

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/16/2018

Version 1.6

SECTION 1. Identification**Product identifier**

Product number	816144
Product name	Oxalic acid anhydrous for synthesis
CAS-No.	144-62-7

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

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd 109 Woodbine Downs Blvd. Unit 5 Etobicoke Ontario M9W 6Y1 Canada General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification**GHS Classification**

Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Dermal, H312
Serious eye damage, Category 1, H318

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

GHS-Labeling*Hazard pictograms**Signal Word*

Danger

Hazard Statements

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

Precautionary Statements

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P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 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/doctor.
P322 Specific measures (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	HOOC-COOH	C ₂ H ₂ O ₄ (Hill)
Molar mass	90.03 g/mol	

Hazardous ingredients

Chemical name (Concentration)
CAS-No.
Oxalic acid (>= 90 % - <= 100 %)
144-62-7

SECTION 4. First aid measures

Description of first-aid measures

General advice
First aider needs to protect himself.

Inhalation
After inhalation: fresh air.

Skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

Eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

Ingestion
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Risk of serious damage to eyes.

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The following applies to oxalates in general: nausea and vomiting after swallowing. Mucosal irritations, coughing, and dyspnoea after inhalation. Systemic effect: drop in the blood calcium level, toxic effect on kidneys, cardiovascular disorders.

Irritation and corrosion, agitation, spasms, Nausea, Vomiting, cardiovascular disorders, collapse

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

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Tightly closed. Dry.

Store below +30°C (+86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Oxalic acid 144-62-7</i>			
CAD AB OEL	Time Weighted Average (TWA):	1 mg/m ³	
	Short Term Exposure Limit (STEL):	2 mg/m ³	
	Limit (STEL):	2 mg/m ³	
CAD BC OEL	Short Term Exposure Limit (STEL):	2 mg/m ³	
	Time Weighted Average (TWA):	1 mg/m ³	
	Limit (STEL):	2 mg/m ³	
CAD ON OEL	Time Weighted Average (TWA):	1 mg/m ³	
	Short Term Exposure Limit (STEL):	2 mg/m ³	
	Limit (STEL):	2 mg/m ³	
OEL (QUE)	Time Weighted Average (TWA):	1 mg/m ³	
	Short Term Exposure Limit (STEL):	2 mg/m ³	
	Limit (STEL):	2 mg/m ³	
CAD MB OEL	Short Term Exposure Limit (STEL):	2 mg/m ³	
	Limit (STEL):	2 mg/m ³	
	Time Weighted Average (TWA):	1 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: > 480 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	white
Odor	odorless
Odor Threshold	Not applicable
pH	ca. 1 at 100 g/l 68 °F (20 °C)
Melting point	372 °F (189 °C) (decomposition)
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.

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Vapor pressure	21.5 hPa at 122 °F (50 °C) < 1 Pa at 77 °F (25 °C)
Relative vapor density	No information available.
Density	1.9 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	ca.108 g/l at 77 °F (25 °C)
Partition coefficient: n-octanol/water	log Pow: -1.7 (23 °C) OECD Test Guideline 107 Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	Decomposes on heating.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Bulk density	ca.750 kg/m ³

SECTION 10. Stability and reactivity

Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

sensitive to moisture

Possibility of hazardous reactions

Risk of explosion with:

chlorates, sodium hypochlorite, Strong oxidizing agents, silver, salts of oxyhalogenic acids

Exothermic reaction with:

bases, Ammonia, Mercury

Conditions to avoid

Strong heating (decomposition).

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Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Acute oral toxicity

LD50 Rat: 375 mg/kg (IUCLID)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity

Acute toxicity estimate : 1,100.1 mg/kg

Expert judgment

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Eye irritation

Rabbit

Result: Irreversible effects on the eye

OECD Test Guideline 405

Causes serious eye damage.

Sensitization

Local lymph node assay (LLNA) Mouse

Result: negative

Method: OECD Test Guideline 429

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Chinese hamster lung cells

Result: negative

Method: OECD Test Guideline 473

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Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Systemic effects:

After absorption:

agitation, spasms, Nausea, Vomiting, cardiovascular disorders, collapse, disturbed electrolyte balance.

Secondary products cause:

Damage to:

Kidney

The following applies to oxalates in general: nausea and vomiting after swallowing. Mucosal irritations, coughing, and dyspnoea after inhalation. Systemic effect: drop in the blood calcium level, toxic effect on kidneys, cardiovascular disorders.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

static test LC50 *Leuciscus idus* (Golden orfe): 160 mg/l; 48 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 162.2 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202 (for the dihydrate)

Persistence and degradability

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Biodegradability

89 %; 5 d; aerobic Biochemical oxygen demand within 5 days
(ECHA)

Readily biodegradable.

Biochemical Oxygen Demand (BOD)

160 mg/g (5 d)
(Lit.)

Chemical Oxygen Demand (COD)

180 mg/g
(IUCLID)

Theoretical oxygen demand (ThOD)

180 mg/g

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -1.7 (23 °C)

OECD Test Guideline 107

Bioaccumulation is not expected.

Mobility in soil

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

TSCA 12b

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Ingredients

Oxalic acid

144-62-7

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Notification status

TSCA:

All components of the product are listed in the TSCA-inventory.

DSL:

All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H302 + H312 Harmful if swallowed or in contact with skin.

H318 Causes serious eye damage.

Precautionary Statements

Prevention

P280 Wear eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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