



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

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MSDS No. AA 305
Effective Date September 22, 1998

SECTION V HEALTH HAZARD DATA

AA 305

Threshold Limited Value

None established. (ACGIH 1992-93). The TWA/TLV of 1 mg./cu.m. for oxalic acid is suggested as an order-of magnitude value for the material. The ACGIH/STEL value for oxalic acid is 2 mg./cu.m.

Effects of Overexposure

INHALATION: Of dust or mist may irritate nose, throat, lungs. Excessive inhalation may cause systemic poisoning; possible symptoms include pain in throat, esophagus and stomach. Exposed areas of mucous membrane turn white. **INGESTION:** May cause systemic oxalate poisoning affecting central nervous system (CNS), liver or kidneys. May cause hypocalcemia, neuromuscular symptoms and cardiovascular collapse and death, if swallowed. Can irritate or damage mouth, throat, stomach. LD50 (ori-rat): 1.1 gram/kg. **SKIN:** May cause mild to severe irritation, depending on length of exposure and promptness in administering first-aid. LD50 (rabbit): greater than 2.0 gram/kg. **EYES:** Material is an ocular irritant and may cause corneal burns. Healing has been complete when first-aid has been promptly initiated.

Emergency and First Aid Procedures

SKIN: Flush with water, then wash with mild soap and water. If irritation develops, get medical attention. **INGESTION:** If swallowed, do NOT induce vomiting. If conscious, immediately give large volumes of water or milk to drink. Call a physician immediately. Never give anything by mouth to an unconscious person. **EYES:** Immediately flush thoroughly with water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get immediate medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable		Conditions to Avoid	Excessive temperature and heat. Decomposes at 70°C (158°F).
	Stable	X		

Incompatibility (Materials to Avoid)	Strong oxidizers; can react violently with sodium hypochlorite plus ammonium acetate.
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Hazardous Decomposition Products	On heating, we would expect ammonia gas and oxalic acid. Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, and oxides of nitrogen (NO _x).
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Hazardous Polymerization		Conditions to Avoid	Not applicable.
May Occur	Will Not Occur		
	X		

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled	Sweep or shovel up dry chemical into an empty container, avoiding dusty conditions, and close for later use or disposal. Use skin and eye protection during clean-up operations. Maximize recovery; flush residue with water, if permitted by applicable disposal regulations.
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Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Dispose of in an approved incinerator equipped with an afterburner and scrubber or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type)	None should be needed in normal laboratory handling. If dusty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved dust mask or respirator.		
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Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical Safety glasses.
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Other Protective Equipment	Goggles, lab coat, ventilation hood, proper gloves, eye wash station.
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SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing	Store in a cool, dry place. Keep away from food or feed products. Wash thoroughly after handling.
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Keep container tightly closed when not in use.

Other Precautions	Read label on container before using. Do not wear contact lenses when working with chemicals.
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
Avoid contact with skin, eyes and clothing. Avoid breathing dust. Use with adequate ventilation. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.



Revision No. 5	Date 9/22/98	Approved Michael Raszeja	Chemical Safety Coordinator	MR
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	AMMONIUM OXALATE	<div><div>CHEMTREC 800-424-9300 Day 716-226-6177</div><div>NFPA HAZARD RATING LEAST SLIGHT MODERATE HIGH EXTREME 0 1 2 3 4</div><div>HMIS * Health 3 Fire 0 Reactivity 1</div></div>
Chemical Synonyms	Ethanedioic acid diammonium salt	
Formula	(NH ₄) ₂ C ₂ O ₄ •H ₂ O	
Unit Size	up to 2.5 Kg	
C.A.S. No.	6009-70-7 (Monohydrate)	

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Ammonium Oxalate	100%	None established.
DANGER!  POISON  CAN BE		
FATAL IF SWALLOWED. CAUSES IRRITATION		
TO SKIN, EYES AND MUCOUS MEMBRANES.		

SECTION III PHYSICAL DATA

Melting Point (°F)	Decomposes on heating.	Specific Gravity (H ₂ O = 1)	1.50
Boiling Point (°F)	Decomposes.	Percent Volatile by Volume (%)	Non-volatile (NA).
Vapor Pressure (mm Hg)	Negligible as solid.	Evaporation Rate ()	Non-volatile (NA).
Vapor Density (Air=1)	4.9		
Solubility in Water	25 grams per 100 mL water at 32°F.		
Appearance & Odor	Fine white or colorless crystals; odorless or slight ammoniacal odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable.	Flammable Limits in Air % by Volume	N/A	Lower	Upper
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Extinguisher Media	Use any media suitable for extinguishing supporting fire.
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SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Use water spray to cool fire-exposed containers, to knock down vapors and localize any spilled material.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 151)

UNUSUAL FIRE AND EXPLOSION HAZARDS

Dust-air mixtures might ignite or explode. Dangerous when heated to decomposition, emits toxic fumes; can react vigorously with oxidizing materials.

D.O.T. Toxic solid, inorganic, n.o.s., (Ammonium oxalate), 6.1, UN 3288, PG III

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20