Oxalic Acid

Safety Data Sheet

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Revision date: 04/24/2015

SECTION 1: Identification of the substance/mixture

1.1. Product identifier

Product form	:	Substance
Substance name	:	Oxalic Acid
Formula	:	$H_2C_2O_4$
Molecular weight	:	90.03 g/mol
CAS No.	:	144-62-7
Product code	:	LW-H2C2O4
Synonyms	:	Dicarboxylic Acid

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

Use of the substance/mixture	:	Laboratory chemicals, Synthesis of substances

1.3. Emergency telephone number

Emergency number	:	1.800.424.9300 (USA) +1.703.527.3887 (INT)

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Dermal (Category 4), H312

Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. GHS Label elements, including precautionary statements

Pictogram :

Signal word : Danger

Hazard statement(s)

H302 + H312	:	Harmful if swallowed or in contact with skin
H318	:	Causes serious eye damage.

Precautionary statement(s)

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

P280	:	Wear protective gloves/ protective clothing.
P301 + P312 + P330	:	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P302 + P352 + P312	:	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 + P310	:	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.
P363	:	Wash contaminated clothing before reuse.
P501	:	Dispose of contents/ container to an approved waste disposal plant.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

none

SECTION 3: Composition/information on ingredients

3.1. Substances

Synonyms	:	$H_2C_2O_4$
Formula	:	Dicarboxylic Acid
Molecular Weight	:	90.03 g/mol
CAS-No.	:	144-62-7

Hazardous components

Component	Classification	Concentration
Oxalic Acid	Acute Tox. 4; Eye Dam. 1; H302 + H312, H318	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: Description of first aid measures

4.1. Description of first aid measures

General advice	:	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	:	Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
First-aid measures after eye contact	:	Flush eyes with water as a precaution.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Carbon oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4. More Information

No data available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

For personal protection see section 8.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

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

Moisture sensitive.

Storage class (TRGS 510): Non Combustible Solids

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Oxalic acid	144-62-7	TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Skin irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation		
		STEL	2 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation		

		Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		STEL	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Skin irritation		
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	2.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2. Exposure controls

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

8.3. Personal protective equipment

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 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.
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.
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).
Environmental exposure controls	:	Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Form: crystalline Color: white
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	1.3 at 9 g/l
Melting point/freezing point	:	Melting point/range: 189.5 °C (373.1 °F) - dec.
Initial boiling point and boiling range	:	157 °C (315 °F) at 1,013 hPa (760 mmHg)
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper/lower flammability or explosive limits	:	No data available

Vapor pressure	:	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F)
Vapor density	:	No data available
Relative 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	:	log Pow: -1.699 at 23 °C (73 °F)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other safety information

Surface tension	:	70.1 mN/m at 0.014 at 25 °C (77 °F)

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Avoid moisture.

10.5. Incompatible materials

Metals, Alkali metals

10.6. Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	LD50 Oral - Rat - female - 1,080 mg/kg Inhalation: No data available LD50 Dermal - Rabbit - 20,000 mg/kg No data available

Skin corrosion/irritation	:	Skin - Rabbit Result: No skin irritation (OECD Test Guideline 404)
Serious eye damage/irritation	:	Eyes - Rabbit Result: Risk of serious damage to eyes. - 24 h (OECD Test Guideline 405)
Respiratory or skin sensitization	:	- Mouse Result: Does not cause skin sensitisation.
Germ cell mutagenicity	:	S. typhimurium Result: negative

Carcinogenicity

Human carcinogen. May cause cancer by inhalation.

IARC:	:	1 - Group 1: Carcinogenic to humans (Nickel sulfate hexahydrate)
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	:	Possible risk of congenital malformation in the fetus. Reproductive toxicity - Mouse - Oral Effects on Fertility: Other measures of fertility Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	Inhalation - Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	:	No data available
Additional Information	:	Repeated dose toxicity - Lowest observed adverse effect level - 150 mg/kg RTECS: RO2450000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish	:	static test LC50 - Leuciscus idus melanotus - 160 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates	:	Immobilization EC50 - Daphnia magna (Water flea) - 162.2 mg/l - 48 h (OECD Test Guideline 202)
12.2. Persistence and degradability	:	No data available
Biodegradability	:	aerobic - Exposure time 20 d Result: 89 % - Readily biodegradable
12.3. Bioaccumulative potential	:	No data available
12.4. Mobility in soil	:	No data available
12.5. Results of PBT and vPvB assessment	:	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6. Other adverse effects	:	No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

SARA 302 Components

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

SARA 313 Components

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

Oxalic acid	CAS-No.	Revision Date
	144-62-7	1993-04-24

Pennsylvania Right To Know Components

Oxalic acid	CAS-No.	Revision Date
	144-62-7	1993-04-24

New Jersey Right To Know Components

Oxalic acid	CAS-No.	Revision Date
	144-62-7	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.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
H302		Harmful if swallowed.
H302 + H312	:	Harmful if swallowed or in contact with skin
H312	:	Harmful in contact with skin.
H318	:	Causes serious eye damage.

HMIS Rating

Health Hazard	:	2
Chronic Health Hazard	:	*
Flammability	:	0
Physical Hazard	:	0

NFPA Rating

Health hazard	:	2
Fire Hazard	:	0
Reactivity Hazard	:	0

Further Information

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and Loudwolf Holdings Ltd. assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his/her application.