



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> </tr> </table>	Health Hazard	3	Fire Hazard	1	Reactivity	0	
Health Hazard	3							
Fire Hazard	1							
Reactivity	0							
See Section 15.								

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/ Trade Name	Oxalic acid dihydrate	Catalog Number(s).
Manufacturer	ProChem 826 Roosevelt Rd. Rockford, IL 61109	CAS# 6153-56-6
Commercial Name(s)	Not available.	RTECS Not available.
Synonym	Ethanedioic Acid, dihydrate	TSCA TSCA 8(b) inventory: No products were found. It is a hydrate and exempt from TSCA inventory requirements.
Chemical Name	Oxalic Acid, dihydrate	CI# Not applicable.
Chemical Family	Acid.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 (815)398-1788
Chemical Formula	(COOH) ₂ .2H ₂ O	
Supplier		

Section 2. Composition and Information on Ingredients					
		<i>Exposure Limits</i>			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Oxalic acid dihydrate	6153-56-6	1	2		100
Toxicological Data on Ingredients	Oxalic acid dihydrate LD50: Not available. LC50: Not available.				

Section 3. Hazards Identification	
Potential Acute Health Effects	<p>Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</p>
Continued on Next Page	

Potential Chronic Health Effects	<p>CARCINOGENIC EFFECTS: Not available.</p> <p>MUTAGENIC EFFECTS: Not available.</p> <p>TERATOGENIC EFFECTS: Not available.</p> <p>DEVELOPMENTAL TOXICITY: Not available.</p> <p>The substance may be toxic to kidneys, the nervous system, mucous membranes, heart, brain, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.</p>
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Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	May be combustible at high temperature.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	As with most organic solids, fire is possible at elevated temperatures
Special Remarks on Explosion Hazards	Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.
Large Spill	Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, alkalis.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 1 STEL: 2 (mg/m ³) from ACGIH (TLV) [United States] TWA: 1 STEL: 2 (mg/m ³) from OSHA (PEL) [United States] TWA: 1 STEL: 2 (mg/m ³) from NIOSH [United States] TWA: 1 STEL: 2 (mg/m ³) [United Kingdom (UK)] TWA: 1 STEL: 2 (mg/m ³) [Canada] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline solid)	Odor	Odorless.
Molecular Weight	126.07 g/mole	Taste	Not available.
pH (1% soln/water)	Not available	Color	Colorless. White.
Boiling Point	Not available.		
Melting Point	101.5°C (214.7°F)		
Critical Temperature	Not available.		
Specific Gravity	Density: 1.653 @ 18.5 eg. C(Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	4.4 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		

Continued on Next Page

Oxalic acid dihydrate

Page Number: 4

Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, diethyl ether.
Solubility	Soluble in cold water, diethyl ether. Soluble in alcohol, glycerol. Insoluble in benzene, petroleum ether. Solubility in cold water: 1g/7ml. Solubility in hot water: 1g/2ml

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials, dust generation.
Incompatibility with various substances	Reactive with oxidizing agents, metals, alkalis.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Incompatible with chlorites, hypochlorites, silver and silver compounds, furfuryl alcohol. Hygroscopic; keep container tightly closed.
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Dermal contact. Inhalation. Ingestion.
Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	May cause damage to the following organs: kidneys, the nervous system, mucous membranes, heart, brain, skin, eyes.
Other Toxic Effects on Humans	Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).
Special Remarks on Toxicity to Animals	LD50 data for Oxalic acid, anhydrous (CAS no. 144-62-7): LD50[rat] - Route: oral; Dose: 7500 mg/kg
Special Remarks on Chronic Effects on Humans	May cause adverse reproductive effects based on animal test data. No human data found.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. Rare chemical burns may occur. Harmful if absorbed through the skin. Eyes: Causes severe eye irritation with possible burns. It may result in corneal damage and conjunctivitis. Inhalation: Causes irritation of the respiratory tract, ulceration of the mucous membranes. Inhalation of oxalic acid may also cause digestive disturbances such as nausea and vomiting as well as affecting the nerves and urinary system and causing headache, muscular irritability, weakness, and albuminuria Ingestion: Harmful if swallowed. Causes severe digestive tract irritation and possible burns. It may affect the cardiovascular system, and urinary system. Symptoms may include vomiting (often bloody or with coffee-ground appearance), diarrhea, bloody stool, hypermotility, abdominal pain, intense burning pain in the throat, esophagus, stomach, ulceration/burning of the mouth, esophagus, and stomach, severe purging, weak pulse, hypotension, cardiac irregularities, cardiovascular collapse. Other symptoms may include convulsions, headache, twitching, tetany, stupor, coma, tingling of fingers and toes, muscular irritability. Renal damage, as evidenced by oliguria, albuminuria, hematuria, may occur because Oxalic acid can bind calcium to form calcium oxalate which is insoluble at physiological pH. The calcium oxalate formed might precipitate in the kidney tubules. Hypocalcemia may also occur, which is what may affect the function of the heart and nerves and cause the above cardiovascular and nervous system effects. Chronic Potential Health Effects: Skin: Prolonged or repeated exposure may cause localized pain and cyanosis of the fingers, and even gangrenous changes. This has occurred on the hands of people working with oxalic acid solutions without rubber

Continued on Next Page

gloves.
Ingestion and Inhalation: Repeated or prolonged ingestion and inhalation may affect metabolism/appetite resulting in weight loss.


Section 12. Ecological Information

Ecotoxicity	Ecotoxicity in water (LC50): 4000 mg/l 24 hours [Fish (Bluegill)]. 1000 ppm 0.5 hours [Fish (Goldfish)]. 100 ppm 0.3 hours [Fish (Trout)].
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14. Transport Information

DOT Classification	Class 8: Corrosive material
Identification	: Corrosive Solid, Acidic, Organic, n.o.s. (Oxalic Acid, Dihydrate) UNNA: 3261 PG: III
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	Pennsylvania RTK: Oxalic acid dihydrate	
California Proposition 65 Warnings		
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). Oxalic Acid, anhydrous (CAS no. 144-62-7) is listed on the Canadian DSL Oxalic Acid, dihydrate (CAS 6153-56-6) is not listed on the Canadian DSL. EINECS no. for Oxalic Acid, anhydrous: 205-634-3 EINECS no. for Oxalic Acid, dihydrate: unlisted Oxalic Acid, dihydrate is on the inventory lists for China, Japan, and Philippines.	
Other Classifications	WHMIS (Canada)	CLASS E: Corrosive solid.
	DSCL (EEC)	R21/22- Harmful in contact with skin and if swallowed. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of water. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

Continued on Next Page

HMIS (U.S.A.)

Health Hazard	3
Fire Hazard	1
Reactivity	0
Personal Protection	j

National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada)
(Pictograms)



DSCL (Europe)
(Pictograms)



TDG (Canada)
(Pictograms)



ADR (Europe)
(Pictograms)



Protective Equipment



Gloves.



Synthetic apron.



Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

Section 16. Other Information

References Not available.

Other Special Considerations Not available.

PREPARATION DATE: SEPT. 2005

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, ProChem Chemicals Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.