

1 IDENTIFICATION

1.1 Product identifier

Substance name: Oxalic acid
Synonyms: Ethanedioic acid
Trade name: Oxalic Acid
Chemical name
and formula: Oxalic acid dihydrated– $\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$
CAS: 6153-56-6
Molecular Weight: 126.07 g/mol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Industrial applications including: Plasticizer for polymers, Biodegradable solvents and lubricants, Engineering plastics, Epoxy curing agent, Adhesive and powder coating, Corrosion inhibitor.
Uses advised against: There are no uses advised against.

1.3 Details of the supplier of the safety data sheet

Name: **Connection Chemical, LP**
Address: **104 Pheasant Run, Suite 104, Newtown, PA 18940**
Phone N°: **215-493-4240**
Fax N°: **215-493-3801**

1.4 Emergency telephone number

CHEMTREC **1-800-424-9300**

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance

2.1.1 Classification according to 29 CFR 1910.1200

Acute toxicity cat 4 oral
Acute toxicity cat 4 dermal
Eye Damage 1

2.2 Label elements

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2.2.1 Labelling

Signal word: Danger



Hazard pictogram:

Hazard statements:

Harmful if swallowed.

Harmful in contact with skin.

Causes serious eye damage.

Precautionary statements:

Wear protective gloves/protective clothing/eye protection/face protection.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

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 SWALLOWED: Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before use.

Call a POISON CENTER or doctor/physician if you feel unwell.

Dispose of contents/container to hazardous waste collection point.

2.3 Other hazards

The substance does not meet the criteria for PBT or vPvB substance.

No other hazards identified.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Main constituent

Name: Oxalic acid dihydrate ≤100%

CAS: 6153-56-6

Synonyms: Ethanedioic acid

Impurities

No impurities relevant for classification and labelling

4 FIRST AID MEASURES

4.1 Description of first aid measures

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General advice

In case of loss of consciousness, never provide drink or induce vomiting.

Following inhalation

Move source of dust or move person to fresh air and rest.

Following skin contact

Carefully and gently brush the contaminated body surfaces in order to remove all traces of product for at least 15 minutes. Wash affected area immediately with plenty of water. Remove contaminated clothing. If necessary seek medical advice.

Following eye contact

Rinse eyes immediately with plenty of water for at least 15 minutes and seek medical advice.

After ingestion

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Prolonged or repeated skin contact may cause dermatitis. If inhaled can cause a burning sensation of nose and throat, coughing, shortness of breath, sore throat, symptoms of immediate effects.

4.3 Recommendations immediate medical care

Follow the advice given in section 4.1

5 FIREFIGHTING MEASURES

5.1 Extinguishing media

5.1.1 Suitable extinguishing media

Use Water spray, powder, foam or carbon dioxide as extinguishing media. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.1.2 Unsuitable extinguishing media

Avoid open flame. Avoid contact with oxidizing materials.

5.2 Special hazards arising from the substance or mixture

Keep away from sources of ignition. In case of fire toxic fumes may form CO, CO₂.

5.3 Advice for fire fighters

The fire fighting equipment must use individual breathing equipment. In case of fire keep cool by spraying with water. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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6.1.1 For non-emergency personnel

Ensure adequate ventilation.

Keep dust levels to a minimum.

Keep unprotected persons away.

Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8).

Avoid inhalation of dust – ensure that sufficient ventilation or suitable respiratory protective equipment is used, wear suitable protective equipment (see section 8).

6.1.2 For emergency responders

Keep dust levels to a minimum.

Ensure adequate ventilation.

Keep unprotected persons away.

Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8).

Avoid inhalation of dust – ensure that sufficient ventilation or suitable respiratory protective equipment is used, wear suitable protective equipment (see section 8).

6.2 Environmental precautions

Contain the spillage. Keep the material dry if possible. Cover area if possible to avoid unnecessary dust hazard. Avoid uncontrolled spills to watercourses and drains. Any large spillage into watercourses must be alerted to the Environment Agency or other regulatory body.

6.3 Methods and material for containment and cleaning up

Collect up dry and deposit in waste containers for later disposal according to regulations. Wipe off with water. (Extra personal protection: P2 filter respirator for harmful particles).

6.4 Reference to other sections

For more information on exposure controls/personal protection or disposal considerations, please check section 8 and 13 of this safety data sheet.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Wear protective equipment (refer to section 8 of this safety data sheet). Do not wear contact lenses when handling this product. Keep dust levels to a minimum. Minimize dust generation. Enclose dust sources, use exhaust ventilation.

7.2 Safe storage recommendations, including any incompatibilities

The substance should be stored under dry conditions. Recipients tightly closed. Room temperature. Separated from strong bases, oxidizing materials, food and feed.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure controls: Ventilation and

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appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Oxalic Acid	1 mg/m ³	TLV	ACGIH
	2 mg/m ³	STEL	ACGIH
	1 mg/m ³	PEL	OSHA
	1 mg/m ³	REL	NIOSH
	2 mg/m ³	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

8.2 Exposure controls

To control potential exposures, generation of dust should be avoided. Further, appropriate protective equipment is recommended. Eye protection equipment (e.g. goggles or visors) must be worn, unless potential contact with the eye can be excluded by the nature and type of application (i.e. closed process). Additionally, face protection, protective clothing and safety shoes are required to be worn as appropriate.

8.2.1 Appropriate engineering controls

If user operations generate dust, use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne dust levels below recommended exposure limits.

8.2.2 Individual protection measures, such as personal protective equipment

8.2.2.1 Eye/face protection

Do not wear contact lenses. Tight fitting goggles with side shields, or wide vision full goggles.

8.2.2.2 Skin protection

Dermal exposure should be minimized to the extent technically feasible. Wear suitable gloves (nitrile, neoprene, natural rubber, polyvinyl), standard work clothes, long pants, long sleeves, coveralls, closing with accessories and shoes openings resistant to corrosive chemicals and prevent penetration of dust.

8.2.2.3 Respiratory protection

Local ventilation to keep levels below established threshold values is recommended. A suitable particle filter mask is recommended, depending on the expected exposure levels - please check the relevant exposure scenario, given in the Appendix/available via your supplier.

8.2.2.4 Thermal hazards

The substance does not represent a thermal hazard, thus special consideration is not required.

8.2.3 Environmental exposure controls

Avoid releasing to the environment.

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Contain the spillage. Any large spillage into watercourses must be alerted to the regulatory authority responsible for environmental protection or other regulatory body.

For detailed explanations of the risk management measures that adequately control exposure of the environment to the substance please check the relevant exposure scenario, available via your supplier.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	uncoloured crystals or white powder
Odour:	odourless
Odour threshold:	not applicable
pH:	~0,7(50g/l)
Melting point:	not applicable (sublimes at > 160 °C)
Boiling point:	not applicable (sublimes at > 160 °C)
Flash point:	not applicable
Evaporation rate:	not applicable
Flammability:	non flammable (study result, EU A.10 method)
Explosive limits:	non explosive (void of any chemical structures commonly associated with explosive properties)
Vapour pressure:	0.0312 Pa at 25°C
Vapour density:	not applicable
Relative density:	0.813 (study result, EU A.3 method)
Solubility in water:	108 g/L at 25°C (study results)
Partition coefficient:	- 1.7 at 23°C (study result, OECD Guideline 107)
Auto ignition temperature:	no relative self-ignition temperature below 400 °C (study result, EU A.16 method)
Decomposition temperature:	> 160 °C
Viscosity:	not applicable
Oxidising properties:	no oxidising properties

9.2 Other information

Not available

10 STABILITY AND REACTIVITY

10.1 Reactivity

On contact with hot surfaces or flames this substance decomposes forming formic acid, carbon monoxide and carbon dioxide. The solution in water is a medium strong acid.

10.2 Chemical stability

Under normal conditions of use and storage, oxalic acid is stable.

10.3 Possibility of hazardous reactions

Reacts violently with strong oxidants causing fire and explosion hazard. Reacts with some silver compounds to form explosive silver oxalate. Attacks some forms of plastic.

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10.4 Conditions to avoid

Minimize exposure to air and moisture to avoid degradation.

10.5 Incompatible materials

Alkaline solutions. Ammonia. Halogenates. Oxidizing agents. Metals. Water. / Heat.

10.6 Hazardous decomposition products

Formic acid. Carbon dioxide. Carbon monoxide.

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Oxalic acid is classified as harmful by oral and dermal route and it entails a risk of serious damage to the eye.

11.2 Toxicity endpoints and outcome of the effects assessment

Absorption: The primary health effect of oxalic acid is local irritation due to a pH shift. Therefore, absorption is not a relevant parameter for the effects assessment.

Acute toxicity: Oxalic acid is Oral and Dermal Acutely toxic cat. 4.

Oral: LD50 > 375 mg/kg bw (according to the method of Smyth, rat)

Dermal: LD50 > 20000 mg/kg bw (Pesticide Action Network, North America, rabbit)

Inhalation: no data available

Classification for acute toxicity is category 4 for oral and dermal route.

Irritation / corrosion

Eye irritation: Oxalic acid entails a risk of serious damage to the eye (OECD 405, rabbit).

Skin irritation: Oxalic acid is not irritating to skin (OECD 404, rabbit).

Based on experimental results, oxalic acid requires classification as severely irritating to the eye [R41, Risk of serious damage to eye; Eye Damage 1 (H318 - Causes serious eye damage)].

Sensitisation: Oxalic acid is not a skin sensitizer (OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)).

Repeated dose toxicity

Toxicity of oxalic acid via the oral route is addressed by LOAEL of 150 mg/kg bw/day.

Toxicity of Oxalic acid via the dermal route is not considered as relevant in view of the anticipated insignificant absorption through skin.

Toxicity of Oxalic acid via inhalation is not considered as relevant.

Therefore, classification of Oxalic acid for toxicity upon prolonged exposure is not required.

Mutagenicity

Bacterial reverse mutation assay (Ames test, OECD 471): Negative

Mammalian chromosome aberration test: Negative

Oxalic acid is void of any genotoxic potential.

Classification for genotoxicity is not warranted.

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Carcinogenicity

Oxalic acid is not considered as carcinogenic.

Human epidemiological data support lack of any carcinogenic potential of oxalic acid.

Classification for carcinogenicity is not warranted.

Toxicity for reproduction

Oxalic acid is not toxic to reproduction (experimental result, mouse).

Human epidemiological data support lack of any potential for reproductive toxicity of oxalic acid.

Classification for reproductive toxicity according to regulation (EC) 1272/2008 is not required.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

12.1.1 Acute/Prolonged toxicity to fish

LC50 (96h) for freshwater fish: 160 mg/l (Deutsche Einheitsverfahren zur Wasser, Abwasser und Schlamm-Untersuchung)

12.1.2 Acute/Prolonged toxicity to aquatic invertebrates

EC50 (48h) for freshwater invertebrates: 162.2mg/l (OECD 202, Daphnia)

12.1.3 Acute/Prolonged toxicity to aquatic plants

Toxicity threshold (8 days) for freshwater algae: 80.0 mg/l

12.1.4 Chronic toxicity to aquatic organisms

The long-term aquatic toxicity study on aquatic invertebrates shall be considered if the substance is poorly water soluble and oxalic acid is soluble in water. Also oxalic acid presents a low toxicity for the short term test.

12.1.5 Toxicity to soil dwelling organisms

The oxalic acid is not supposed to be directly applied to soil and an indirect exposure to soil via sewage sludge transfer is unlikely since the substance is readily biodegradable. As oxalic acid is considered as "readily biodegradable", it can be assumed that it will be biodegraded within the STP process and as a consequence a transfer to the soil compartment is not expected. Therefore, no tests on terrestrial organisms are provided.

12.1.6 Toxicity to terrestrial plants

EC50 (72 h) for terrestrial plants: 8 mM

12.1.7 General effect

Oxalic acid has a low logKow and is readily biodegradable.

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The substance is not classified as hazardous for the environment.

12.2 Persistence and degradability

Oxalic acid is readily biodegradable, meeting the 10-d window. The biodegradation in seawater occurs at the same rate. Also the anaerobic biodegradation occurs rapidly.

12.3 Bio accumulative potential

Not relevant for oxalic acid because this substance is ready biodegradable and highly soluble in water, and LogKow is negative.

12.4 Mobility in soil

Transport through the medium is rate-limiting. Degradation after 30 days at 20°C is up to 73% (based on CO₂ evolution). Oxalic acid is easily biodegradable in soil.

12.5 Results of PBT and vPvB assessment

The hazard assessment of oxalic acid reveals neither a need to classify the substance as dangerous to the environment, nor is it a PBT or vPvB substance, nor are there any further indications that the substance may be hazardous to the environment.

12.6 Other adverse effects

No other adverse effects are identified

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of oxalic acid should be in accordance with local and national legislation. Processing, use or contamination of this product may change the waste management options. Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Dispose of container and unused contents in accordance with federal, state and local requirements. The used packing is only meant for packing this product. After usage, empty the packing completely.

14 TRANSPORT INFORMATION

US DOT	Not Regulated
TDG	Not Regulated
IMDG	Not Regulated
Marine Pollutant	No
IATA/ICAO	Not Regulated

15 REGULATORY INFORMATION

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

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Oxalic acid dihydrate
SARA 312	Oxalic acid dihydrate
SARA 313	Not Listed
WHMIS Canada	CLASS E: Corrosive solid.

16 OTHER INFORMATION

16.1 Abbreviations

EC₅₀: median effective concentration
LC₅₀: median lethal concentration
LD₅₀: median lethal dose
LOAEL: lowest observed adverse effect level
OEL: occupational exposure limit
PBT: persistent, bio accumulative, toxic chemical
PNEC: predicted no-effect concentration
STEL: short-term exposure limit
TWA: time weighted average
vPvB: very persistent, very bio accumulative chemical

16.2 Revision and disclaimer

Last updated 6/19/2017

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