MSDS **Material Safety Data Sheet**

From: Avantor Performance Materials, Inc.
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MACRON FINE CHEMICALS™ J.T.Baker®

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service, 1-855-AVANTOR (855-282-6867) for assistance.

AMMONIUM OXALATE

1. Product Identification

Synonyms: Ethanedioic acid, diammonium salt monohydrate; Ammonium oxalate, monohydrate
CAS No.: 1113-38-8 (Anhydrous) 6009-70-7(monohydrate)
Molecular Weight: 142.11
Chemical Formula: NH4OCOCOONH4 . H2O
Product Codes:
J.T. Baker: 0746
Macron: 3452

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ammonium Oxalate	1113-38-8	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. MAY CAUSE BURNS TO RESPIRATORY TRACT AND SEVERE IRRITATION TO SKIN AND EYES. MAY AFFECT KIDNEYS.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Ammonium oxalate is very poisonous by ingestion and inhalation.

Inhalation:
Inhalation of dust is corrosive to mucous membranes. Oxalates can be absorbed through the lungs. Symptoms of poisoning include nervousness, cramps, central nervous system depression.
Ingestion:
Mean lethal dose for oxalates in adults is estimated at 15-30 grams with death within a few hours or even minutes. Corrosive action on the mucosa and severe gastrointestitis can occur with pain, vomiting, etc. Sharp reduction of serum calcium can cause disfunction of the brain. Calcium oxalate may be deposited in the kidneys.
Skin Contact:
Skin contact may produce severe skin irritation with burning, redness.
Eye Contact:
May cause severe irritation and pain. May cause burns.
Chronic Exposure:
Circulatory failure or nervous system irregularities may follow prolonged calcium metabolism disturbances due to oxalation.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Carefully monitor cardiovascular, respiratory, neurologic and renal functions. Treat supportively in consultation with a medical toxicologist.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Practice good personal hygiene and wash thoroughly after handing material.
Do not eat, drink, or smoke in the workplace.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless crystals or granules.
Odor:
Odorless.
Solubility:
11.8 g/100 g water @ 50C (122F)
Specific Gravity:
1.50
pH:
6.4 (0.1 molar solution)
% Volatiles by volume @ 21C (70F):
0

Boiling Point:
Not applicable.
Melting Point:
70C (158F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Burning may produce ammonia, nitrogen oxides.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Sodium hypochlorite plus ammonium acetate , strong acids.
Conditions to Avoid:
Heat, incompatibles.

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

--------\Cancer Lists\----------

	---NTP Carcinogen---		
Ingredient	Known	Anticipated	IARC Category
Ammonium Oxalate (1113-38-8)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: CORROSIVE SOLID,N.O.S. (AMMONIUM OXALATE)
Hazard Class: 8
UN/NA: UN1759
Packing Group: III
Information reported for product/size: 250LB

International (Water, I.M.O.)

Proper Shipping Name: CORROSIVE SOLID,N.O.S. (AMMONIUM OXALATE)
Hazard Class: 8
UN/NA: UN1759
Packing Group: III
Information reported for product/size: 250LB

International (Air, I.C.A.O.)

Proper Shipping Name: CORROSIVE SOLID,N.O.S. (AMMONIUM OXALATE)
Hazard Class: 8
UN/NA: UN1759
Packing Group: III
Information reported for product/size: 250LB

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Ammonium Oxalate (1113-38-8)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Ammonium Oxalate (1113-38-8)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Ammonium Oxalate (1113-38-8)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Ammonium Oxalate (1113-38-8)	5000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No

Reactivity: No (Mixture / Solid)

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **4** Flammability: **1** Reactivity: **0**
Label Hazard Warning: POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. MAY CAUSE BURNS TO RESPIRATORY TRACT AND SEVERE IRRITATION TO SKIN AND EYES. MAY AFFECT KIDNEYS.
Label Precautions: Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep container closed.
Use only with adequate ventilation. Wash thoroughly after handling.
Label First Aid: If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration.
If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.

Disclaimer:
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Prepared by: Environmental Health & Safety