CALEDON LABORATORY CHEMICALS

MATERIAL SAFETY DATA SHEET

AMMONIUM OXALATE

.

PRODUCT IDENTIFICATION

Chemical Name and Synonyms:
Ammonium oxalate; Diammonium ethanedioate; Oxalic acid, diammonium salt
Chemical Family:
Carboxylic acid salt
Chemical Formula:
$(COONH_4)_2.H_2O$
Product Use:
Laboratory reagent
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
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(905) 877-0101
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(905) 877-6666
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HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	*%*	*TLV Units*	*CAS No.*
Ammonium Oxalate	*99*	*Not established*	*6009-70-7*

PHYSICAL DATA

Physical State:
Solid
Odour and Appearance:
Colourless crystals or granules; odourless
Odour Threshold (ppm):
Not applicable
Vapour Pressure (mm Hg):
0 (does not form vapour)
Vapour Density (Air = 1):
Not applicable
Evaporation Rate:
Not applicable
Boiling Point (degrees C):
Not applicable
Melting Point (degrees C):
70°C (decomposes)
pH:
6.4 (0.1M)
Specific Gravity:
1.502
Coefficient of Water/Oil distribution:
Not available

SHIPPING DESCRIPTION

UN:
Not regulated
T.D.G. Class:
Not regulated
Pkg. Group:
Not regulated

REACTIVITY DATA

Chemical Stability:
Normally stable. Decomposes when heated.
Incompatibility with other substances:
May react violently or explosively with strong oxidizing agents (sodium hypochlorite, ammonium acetate), or strong acids. Corrosive to iron, cast steel, lead. Mildly corrosive to other metals.
Reactivity:
Decomposes at 70°C. Avoid excessive heat, generation of dust, incompatible materials.
Hazardous Decomposition Products:
When heated to decomposition forms toxic fumes of oxides of nitrogen, NH_3, CO_x

FIRE AND EXPLOSION DATA

Flammability:
Non combustible
Extinguishing Media:
Use an extinguisher appropriate to the surrounding material that is burning. Firefighters should wear protective equipment and clothing sufficient to prevent inhalation of vapours and contact with skin and eyes.
Flash Point (Method Used):
Not applicable (does not form vapour)
Autoignition Temperature:
Not applicable
Upper Flammable Limit (% by volume):
Not available
Lower Flammable Limit (% by volume):
Not available
Hazardous Combustion Products:
Toxic fumes of oxides of nitrogen, NH_3, CO_x
Sensitivity to Impact:
Probably not sensitive, stable material
Sensitivity to Static discharge:
None identified

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:
LD_{50}:
(oral, human) 5-30 g - 70-429 mg/kg (oxalates)
LC_{50}:
Not available
Effects of Acute Exposure to Product:
Inhaled:
Harmful. Inhalation of dust may irritate, causing sore throat, coughing, difficult breathing. High concentrations can cause severe irritation and tissue damage to nose, throat and upper respiratory system, even pulmonary edema, which can be fatal. Symptoms of pulmonary edema (difficult breathing, cyanosis) may be delayed for several hours. May cause systemic poisoning with symptoms including nervousness, cramps, central nervous system depression, and kidney damage.
In contact with skin:
Dust or solutions cause redness and swelling. Prolonged contact causes epithelial cracking and the formation of slow-healing ulcers. Fingers may ap;ear bluish. No specific information on skin absorption, but a related chemical, oxalic acid, can be absorbed and has produced delayed localized pain, discolouration of the skin, and brittle, blue- coloured fingers and nails.
In contact with eyes:
Dust or solutions irritate severely, causing redness and pain, blurred vision and possible burns and eye damage.
Ingested:
Poisonous. The average lethal dose for oxalates by ingestion in adults is approximately 15-30 grams which will result in death. Lowest reported lethal dose for a related oxalte salt

(potassium oxalate) is 5 g (about 70 mg/kg). Ingestion of solid or solutions of ~4% or more cause burning of the mouth and throat followed by profuse vomiting which is sometimes bloody due to corrosive action on the mucosa. Other symptoms include headache, cramps, pain and twitching in muscles, weak and irregular heart-beat, drop in blood pressure, signs of heart failure, confusion, convulsions, coma and possible death.

Effects of Chronic Exposure to Product:

No specific information is available for ammonium oxalate, but long-term exposure to oxalic acid has been linked to formation of stones in the kidney and urinary tract, and depression of thyroid function. Prolonged or repeated exposure to oxalate solutions can cause localized pain and discolouration of the fingers and nails, and possible ulcers and gangrene.

Carcinogenicity:

Not listed as a carcinogen by NTP, IARC, or OSHA

Teratogenicity:

No information available

Reproductive Effects:

No information available

Mutagenicity:

No information available

Synergistic Products:

None known

PREVENTIVE MEASURES

Engineering Controls:

Corrosion-resistant exhaust ventilation, separate from other ventilation systems.

Respiratory Protection:

Dust/mist mask. Use only in chemical fumehood. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH/OSHA approved full-face high-efficiency dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

Eye Protection:

Chemical safety goggles and/or face shield.

Skin Protection:

Rubber or plastic gloves. Impervious apron, sleeves, boots, and other clothing sufficient to prevent contact.

Other Personal Protective Equipment:

Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure:

Restrict access to spill area. Cleanup personnel must wear protective equipment and clothing sufficient to prevent inhalation of dusts or mists and contact with skin, eyes and clothing. Do not touch spilled material. Stop or reduce leak if safe to do so. Transfer carefully into labelled container and arrange removal by disposal company. Absorb leaks of solutions on inert absorbent material and collect contaminated absorbent in labelled containers. Treat contaminated absorbent with the same care you would use for the chemical. Wash site of spillage thoroughly with detergent and copious amounts of water.

Waste Disposal:

Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment:

TOXIC. CORROSIVE. Workers must be thoroughly trained in the hazards of this substance and its safe use and must wear appropriate protective clothing and equipment. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Keep work area free of any extraneous materials - use good housekeeping procedures. Avoid generating dust. Follow routine safe handling procedures. Avoid all contact with skin and eyes and any inhalation of dust or vapours. Wash thoroughly after handling. Keep containers tightly closed when not in use or when empty.

Storage Requirements:

Store in suitable, labelled containers, in a cool, dry, well ventilated area, out of direct sunlight, and away from incompatible materials and heat sources. Keep containers tightly closed when not in use and when empty. Do not expose sealed containers to elevated temperatures. Protect from damage, and inspect frequently for signs of leaking. Treat empty containers with caution as they may contain hazardous residues. It is good practice to seal the floors of the storage area to prevent absorption, and to provide raised sills or a trench to a safe location. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area.

FIRST AID MEASURES

Specific Measures:

Eyes:

Immediately flush eyes thoroughly with gently running water for at least 60 minutes, holding eyelids open while flushing. Wear gloves to avoid contact during first aid procedures. Take care not to flush contaminated water into unaffected eye. Get medical attention immediately. Flushing may be continued while victim is transported to medical facility.

Skin:

Immediately flush contaminated skin with plenty of running water for a least twenty (20) minutes. Wear gloves to avoid contact. Under running water remove contaminated clothing (shoes, watchbands, belts). If irritation persists, continue flushing. Get medical attention immediately. Decontaminate clothing before reuse or discard.

Inhalation:

Remove to fresh air immediately. Give oxygen for any breathing difficulty. Get medical attention immediately. If breathing has stopped, begin artifical respiration immediately. Symptoms of pulmonary edema may appear up to 48 hours after exposure; maintain observation of victim.

Ingestion:

If victim is alert and NOT convulsing, rinse mouth thoroughly with water and give 2 to 4 glasses of water to drink to dilute. Do not induce vomiting. If vomiting occurs spontaneously, have victim lean forward to reduce risk of aspiration. Rinse mouth and repeat administration of water. Seek medical attention immediately.

REFERENCES USED

CCINFO disc: Cheminfo
Budavari: The Merck Index, 12th ed., 1997
Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987
Sax; Dangerous Properties of Industrial Materials, 5th ed., 1979
Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued:

May 6, 1991

Revision:

January 2012

MSDS:

1520-1

Proposed WHIMS Classification:

D1B; D2B

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