Material Safety Data Sheet
Potassium oxalate monohydrate

MSDS# 19494

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium oxalate monohydrate
Catalog Numbers: AC207710000, AC207710025, AC207710250, AC207715000, AC424020000, AC424025000

Synonyms: Oxalic acid, dipotassium salt, monohydrate; Ethanedioic acid, dipotassium salt, monohydrate; Dipotassium oxalate monohydrate.

Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
For information in the US, call: 201-796-7100
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

Risk Phrases:
CAS#: 6487-48-5
Chemical Name: Potassium oxalate monohydrate
%: > 99
EINECS#: unlisted

Hazard Symbols:

Text for R-phrases: see Section 16

Hazard Symbols: XN

Risk Phrases: 21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Harmful if absorbed through the skin. Hygroscopic (absorbs moisture from the air). Harmful if swallowed. May cause kidney damage. Causes eye, skin, and respiratory tract irritation. Target Organs: Kidneys, heart, eyes, skin, brain, nerves, mucous membranes.

Potential Health Effects

Eye: Causes eye irritation.
Skin: Harmful if absorbed through the 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. 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, Inhalation: ulceration of the mucous membranes, headache, nervousness, cough, vomiting, emaciation, back pain (due to kidney injury), and weakness.
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.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits: Not available

Explosion Limits: Not available

NFPA Rating: health: 2; flammability: 1; instability: 0;

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

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. Keep container tightly closed. Avoid breathing dust.

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

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium oxalate anhydrous</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Potassium oxalate monohydrate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Potassium oxalate anhydrous: None listed Potassium oxalate monohydrate: None listed
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

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: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Color: white
Odor: odorless
pH: neutral in solution
Vapor Pressure: Negligible.
Vapor Density: Negligible.
Evaporation Rate: Negligible.
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: 356 deg C (672.80°F)
Decomposition Temperature: Not available
Solubility in water: 364 g/L @ 20°C
Specific Gravity/Density: 2.13
Molecular Formula: C2O4K2.H2O
Molecular Weight: 184.24

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Dust generation, moisture, excess heat, Oxalates slowly corrode steel.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, formic acid, dipotassium oxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 583-52-8: RO2885000
CAS# 6487-48-5: None listed
RTECS: Not available. RTECS: Not available. Other: CAS# 583-52-8: Woman LDLo - Oral: 1 gm/kg.
LD50/LC50: Published data indicated arrhythmias including changes in conduction), shock, and gastrointestinal changes. Mean lethal dose for oxalates in adults is estimated at 10-30 grams (143-428 mg/kg).
Carcinogenicity: Potassium oxalate anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Potassium 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

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: TOXIC SOLIDS, ORGANIC, N.O.S.
Hazard Class: 6.1
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# 583-52-8: Not available
CAS# 6487-48-5: 1

Canada
CAS# 583-52-8 is listed on Canada's DSL List
Canadian WHMIS Classifications: D1B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 583-52-8 is not listed on Canada's Ingredient Disclosure List.
CAS# 6487-48-5 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA
CAS# 583-52-8 is listed on the TSCA Inventory.
CAS# 6487-48-5 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 is on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 5/11/1998
Revision #6 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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