

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Oxalic acid dihydrate

Product Number : 247537  
Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Corrosive, Teratogen

##### Target Organs

Kidney, Nerves., Blood, Eyes

##### GHS Classification

Acute toxicity, Oral (Category 4)  
Acute toxicity, Dermal (Category 4)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H302 + H312  
H314

Harmful if swallowed or in contact with skin  
Causes severe skin burns and eye damage.

Precautionary statement(s)

P280  
P305 + P351 + P338

Wear protective gloves/ protective clothing/ eye protection/ face protection.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER or doctor/ physician.

##### HMIS Classification

Health hazard: 3  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**

**Health hazard:** 3  
**Fire:** 0  
**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** Harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** Harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Ethanedioic acid  
Formula :  $C_2H_2O_4 \cdot 2H_2O$   
Molecular Weight : 126.07 g/mol

| Component                    | Concentration |
|------------------------------|---------------|
| <b>Oxalic acid dihydrate</b> |               |
| CAS-No. 6153-56-6            | -             |
| EC-No. 205-634-3             |               |
| Index-No. 607-006-00-8       |               |

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**4. FIRST AID MEASURES****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIREFIGHTING MEASURES****Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

| Components            | CAS-No.   | Value | Control parameters  | Basis  |
|-----------------------|---|-------|---------------------|--|
| Oxalic acid dihydrate | 6153-56-6                                       | TWA   | 1 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)  |
| Remarks               | Eye, skin, & Upper Respiratory Tract irritation |       |                     |  |
|                       |   | STEL  | 2 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)  |
|                       | Eye, skin, & Upper Respiratory Tract irritation |       |                     |  |
|                       |   | TWA   | 1 mg/m <sup>3</sup> | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|                       |   | STEL  | 2 mg/m <sup>3</sup> | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|                       |   | TWA   | 1 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|                       |   | TWA   | 1 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits   |
|                       |   | ST    | 2 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits   |

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Immersion protection**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

**Splash protection**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm  
Break through time: > 30 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **Appearance**

|        |             |
|--------|-------------|
| Form   | crystalline |
| Colour | colourless  |

### **Safety data**

|  |   |
|--|---|
| pH                                     | 1 at 126.1 g/l at 25 °C (77 °F)                         |
| Melting point/freezing point           | Melting point/range: 104 - 106 °C (219 - 223 °F) - lit. |
| Boiling point                          | no data available                                       |
| Flash point                            | no data available                                       |
| Ignition temperature                   | no data available                                       |
| Autoignition temperature               | no data available                                       |
| Lower explosion limit                  | no data available                                       |
| Upper explosion limit                  | no data available                                       |
| Vapour pressure                        | < 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F)               |
| Density                                | no data available                                       |
| Water solubility                       | ca.126.1 g/l at 20 °C (68 °F)                           |
| Partition coefficient: n-octanol/water | log Pow: -0.81  |
| Relative vapour density                | no data available                                       |
| Odour                                  | no data available                                       |
| Odour Threshold                        | no data available                                       |
| Evaporation rate                       | no data available                                       |

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## **10. STABILITY AND REACTIVITY**

### **Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

Avoid moisture.

**Materials to avoid**

Bases, Metals, Acid chlorides, Alkali metals

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50****Inhalation LC50**

no data available

**Dermal LD50****Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

Skin - rabbit - Mild skin irritation

**Serious eye damage/eye irritation**

Eyes - rabbit - Severe eye irritation

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

Genotoxicity in vitro - Not mutagenic in Ames Test.

Histidine reversion (Ames)

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Teratogenicity**

Possible risk of congenital malformation in the fetus.

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

|                   |   |
|-------------------|---|
| <b>Inhalation</b> | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| <b>Ingestion</b>  | Harmful if swallowed.   |
| <b>Skin</b>       | Harmful if absorbed through skin. Causes skin burns.  |
| <b>Eyes</b>       | Causes eye burns.   |

**Signs and Symptoms of Exposure**

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION****Toxicity**

|   |   |
|---|---|
| Toxicity to fish                                    | LC50 - Leuciscus idus (Golden orfe) - 160 mg/l - 48 h |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 137 mg/l - 48 h   |

**Persistence and degradability**

Biodegradability

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 3261 Class: 8 Packing group: III  
Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Oxalic acid dihydrate)  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 3261 Class: 8 Packing group: III EMS-No: F-A, S-B

Proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Oxalic acid dihydrate)  
Marine pollutant: No

**IATA**

UN number: 3261 Class: 8 Packing group: III  
Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Oxalic acid dihydrate)

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Corrosive, Teratogen

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

|                       | CAS-No.   | Revision Date |
|-----------------------|-----------|---------------|
| Oxalic acid dihydrate | 6153-56-6 | 1993-04-24    |

**Pennsylvania Right To Know Components**

|                       | CAS-No.   | Revision Date |
|-----------------------|-----------|---------------|
| Oxalic acid dihydrate | 6153-56-6 | 1993-04-24    |

**New Jersey Right To Know Components**

|                       | CAS-No.   | Revision Date |
|-----------------------|-----------|---------------|
| Oxalic acid dihydrate | 6153-56-6 | 1993-04-24    |

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION**

**Further information**

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