Fisher Scientific

MATERIAL SAFETY DATA SHEET

Ammonium oxalate monohydrate

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium oxalate monohydrate

Catalog Numbers: A/6000/53, A/6000/60, A/6000/71, A/6040/48, A/6040/53, A/6040/60

Synonyms: Diammonium oxalate, monohydrate; Ethanedioic acid, diammonium salt monohydrate; Oxalic acid, diammonium salt monohydrate.

Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#	Hazard Symbols:	Risk Phrases:
6009-70-7	Ammonium oxalate monohydrate	> 99	unlisted		

Text for R-phrases: see Section 16

Hazard Symbols: XN

Risk Phrases: 21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful in contact with skin and if swallowed.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Oxalate is an irritant and may cause dermatitis. Skin lesions begin with epithelial cracking and the formation of slow-healing ulcers. The fingers may appear cyanotic.

Ingestion: Ulcerations of the mouth, vomiting of blood, and rapid appearance of shock, convulsions, twitching, tetany, and cardiovascular collapse may occur following ingestion of oxalic acid or its soluble salts. Systemic effects may be due to formation of calcium oxalate which is insoluble at physiological pH and can be deposited in the brain and kidney tubules. Resultant hypocalcemia might disturb the function of the heart and nerves. Mean lethal dose for oxalates in adults is estimated at 10 - 30 grams (143 - 428 mg/kg).

Inhalation: Inhalation of oxalic acid dust or vapor produces irritation of the respiratory tract, protein in the urine, nosebleed, ulceration of the mucous membranes, headache, nervousness, cough, vomiting, emaciation, back pain (due to kidney injury), and weakness.

Chronic: Inhalation of oxalic acid dust or mist over a long period of time might result in weight loss and respiratory tract inflammation. Rats administered oxalic acid at 2.5 and 5% in the diet for 70 days developed depressed thyroid function and weight loss. A study of railroad car

cleaners in Norway who were heavily exposed to oxalic acid solutions and vapors revealed a 53% prevalence of urolithiasis (the formation of urinary stones), compared to a rate of 12% among unexposed workers from the same company.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Antidote: Intravenous administration of calcium gluconate or calcium chloride may be required if hypocalcemia or hypocalcemic tetany occur.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Oxalates slowly corrode steel.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 1113-38-8:

CAS# 6009-70-7:

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Crystalline powder
Color:	white
Odor:	odorless
pH:	6.4 (0.1M soln)
Vapor Pressure:	Not applicable.
Viscosity:	Not available
Boiling Point:	Decomposes.
Freezing/Melting Point:	70 deg C (158.00°F)
Autoignition Temperature:	Not applicable
Flash Point:	Not applicable.
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
Decomposition Temperature:	
Solubility in water:	Soluble
Specific Gravity/Density:	1.5
Molecular Formula:	C2H8N2O4.H2O
Molecular Weight:	142.11

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Dust generation, excess heat, Oxalates slowly corrode steel..
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Nitrogen oxides, carbon monoxide, carbon dioxide, formic acid, ammonia.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 1113-38-8: RO2750000
CAS# 6009-70-7: None listed

LD50/LC50: RTECS: Not available. RTECS: Not available. Other: CAS# 1113-38-8; Rat TDLo Oral: 9 mL/kg/3D continuous. Published data indicated liver changes and biochemical effects. Mean lethal dose for oxalates in adults is estimated at 10-30 grams (143-428 mg/kg).

Carcinogenicity: Ammonium oxalate anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Ammonium oxalate monohydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	TOXIC SOLID, ORGANIC, N.O.S.*	TOXIC SOLID, ORGANIC, N.O.S.	TOXIC SOLID, ORGANIC, N.O.S.
Hazard Class:	6.1	6.1	6.1
UN Number:	2811	2811	2811
Packing Group:	III	III	III

USA RQ: CAS# 6009-70-7: 5000 lb final RQ (listed under Ammonium oxalate); 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 21/22 Harmful in contact with skin and if swallowed.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 1113-38-8: Not available

CAS# 6009-70-7: 1

Canada

CAS# 1113-38-8 is listed on Canada's DSL List

US Federal

TSCA

CAS# 1113-38-8 is listed on the TSCA Inventory.

CAS# 6009-70-7 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form in on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

Text for R-phrases from Section 2

MSDS Creation Date: 9/14/1998

Revision #11 Date 9/14/2006

Revisions were made in Sections: 11

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