SAFETY DATA SHEET

Preparation Date: 5/11/2015  Revision Date: 12/5/2017  Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: O1025
Product Name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS

Other means of identification

Synonyms: Ethanedioic Acid, dihydrate
CAS #: 6153-56-6
RTECS #: KI1600000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

<table>
<thead>
<tr>
<th>Acute toxicity - Oral</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
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<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
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<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>100</td>
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</table>

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed

Symptoms
Severe skin and eye irritation or burns
Causes digestive (gastrointestinal) tract irritation
May cause gastrointestinal (digestive) tract burns
May cause corneal injury
May affect the cardiovascular system
May cause hypermotility, diarrhea
Abdominal pain
bloody stool
Burning pain in the mouth, throat, esophagus, stomach. Ulceration/burning of the mouth, throat, esophagus, stomach
May cause purging
Central nervous system effects
May affect the liver
It may affect the kidneys
It may affect the thyroid

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media:
No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide.

Specific hazards: May be combustible at high temperatures.

Product code: O1025 Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up: Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Alkalis
Bases
Metals
Oxidizing agents
Chlorites, hypochlorites, silver, silver compounds, furfuryl alcohol

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
### United States

<table>
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<tr>
<th>Components</th>
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<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
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<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>1 mg/m³ TWA (for Oxalic acid, anhydrous)</td>
<td>2 mg/m³ STEL 1 mg/m³ TWA (for Oxalic acid, anhydrous)</td>
<td>2 mg/m³ STEL 1 mg/m³ TWA</td>
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### Canada

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<th>Canada - British Columbia</th>
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<td>Oxalic Acid, Dihydrate</td>
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<td>2 mg/m³ STEL 1 mg/m³ TWA (for Oxalic acid, anhydrous)</td>
<td>2 mg/m³ STEL 1 mg/m³ TWA (for Oxalic acid, anhydrous)</td>
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### Australia and Mexico

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<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
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<td>None</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls

**Engineering measures to reduce exposure:** Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Goggles
- **Skin and body protection:** Chemical resistant apron, Gloves, Long sleeved clothing
- **Respiratory protection:** Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds), inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Solid
- **Appearance:** Crystalline. Crystals. Crystalline powder.
- **Color:** Colorless. White.
- **Odor:**

**Product code:** O1025  **Product name:** OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
10. STABILITY AND REACTIVITY

Reactivity
Reactive with metals
Reactive with oxidizing agents
Reacts with strong bases
Reactive with alkalis

Chemical stability
Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization does not occur
Incompatible Materials: Alkalis
Bases
Metals
Oxidizing agents
Chlorites, hypochlorites, silver, silver compounds, furfuryl alcohol

Hazardous decomposition
No information available.

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

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<th>Oxalic Acid, Dihydrate</th>
<th>CAS-No.</th>
<th>6153-56-6</th>
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<td>LD50/oral/rat = 375 mg/kg Oral LD50 Rat</td>
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<td>LD50/oral/mouse = No information available</td>
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<tr>
<td>LD50/dermal/rabbit = No information available</td>
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<tr>
<td>LD50/dermal/rat = No information available</td>
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<tr>
<td>LC50/inhalation/rat = No information available</td>
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<td>Other LD50 or LC50 information = No information available</td>
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</table>

Product Information

LD50/oral/rat = VALUE- Acute Tox Oral = 375 mg/kg

LD50/oral/mouse = Value - Acute Tox Oral = No information available

LD50/dermal/rabbit VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat VALUE - Acute Tox Dermal = No information available

LC50/inhalation/rat VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes severe irritation and burns. Harmful if absorbed through skin.
Eye Contact: Causes severe eye irritation and possible burns. May cause conjunctivitis. May cause corneal damage.

Inhalation May cause respiratory tract irritation. Inhalation of oxalic acid may also cause digestive disturbances such as nausea and vomiting as well as affecting the nerves and urinary system and causing headache, muscular irritability, weakness, and albuminuria.

Ingestion Harmful if swallowed. Causes severe digestive tract irritation and possible burns. It may affect the cardiovascular system, and urinary system. Symptoms may include vomiting (often bloody or with coffee-ground appearance), diarrhea, bloody stool, hypermotility, abdominal pain, intense burning pain in the throat, esophagus, stomach, ulceration/burning of the mouth, esophagus, and stomach, severe purging, weak pulse, hypotension, cardic irregularities, cardiovascular collapse. Other symptoms may include convulsions, headache, twitching, tetany, stupor, coma, tingling of fingers and toes, muscular irritability. Renal damage, as evidenced by oliguria, albuminuria, hematuria, may occur because Oxalic acid can bind calcium to form calcium oxalate which is insoluble at physiological pH. The calcium oxalate formed might precipitate in the kidney tubules. Hypocalcemia may also occur, which is what may affect the function of the heart and nerves and cause the above cardiovascular and nervous system effects.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Skin: Prolonged or repeated exposure may cause localized pain and cyanosis of the fingers, and even gangrenous changes. This has occurred on the hands of people working with oxalic acid solutions without rubber gloves. Prolonged or repeated contact with oxalic acid can also cause a skin rash, pain, redness, blisters, and slow healing ulcers. Ingestion and Inhalation: Repeated or prolonged ingestion and inhalation may affect metabolism/appetite resulting in weight loss. Inhalation of dust over a long period of time may result in respiratory tract inflammation. Ingestion of oxalic acid over a long period of time may cause depressed thyroid function, and kidney damage. It may also affect the liver and blood.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
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<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
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<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
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</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)
IARC (International Agency for Research on Cancer)
NTP (National Toxicology Program)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
Reproductive Effects: May cause adverse reproductive effects based on animal data. There is limited evidence that Oxalic acid may damage the male reproductive system (including decreasing the sperm count) in animals. No information on reproductive toxicity effects on humans was found.

Developmental Effects: May cause adverse developmental effects based on animal data. There is limited evidence that Oxalic acid may damage the developing fetus in animals. No information on developmental toxicity effects on humans was found.

Teratogenic Effects: No information available.

Specific Target Organ Toxicity

STOT - single exposure: Respiratory system.
STOT - repeated exposure: May cause damage to organs through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products: Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal.

<table>
<thead>
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<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>None</td>
<td>None</td>
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</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN3261
Proper Shipping Name: Corrosive solid, acidic, organic, n.o.s. (Oxalic Acid, dihydrate)
Hazard Class: 8
Subsidiary Class: No information available
Packing group: III
Emergency Response Guide Number: No information available
Marine Pollutant: No data available

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
**DOT RQ (lbs):**
No information available

**Special Provisions**
No Information available

**Symbol(s):**
[DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.

**Description:**
UN3261, Corrosive solid, acidic, organic, n.o.s., 8, PG III

**TDG (Canada)**

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<td><strong>Proper Shipping Name:</strong></td>
<td>Corrosive solid, acidic, organic, n.o.s. (oxalacetic acid)</td>
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<td><strong>Hazard Class:</strong></td>
<td>8</td>
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<tr>
<td><strong>Subsidiary Risk:</strong></td>
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<td><strong>Packing Group:</strong></td>
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<tr>
<td><strong>Marine Pollutant</strong></td>
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**ADR**

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**IMO / IMDG**

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**RID**

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**ICAO**

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**IATA**

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**Product code:** O1025  
**Product name:** OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS (2)-844</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>Exempt from TSCA (8b) Inventory listing since it is a hydrate. However, the anhydrous form (CAS number 144-62-7) is listed on the TSCA (8b) Inventory</td>
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<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
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U.S. Regulations

*Oxalic Acid, Dihydrate*

**Pennsylvania RTK:** Present


**Chemicals Known to the State of California to Cause Cancer:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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<tr>
<td>Oxalic Acid, Dihydrate</td>
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**CERCLA/SARA**

<table>
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<th>Components</th>
<th>CAS-No.</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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</table>

**U.S. TSCA**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

**WHIMIS 2015 - GHS Classifications**

**WHIMIS 2015 Hazard Classification Information:** Not a dangerous product according to HPR classification criteria.

**Product code:** O1025  **Product name:** Oxalic Acid, Dihydrate, Crystal, Reagent, ACS
Component
Oxalic Acid, Dihydrate
6153-56-6 (100)

WHMIS 2015 Hazard Classification
Acute toxicity - Oral - Category 4: H302 Harmful if swallowed.
Skin corrosion/irritation - Category 2: H315 Causes skin irritation.
Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage.
Combustible Dust - Category 1: May form combustible dust concentrations in air (factors such as combustibility and explosiveness of dusts including composition and shape and size of particles could cause substance to belong to 'Combustible dust' hazard class)

Canada Hazardous Products Regulation
This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class
E Corrosive material

Components
WHMIS 1988
Oxalic Acid, Dihydrate

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
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<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA Schedule I - Toxic Substances</th>
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<tbody>
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<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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EU Classification

EU GHS - SV - CLP 1272/2008

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<tr>
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<th>CAS-No.</th>
<th>EU GHS - SV - CLP (1272/2008)</th>
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<tbody>
<tr>
<td>Oxalic Acid, Dihydrate</td>
<td>6153-56-6</td>
<td>No information</td>
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</table>

EU - CLP (1272/2008)

R-phrase(s)
R21/22 - Harmful in contact with skin and if swallowed.

S-phrase(s)
S24/25 - Avoid contact with skin and eyes.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
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</tbody>
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The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xn - Harmful.

Product code: O1025
Product name: OXALIC ACID, DIHYDRATE, CRYSTAL, REAGENT, ACS
Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet