SAFETY DATA SHEET

SDS00384
Oxalic Acid

Preparation Date: 13/Feb/2018 Version: 2

1. IDENTIFICATION

Product identifier

Product Name Oxalic Acid

Other means of identification

Product Code(s) SDS00384

Synonyms Ethanedionic acid.

Recommended use of the chemical and restrictions on use

Recommended Use Textile cleaning, flame proofing, rust removal, and fabric dyeing; metal and equipment cleaning; anti-corrosion coating; chemical intermediate and catalyst

Restricted Uses No information available

Initial Supplier Identifier
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC V6X 1W5
Telephone: 1-866-686-4827

Emergency telephone number

24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Hazard pictograms

Signal Word: Danger

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Causes severe skin burns and eye damage

Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
Rinse mouth

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal
Dispose of contents/container to an approved waste disposal plant

Unknown acute toxicity No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No	Weight-%	Synonyms
Oxalic Acid	144-62-7	90 - 100%	Oxalic Acid

4. FIRST AID

Description of first aid measures

General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed:
Causes severe eye irritation Headache, nausea and vomiting may occur. May irritate mouth, nose, and throat. Coughing, chest pains, and breathing difficulty may occur. Can cause redness, pain and damage to the cornea. If damage is restricted to the outer layer of the eye, recovery may occur within a few days. Prolonged contact with solutions can produce irreversible eye damage. Can cause severe poisoning or death, depending on the concentration and total amount of material ingested. Dilute solutions may cause no immediate irritation or pain, while concentrated material (such as 10% solutions or the solid) can cause burning pain in the mouth, throat and stomach, followed by profuse vomiting (sometimes bloody) (corrosive effects). Small doses of oxalate in the body may cause headache, pain and twitching in muscles and cramps. Larger doses can cause weak and irregular heartbeat, a drop in blood pressure and signs of heart failure. Large doses rapidly cause a shock-like state, convulsions, coma and possibly death. A delayed effect of ingestion is kidney damage, possibly leading to renal failure. Solutions of 5 to 10 percent acid are irritating to the skin after prolonged exposure and can cause corrosive injury. Excessive contact may produce a delayed localized pain and discoloration of the skin with fingernails becoming brittle and blue-colored.

Indication of any immediate medical attention and special treatment needed:

Note to physicians
If victim is conscious give immediately, by mouth, a fine suspension in water of a non-toxic calcium compound such as calcium lactate, chalk, plaster or milk. Large amounts of calcium are required to inactivate oxalate by precipitating it as the insoluble calcium oxalate salt.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the substance or mixture
Use water spray to cool fire-exposed containers and structures.

Hazardous combustion products

Oxides of carbon.

Special protective equipment for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep the containers closed when not in use. Keep away from heat, sparks and flame. Empty containers may contain hazardous product residues. Avoid breathing in dust. Avoid dust generation and provide for room ventilation during handling. Ensure all containers are labeled.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, away from heat and ignition sources. Avoid storage with incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits .

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Oxalic Acid 144-62-7	TWA: 1 mg/m^3 STEL: 2 mg/m^3	TWA: 1 mg/m^3 STEL: 2 mg/m^3	TWA: 1 mg/m^3 STEL: 2 mg/m^3	TWA: 1 mg/m^3 STEL: 2 mg/m^3	2 mg/m^3 STEL 1 mg/m^3 TLV-TWA	500 mg/m^3

Consult local authorities for recommended exposure limits

Appropriate engineering controls

Engineering controls
If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne

levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection
Chemical goggles; also wear a face shield if splashing hazard exists.

Hand protection
Butyl rubber gloves. Nitrile gloves. Neoprene gloves. Polyvinylchloride (PVC) gloves.

Skin and body protection
Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection
NIOSH RECOMMENDATIONS FOR OXALIC ACID CONCENTRATIONS IN AIR :
UP TO 25 mg/m^3: Powered air-purifying respirator with dust and mist filter(s); or SAR operated in a continuous-flow mode.
UP TO 50 mg/m^3: Full-facepiece respirator with high-efficiency particulate filter(s); or full-facepiece SCBA; or full-facepiece SAR.
UP TO 500 mg/m^3: Positive pressure, full-facepiece SAR.

General hygiene considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state	Solid Crystals or Powder
Color	Colorless Transparent
Odor	Odorless
Odor threshold	No information available

PROPERTIES	Values	Remarks • Method
pH	1.3 (0.1 M solution in water)	
Melting point / freezing point	No data available	101.5 (dihydrate), 187 (anhydrous)
Initial boiling point/boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	<0.001 mm Hg @ 20 deg C	
Relative vapor density	No data available	None known
Specific Gravity	No data available	None known
Water solubility	Soluble in water	
Solubility in other solvents	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known

Dynamic viscosity	No data available	None known
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Molecular weight	90.04 (anhydrous) , 126.07 (dihydrate)	
VOC Percentage Volatility	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. STABILITY AND REACTIVITY

Reactivity/Chemical Stability
Stable If heated to melting point, sublimation and decomposition occurs.

Possibility of hazardous reactions
No additional remark.

Conditions to avoid
Incompatible materials. Avoid excessive heat, open flames and all ignition sources. Moisture.

Incompatible materials
Oxidizing agents. Alkalis. Alkali metals. Acid chlorides. Iron. Silver.

Hazardous decomposition products
Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Headache, nausea and vomiting may occur. May irritate mouth, nose, and throat. Coughing, chest pains, and breathing difficulty may occur.

Eye contact
Causes severe eye irritation. Can cause redness, pain and damage to the cornea. If damage is restricted to the outer layer of the eye, recovery may occur within a few days. Prolonged contact with solutions can produce irreversible eye damage.

Skin contact
Solutions of 5 to 10 percent acid are irritating to the skin after prolonged exposure and can cause corrosive injury. Excessive contact may produce a delayed localized pain and discoloration of the skin with fingernails becoming brittle and blue-colored.

Ingestion
Can cause severe poisoning or death, depending on the concentration and total amount of material ingested. Dilute solutions may cause no immediate irritation or pain, while concentrated material (such as 10% solutions or the solid) can cause burning pain in the mouth, throat and stomach, followed by profuse vomiting (sometimes bloody) (corrosive effects). Small doses of oxalate in the body may cause headache, pain and twitching in muscles and cramps. Larger doses can cause weak and irregular heartbeat, a drop in blood pressure and signs of heart failure. Large doses rapidly cause a shock-like state, convulsions, coma and possibly death. A delayed effect of ingestion is kidney damage, possibly leading to renal failure.

Information on toxicological effects

Symptoms

Long term exposure to oxalic acid solutions, by ingestion, skin absorption and inhalation, is linked to stone formation (calculi) in the kidney and urinary tract (urolithiasis) of workers. Painful abdominal spasms (during the passing of the stone) as well as painful and difficult urination during exposure). Oxalic acid solutions can cause localized pain, discoloration of the fingers and nails and possibly ulcers and gangrene. Weight loss, chronic inflammation of the upper respiratory tract, irritation of the nose and throat and painful urination were symptoms of long term chronic exposure by inhalation.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 375.00 mg/kg
ATEmix (dermal) 1,100.00 mg/kg

Unknown acute toxicity No information available

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Oxalic Acid 144-62-7	= 375 mg/kg (Rat)	= 20000 mg/kg (Rat)	Not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Solutions of 5 to 10 percent acid are irritating to the skin after prolonged exposure and can cause corrosive injury. Excessive contact may produce a delayed localized pain and discoloration of the skin with fingernails becoming brittle and blue-colored.

Serious eye damage/eye irritation
Causes severe eye irritation. Can cause redness, pain and damage to the cornea. If damage is restricted to the outer layer of the eye, recovery may occur within a few days. Prolonged contact with solutions can produce irreversible eye damage.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.

Chemical Name	ACGIH	IARC	NTP	OSHA
Oxalic Acid 144-62-7	Not available	Not available	Not available	Not available

Reproductive toxicity
No information available.

Specific target organ systemic toxicity - single exposure
No information available.

Specific target organ systemic toxicity - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

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Chemical Name	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Oxalic Acid 144-62-7	Not available	Not available	Not available	EC50: 125 - 150mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulation No information available.

Component Information

Chemical Name	Partition coefficient
Oxalic Acid 144-62-7	-0.81

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Do not reuse empty containers.

14. TRANSPORT INFORMATION

TDG (Canada):

UN Number Not applicable
Shipping name Not regulated
Class Not applicable
Packing Group Not applicable
Marine pollutant Not available.

DOT (U.S.)

UN Number Not applicable
Shipping name Not regulated
Class Not applicable
Packing Group Not applicable
Marine pollutant Not available

15. REGULATORY INFORMATION

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

U.S. Regulatory Rules

Chemical Name	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Oxalic Acid - 144-62-7	Not Listed	Not Listed	Not Listed

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA:	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS Health Rating:	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.

Preparation Date: 13/Feb/2018
Revision Date: 13/Feb/2018

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End of Safety Data Sheet