1. PRODUCT AND COMPANY IDENTIFICATION

- **Product name**: Oxalic acid
- **Product Number**: 75688
- **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., Irritant, Teratogen

- **Target Organs**
  Kidney, Nerves., Blood, Eyes

- **GHS Classification**
  Acute toxicity, Oral (Category 4)
  Acute toxicity, Dermal (Category 4)
  Serious eye damage (Category 1)

- **GHS Label elements, including precautionary statements**

  **Pictogram**

  ![Danger]

  **Signal word**: Danger

  **Hazard statement(s)**
  
  H302 + H312  Harmful if swallowed or in contact with skin
  H318  Causes serious eye damage.

  **Precautionary statement(s)**
  
  P280  Wear protective gloves/ eye protection/ face protection.
  P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **HMIS Classification**
  
  Health hazard: 2
  Chronic Health Hazard: *
  Flammability: 0
  Physical hazards: 0

- **NFPA Rating**
  
  Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation
May be harmful if inhaled. Causes respiratory tract irritation.

Skin
Harmful if absorbed through skin. Causes skin irritation.

Eyes
Causes eye irritation.

Ingestion
Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxalic acid</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>144-62-7</td>
</tr>
<tr>
<td>EC-No.</td>
<td>205-634-3</td>
</tr>
<tr>
<td>Index-No.</td>
<td>607-006-00-8</td>
</tr>
<tr>
<td>Concentration</td>
<td>90 - 100 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

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

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

In case of skin contact
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.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, 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. Moisture sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
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<tr>
<td>Oxalic acid</td>
<td>144-62-7</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
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<td>Eye, skin, &amp; Upper Respiratory Tract irritation</td>
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<tr>
<td></td>
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<td>TWA</td>
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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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, 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 and safety officer 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form crystalline
Colour white

Safety data
pH 1.3 at 9 g/l
Melting point/freezing point:
Melting point/range: 189.5 °C (373.1 °F) - dec.
Boiling point 157 °C (315 °F) at 1,013 hPa (760 mmHg)
Flash point no data available
Ignition temperature no data available
Auto-ignition 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 1.9 g/cm³ at 25 °C (77 °F)
Water solubility 108 g/l at 25 °C (77 °F) - soluble
Partition coefficient: n-octanol/water no data available
Relative vapour density no data available
Odour odourless
Odour Threshold no data available
Evaporation rate no data available

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
Metals, Alkali metals
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral - rat - female - 1,080 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - No skin irritation - OECD Test Guideline 404

Serious eye damage/eye irritation
Eyes - rabbit - Risk of serious damage to eyes. - 24 h - OECD Test Guideline 405

Respiratory or skin sensitisation
mouse - Does not cause skin sensitisation.

Germ cell mutagenicity
Genotoxicity in vitro - S. typhimurium - with and without metabolic activation - negative

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
Reproductive toxicity - mouse - Oral
Effects on Fertility: Other measures of fertility Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

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
Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic effects
no data available

Additional Information
Repeated dose toxicity - Lowest observed adverse effect level - 150 mg/kg
RTECS: RO2450000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish
static test LC50 - Leuciscus idus melanotus - 160 mg/l - 48 h
static test LC50 - Leuciscus idus melanotus - 325 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates
Immobilization EC50 - Daphnia magna (Water flea) - 162.2 mg/l - 48 h
Method: OECD Test Guideline 202

Persistence and degradability
Biodegradability aerobic
Result: 89 % - Readily biodegradable.

Bioaccumulative potential
no data available
Mobility in soil
no data available
PBT and vPvB assessment
no data available
Other adverse effects
no data available

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.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Irritant, 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

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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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.

16. OTHER INFORMATION

Further information
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