

OXALIC ACID

OXA

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION								
Common Synonyms Ethanedioic acid	Solid crystals Sinks and mixes with water.	White Keep people away. Avoid contact with solid and dust. Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.	Odorless	<p>4.1 Flash Point: Not flammable</p> <p>4.2 Flammable Limits in Air: Not flammable</p> <p>4.3 Fire Extinguishing Agents: Not pertinent</p> <p>4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent</p> <p>4.5 Special Hazards of Combustion Products: Generates poisonous gases</p> <p>4.6 Behavior in Fire: Not pertinent</p> <p>4.7 Auto Ignition Temperature: Not flammable</p> <p>4.8 Electrical Hazards: Not pertinent</p> <p>4.9 Burning Rate: Not flammable</p> <p>4.10 Adiabatic Flame Temperature: Currently not available</p> <p>4.11 Stoichiometric Air to Fuel Ratio: Not pertinent</p> <p>4.12 Flame Temperature: Currently not available</p> <p>4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.</p> <p>4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p>	<p>7.1 Grades of Purity: Technical: 99.8% min.</p> <p>7.2 Storage Temperature: Ambient</p> <p>7.3 Inert Atmosphere: No requirement</p> <p>7.4 Venting: Open</p> <p>7.5 IMO Pollution Category: Currently not available</p> <p>7.6 Ship Type: Currently not available</p> <p>7.7 Barge Hull Type: Currently not available</p>								
Fire	Not flammable. Poisonous gases are produced in fire. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).			<p>8. HAZARD CLASSIFICATIONS</p> <p>8.1 49 CFR Category: Not listed</p> <p>8.2 49 CFR Class: Not pertinent</p> <p>8.3 49 CFR Package Group: Not listed.</p> <p>8.4 Marine Pollutant: No</p> <p>8.5 NFPA Hazard Classification:</p> <table> <tr> <th>Category</th> <th>Classification</th> </tr> <tr> <td>Health Hazard (Blue).....</td> <td>1 2</td> </tr> <tr> <td>Flammability (Red).....</td> <td>1 1</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>0 0</td> </tr> </table> <p>8.6 EPA Reportable Quantity: Not listed.</p> <p>8.7 EPA Pollution Category: Not listed.</p> <p>8.8 RCRA Waste Number: Not listed</p> <p>8.9 EPA FWC List: Not listed</p>		Category	Classification	Health Hazard (Blue).....	1 2	Flammability (Red).....	1 1	Instability (Yellow).....	0 0
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Exposure	<p>CALL FOR MEDICAL AID. DUST</p> <p>Will burn eyes, nose and throat. If inhaled, will cause difficult breathing. Move to fresh air.</p> <p>If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>SOLID</p> <p>Will burn skin and eyes. If swallowed, will cause nausea or loss of consciousness. Remove contaminated clothing and shoes. Flush affected areas with plenty of water.</p> <p>IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.</p>			<p>5. CHEMICAL REACTIVITY</p> <p>5.1 Reactivity with Water: No reaction</p> <p>5.2 Reactivity with Common Materials: No reaction</p> <p>5.3 Stability During Transport: Stable</p> <p>5.4 Neutralizing Agents for Acids and Caustics: Lime or soda ash</p> <p>5.5 Polymerization: Not pertinent</p> <p>5.6 Inhibitor of Polymerization: Not pertinent</p>									
Water Pollution	Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			<p>6. WATER POLLUTION</p> <p>6.1 Aquatic Toxicity: 4000 mg/l/24 hr/bluegill/TL₅₀/fresh water</p> <p>6.2 Waterfowl Toxicity: Currently not available</p> <p>6.3 Biological Oxygen Demand (BOD): 14%, 5 days</p> <p>6.4 Food Chain Concentration Potential: None</p> <p>6.5 GESAMP Hazard Profile:</p> <table> <tr> <td>Bioaccumulation: 0</td> </tr> <tr> <td>Damage to living resources: 1</td> </tr> <tr> <td>Human Oral hazard: 1</td> </tr> <tr> <td>Human Contact hazard: 0</td> </tr> <tr> <td>Reduction of amenities: 0</td> </tr> </table>		Bioaccumulation: 0	Damage to living resources: 1	Human Oral hazard: 1	Human Contact hazard: 0	Reduction of amenities: 0			
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<p>1. CORRECTIVE RESPONSE ACTIONS</p> <p>Dilute and disperse Stop discharge Collection Systems: Dredge Chemical and Physical Treatment: Burn; Neutralize</p> <p>2. CHEMICAL DESIGNATIONS</p> <p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: C₂H₂O₄ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 144-62-7 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51385</p> <p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Respirator for dust or mist protection; rubber, neoprene, or vinyl gloves; chemical safety glasses; rubbers, over leather or rubber safety shoes; apron or impervious clothing for splash protection.</p> <p>3.2 Symptoms Following Exposure: As dust or as a solution, can cause severe burns of eyes, skin, or mucous membranes. Ingestion of 5 grams has caused death with symptoms of nausea, shock, collapse, and convulsions coming on rapidly. Repeated or prolonged skin exposure can cause dermatitis and slow-healing ulcers.</p> <p>3.3 Treatment of Exposure: Get medical attention for all eye exposures and any serious overexposures; treatment is symptomatic. INHALATION: rinse mouth and/or gargle repeatedly with cold water. INGESTION: dilute by drinking large amounts of water; repeat at least once and then administer milk or milk of magnesia as an emollient; do NOT induce vomiting. EYES AND SKIN: flush thoroughly with water.</p> <p>3.4 TLV-TWA: 1 mg/m³</p> <p>3.5 TLV-STEL: 2 mg/m³</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Grade 3; LD₅₀ = 50 to 500 mg/kg</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Currently not available</p> <p>3.10 Vapor (Gas) Irritancy Characteristics: Not pertinent</p> <p>3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second-and third-degree burns on short contact and is very injurious to the eyes.</p> <p>3.12 Odor Threshold: Odorless</p> <p>3.13 IDLH Value: 500 mg/m³</p> <p>3.14 OSHA PEL-TWA: 1 mg/m³</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA AEGL: Not listed</p>				<p>9. PHYSICAL & CHEMICAL PROPERTIES</p> <p>9.1 Physical State at 15°C and 1 atm: Solid</p> <p>9.2 Molecular Weight: 126.07</p> <p>9.3 Boiling Point at 1 atm: Decomposes</p> <p>9.4 Freezing Point: 214.7°F = 101.5°C = 374.7°K</p> <p>9.5 Critical Temperature: Not pertinent</p> <p>9.6 Critical Pressure: Not pertinent</p> <p>9.7 Specific Gravity: 1.90 at 15°C (solid)</p> <p>9.8 Liquid Surface Tension: Not pertinent</p> <p>9.9 Liquid Water Interfacial Tension: Not pertinent</p> <p>9.10 Vapor (Gas) Specific Gravity: Not pertinent</p> <p>9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent</p> <p>9.12 Latent Heat of Vaporization: Not pertinent</p> <p>9.13 Heat of Combustion: Not pertinent</p> <p>9.14 Heat of Decomposition: Not pertinent</p> <p>9.15 Heat of Solution: Not pertinent</p> <p>9.16 Heat of Polymerization: Not pertinent</p> <p>9.17 Heat of Fusion: Currently not available</p> <p>9.18 Limiting Value: Currently not available</p> <p>9.19 Reid Vapor Pressure: Currently not available</p>									
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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
34	3.896		NOT		NOT		NOT
36	4.296						
38	4.696						
40	5.096						
42	5.496		PERTINENT		PERTINENT		PERTINENT
44	5.896						
46	6.296						
48	6.696						
50	7.096						
52	7.496						
54	7.896						
56	8.296						
58	8.696						
60	9.096						
62	9.496						
64	9.896						
66	10.300						
68	10.700						
70	11.100						
72	11.500						
74	11.900						
76	12.300						
78	12.700						
80	13.100						
82	13.500						
84	13.900						