
<tr>
<td>Japan</td>
<td>N (citric acid; oxalic acid dihydrate)</td>
</tr>
<tr>
<td>Korea</td>
<td>Y</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Y</td>
</tr>
<tr>
<td>Philippines</td>
<td>Y</td>
</tr>
<tr>
<td>USA</td>
<td>Y</td>
</tr>
</tbody>
</table>

Legend:

Y = All ingredients are on the inventory
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

CONTACT POINT

**PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES**

Other information

Ingredients with multiple cas numbers

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>citric acid</td>
<td>77-92-9, 1192555-95-5, 12262-73-6, 136108-93-5, 245654-34-6, 43136-35-2, 623158-96-3, 856568-15-5, 878903-72-1, 890704-54-8, 896506-46-0, 906507-37-7</td>
</tr>
</tbody>
</table>

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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