

# AMMONIUM OXALATE

AOX

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms Ammonium oxalate hydrate Diammonium oxalate Oxalic acid, diammonium salt	Solid White Odorless Sinks and mixes slowly with water.		
<b>AVOID CONTACT WITH SOLID AND DUST. KEEP PEOPLE AWAY.</b> Wear dust respirator and rubber overclothing (including gloves). Stop discharge if possible. Call fire department. Isolate and remove discharged material. Notify local health and pollution control agencies. Protect water intakes.			
Fire	Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles and self-contained breathing apparatus. Extinguish with water or foam.		
<b>Exposure</b> CALL FOR MEDICAL AID. <b>DUST</b> POISONOUS IF INHALED OR IF SKIN IS EXPOSED. If inhaled will cause coughing or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  <b>SOLID</b> POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Will burn skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.		

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS
Stop discharge	2.1 CG Compatibility Group: Not listed 2.2 Formula: $(\text{NH}_4)_2\text{C}_2\text{O}_4 \cdot \text{H}_2\text{O}$ 2.3 IMO/UN Designation: 2445 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 6009-70-7 2.6 NAERG Guide No.: 154 2.7 Standard Industrial Trade Classification: 51481
<b>3. HEALTH HAZARDS</b>	
<b>3.1 Personal Protective Equipment:</b> Approved dust respirator; rubber or plastic-coated gloves; chemical goggles <b>3.2 Symptoms Following Exposure:</b> Ingestion or excessive inhalation of dust causes systemic poisoning; possible symptoms include pain in throat, esophagus, and stomach; mucous membranes turn white; vomiting, severe purging, weak pulse, cardiovascular collapse, neuromuscular symptoms. Contact with eyes causes irritation. Contact with skin causes irritation or severe burns. <b>3.3 Treatment of Exposure:</b> Speed is essential. INHALATION: remove to fresh air. INGESTION: call physician immediately; induce vomiting. EYES: flush with water and seek medical attention. SKIN: flush with water. OTHER: watch for swelling of the glottis and delayed constriction of the esophagus. <b>3.4 TLV-TWA:</b> Not listed. <b>3.5 TLV-STEL:</b> Not listed. <b>3.6 TLV-Ceiling:</b> Not listed. <b>3.7 Toxicity by Ingestion:</b> Currently not available <b>3.8 Toxicity by Inhalation:</b> Currently not available. <b>3.9 Chronic Toxicity:</b> Kidney damage <b>3.10 Vapor (Gas) Irritancy Characteristics:</b> Currently not available <b>3.11 Liquid or Solid Characteristics:</b> Currently not available <b>3.12 Odor Threshold:</b> Odorless <b>3.13 IDLH Value:</b> Not listed. <b>3.14 OSHA PEL-TWA:</b> Not listed. <b>3.15 OSHA PEL-STEL:</b> Not listed. <b>3.16 OSHA PEL-Ceiling:</b> Not listed. <b>3.17 EPA AEGL:</b> Not listed	

4. FIRE HAZARDS	7. SHIPPING INFORMATION
4.1 Flash Point: Not pertinent (combustible solid)	7.1 Grades of Purity: Pure, 98%-100.5%
4.2 Flammable Limits in Air: Not pertinent	7.2 Storage Temperature: Ambient
4.3 Fire Extinguishing Agents: Water, foam	7.3 Inert Atmosphere: No requirement
4.4 Fire Extinguishing Agents Not to Be Used: Used: Not pertinent	7.4 Venting: Open
4.5 Special Hazards of Combustion Products: Toxic oxides of nitrogen may form in fire.	7.5 IMO Pollution Category: Currently not available
4.6 Behavior in Fire: Currently not available	7.6 Ship Type: Currently not available
4.7 Auto Ignition Temperature: Not pertinent	7.7 Barge Hull Type: Currently not available
8. HAZARD CLASSIFICATIONS	9. PHYSICAL & CHEMICAL PROPERTIES
8.1 49 CFR Category: Not listed	9.1 Physical State at 15°C and 1 atm: Solid
8.2 49 CFR Class: Not pertinent	9.2 Molecular Weight: 142.11
8.3 49 CFR Package Group: Not listed	9.3 Boiling Point at 1 atm: (decomposes at 70°C)
8.4 Marine Pollutant: No	9.4 Freezing Point: Not pertinent (decomposes at 70°C)
8.5 NFPA Hazard Classification: Not listed	9.5 Critical Temperature: Not pertinent
8.6 EPA Reportable Quantity: 5000	9.6 Critical Pressure: Not pertinent
8.7 EPA Pollution Category: D	9.7 Specific Gravity: 1.50 at 18.5°C (solid)
8.8 RCRA Waste Number: Not listed	9.8 Liquid Surface Tension: Not pertinent
8.9 EPA FWPCA List: Yes	9.9 Liquid Water Interfacial Tension: Not pertinent
5. CHEMICAL REACTIVITY	10. VAPOR PRESSURE & FLAMMABILITY
5.1 Reactivity with Water: No reaction	10.1 Vapor (Gas) Specific Gravity: Not pertinent
5.2 Reactivity with Common Materials: Currently not available	10.2 Ratio of Specific Heats of Vapor (Gas): Not pertinent
5.3 Stability During Transport: Stable	10.3 Latent Heat of Vaporization: Not pertinent
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent	10.4 Heat of Combustion: Currently not available
5.5 Polymerization: Not pertinent	10.5 Heat of Decomposition: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent	10.15 Heat of Solution: 101 Btu/lb = 56 cal/g = $2.3 \times 10^3$ J/kg
6. WATER POLLUTION	10.6 Heat of Polymerization: Not pertinent
6.1 Aquatic Toxicity: Currently not available	10.17 Heat of Fusion: Currently not available
6.2 Waterfowl Toxicity: Currently not available	10.18 Limiting Value: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available	10.19 Reid Vapor Pressure: Currently not available
6.4 Food Chain Concentration Potential: None	
6.5 GESAMP Hazard Profile: Not listed	

NOTES

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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	2.533		NOT		NOT		NOT
36	2.666						
38	2.800						
40	2.933						
42	3.066						
44	3.200		PERTINENT		PERTINENT		PERTINENT
46	3.333						
48	3.466						
50	3.600						
52	3.733						
54	3.866						
56	4.000						
58	4.133						
60	4.266						
62	4.400						
64	4.533						
66	4.666						
68	4.800						
70	4.933						
72	5.066						
74	5.200						
76	5.333						
78	5.466						
80	5.600						
82	5.733						
84	5.866						