

According to the UN GHS revision 8

Creation Date: April 23, 2026

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1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Oxalic acid

Catalog Number: T202680

CAS Number: 144-62-7

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses: no data available

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Address: 34 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5 hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Dermal

2.2 GHS label elements, including precautionary statements

Pictogram(s):



Signal word: Warning

Hazard statement(s):
H302 Harmful if swallowed
H312 Harmful in contact with skin

Precautionary statement(s):

Prevention:

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response:

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.

Storage:

none

Disposal:

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Oxalic acid	-	144-62-7	205-634-3

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Fresh air, rest. Half-upright position. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower for at least 15 minutes. Refer for medical attention .

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

4.2 Most important symptoms/effects, acute and delayed

Treatment should be rapidly instituted by giving a dilute solution of calcium lactate, lime water, finely pulverized chalk, plaster, and/or milk to supply large amounts of calcium to inactivate oxalate by forming an insoluble calcium salt in the stomach. Gastric lavage is controversial, since this may compound an already severe corrosive lesion in the esophagus or stomach. However, if used, gastric lavage should be done with limewater (calcium hydroxide). Intravenous gluconate or calcium chloride solutions should be given to prevent hyp^o Calcemic tetany; in severe cases parathyroid extract also has been given. ... Additionally, acute renal failure should be anticipated, and careful fluid management is necessary. Oxalates

4.3 Indication of immediate medical attention and special treatment needed, if necessary

As dust or as a solution, can cause severe burns of eyes, skin, or mucous membranes. Ingestion of 5 grams has caused death with symptoms of nausea, sh^ock, collapse, and convulsions coming on rapidly. Repeated or prolonged skin exposure can cause dermatitis and slow-healing ulcers. (USCG, 1999)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, dry chem, "alc resistant" foam, or carbon dioxide. dust may be reduced with water spray. aqueous solution must be contained for disposal. use water to keep fire-exposed containers cool. water may cause foaming of molten material. oxalic acid dihydrate

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Generates poisonous gases (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance, protective gloves and safety goggles. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance, protective gloves and safety goggles. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

6.3 Methods and materials for containment and cleaning up

Cover with soda ash or sodium bicarbonate. Mix and add water. Neutralize and drain into a drain with sufficient water.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and food and feedstuffs. Dry. Well closed. STORE IN COOL, DRY, WELL-VENTILATED LOCATION. OXALIC ACID DIHYDRATE

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

TLV: 1 mg/m³, as TWA; 2 mg/m³ as STEL. EU-OEL: 1 mg/m³ as TWA

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	no data available
Odour	Odorless.
Melting point/freezing point	Remarks: At atmospheric pressure.
Boiling point or initial boiling point and boiling range	Sublimes (NIOSH, 2016)
Flammability	Combustible Solid

Lower and upper explosion limit/flammability limit	no data available
Flash point	101-157°C
Auto-ignition temperature	> 400 °C. Remarks:At atmospheric pressure.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	DMSO: 247.5 mg/mL (2749.08 mM),Sonication is recommended. H2O: 100 mg/mL (1110.74 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
N-octanol-water partition coefficient	log Pow = -1.7. Temperature:23 °C.
Vapour pressure	0 mm Hg. Temperature:25 °C.
Density and/or relative density	0.813 g/cm3. Temperature:20 °C.
Relative vapour density	4.4 (vs air)
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Decomposes on contact with hot surfaces or flames. This produces formic acid and carbon monoxide. The solution in water is a medium strong acid. Reacts violently with strong oxidants. This generates fire and explosion hazard. Reacts with some silver compounds. This produces explosive silver oxalate. Attacks some forms of plastic.

10.2 Chemical stability

Oxalic acid can be dehydrated by careful drying @ 100 deg c, but losses °Ccur through sublimation oxalic acid dihydrate

10.3 Possibility of hazardous reactions

OXALIC ACID is hygroscopic and sensitive to heat. This compound may react violently with furfuryl alcohol, silver, sodium, perchlorate, sodium hyp°Chlorite, strong oxidizers, sodium chlorite, acid chlorides, metals and alkali metals. (NTP, 1992). The heating of mixtures of Oxalic acid and urea has lead to explosions. This is due to the rapid generation of the gases CO₂, CO, and NH₃ [Praxis Naturwiss. Chem., 1987, 36(8), 41-42]. Oxalic acid and urea react at high temperatures to form toxic and flammable ammonia and carbon monoxide gases, and inert CO₂ gas [Von Bentzinger, R. et al., Praxis Naturwiss. Chem., 1987, 36(8), 41-42].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Reacts with strong alkalies, strong oxidizing materials, chlorites, and hyp°Chlorites. Oxalic acid dihydrate

10.6 Hazardous decomposition products

Decomp products incl carbon monoxide & formic acid.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 - rat (male) - 9.5 mL/kg bw. Remarks:475 mg/kg bw.

Inhalation: no data available

Dermal: LD50 - rabbit - 20 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. The substance may cause effects on the calcium balance after ingestion. Exposure at high levels could cause death.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. Exposure may result in kidney stones, slow-healing ulcers and black finger nails.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC0 - *Leuciscus idus melanotus* - 250 mg/L - 48 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 162.2 mg/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - > 19.83 - < 21.35 mg/L - 72 h.

Toxicity to microorganisms: Toxicity Threshold - *Pseudomonas putida* - 1 550 mg/L - 16 h.

12.2 Persistence and degradability

Six tests at oxalic acid initial concns of 3.3 to 10 ppm exhibited 75 to 202 %BODT over an incubation period of 5 days in an aerobic screening study using sewage in°Culum(1). A 78 and 55.5 %BODT for oxalic acid was measured under aerobic conditions over a period of 5 days in screening tests at 20 deg C using sewage in°Culum(2). Oxalic acid at initial concns of 0.00375, 0.0375, and 0.375 ppm exhibited 95, 99, and 100% degradation, respectively, in an aerobic screening study at 25 deg C using sewage in°Culum(3). In another screening study using sewage in°Culum, 68 and 64 %BODT were measured for oxalic acid at initial concns of 10 and 20 ppm, respectively, over a 5 day incubation period(4). An 89 %BODT was measured for oxalic acid (10 ppm initial concn) in an aerobic screening study using sewage in°Culum at 19.5-20.5 deg C over an incubation period of 5 days(5).

12.3 Bioaccumulative potential

Based on an average experimental water solubility of 220,000 mg/L at 25 deg C(1) and a regression derived equation(2), the BCF for oxalic acid can be estimated to be approximately 0.6(SRC) and therefore should not be expected to bioconcentrate in aquatic organisms (SRC).

12.4 Mobility in soil

Based on an average experimental water solubility of 220,000 mg/L at 25 deg C(1) and a regression derived equation(2), the K^{oc} for undissociated oxalic acid can be estimated to be approximately 5. This K^{oc} value indicates that oxalic acid will have very high mobility in soil(3); therefore, adsorption to soil and sediment may not be an important fate process. Based on pKa1 and pKa2 values of 1.25 and 4.28 (4) respectively, oxalic acid will exist primarily as the oxalate ion under environmental conditions (pH 5-9). No experimental data are available to determine whether the oxalate ion will adsorb to sediment or soil more strongly than its estimated K^{oc} value indicates(SRC).

12.5 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZI ^o C)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

16. OTHER INFORMATION

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_l°Cale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Oxalic acid may sublime at temperatures >100 °C at reduced pressure. Optimal sublimation temperature is 157 °C. At higher temperatures it partly decomposes. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Some producers do not classify this substance under UN 3261.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product. All products are for Research Use Only · Not For Human or Veterinary or Therapeutic Use