

**SODIUM OXALATE****PRODUCT IDENTIFICATION****Chemical Name and Synonyms:**

Sodium oxalate; Sodium ethanedioate; Oxalic acid, disodium salt; Ethanedioic acid, disodium salt

**Chemical Family:**

Saturated aliphatic carboxylic acid salt

**Chemical Formula:**

(COONa)<sub>2</sub>

**Product Use:**

Laboratory reagent

**Manufacturer's Name and Address:**

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**HAZARDOUS INGREDIENTS OF MATERIALS**

Ingredients	%	TLV Units	CAS No.
Sodium oxalate	~98	Not established	62-76-0

**PHYSICAL DATA****Physical State:**

Solid

**Odour and Appearance:**

White crystalline powder, odourless

**Odour Threshold (ppm):**

Not applicable

**Vapour Pressure (mm Hg):**

0

**Vapour Density (Air = 1):**

Not applicable

**Evaporation Rate:**

Not applicable

**Boiling Point (degrees C):**

Not applicable, decomposes

**Melting Point (degrees C):**

250-252°C (decomposes)

**pH:**

7.33 (saturated solution (3.4% or 0.25 M)) (calculated)

**Specific Gravity:**

2.340 @ 25°C

**Coefficient of Water/Oil distribution:**

LogP(oct) = -7.0 (estimated)

**SHIPPING DESCRIPTION****UN:**

Not regulated

**T.D.G. Class:**

Not regulated

**Pkg. Group:**

Not regulated

**REACTIVITY DATA****Chemical Stability:**

Stable. Decomposes if heated to melting point.

Hygroscopic; absorbs moisture from air.

**Incompatibility with other substances:**

May react violently or explosively with strong oxidizers.

Corrosive to cast steel; mildly corrosive to stainless steel, aluminum and titanium.

**Reactivity:**

Avoid excessive heat, ignition sources, all incompatible materials, and generation of dust.

**Hazardous Decomposition Products:**

CO<sub>x</sub>

**FIRE AND EXPLOSION DATA****Flammability:**

Probably not flammable.

**Extinguishing Media:**

Use extinguishing media appropriate to the surrounding media.

Use water spray to cool containers, disperse vapours, and flush material away from area of fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust and fumes, and contact with skin and eyes.

**Flash Point (Method Used):**

Not available

**Autoignition Temperature:**

Not available

**Upper Flammable Limit (% by volume):**

Not available

**Lower Flammable Limit (% by volume):**

Not available

**Hazardous Combustion Products:**

CO<sub>x</sub>

**Sensitivity to Impact:**

None identified

**Sensitivity to Static discharge:**

Insufficient information available

**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:**

(oral, mouse) 5,094 mg/kg

**LC<sub>50</sub>:**

Not available

Mean lethal dose for oxalates in adults estimated at 10-30 grams which equals 143-428 mg/kg

**Effects of Acute Exposure to Product:****Inhaled:**

Toxic, irritant. Dusts or mists may irritate the upper respiratory tract, causing soreness in the chest, coughing, and difficult breathing, possible ulceration of the mucous membranes, and nosebleeds. Severe overexposure can cause systemic poisoning and central nervous system depression with headache, vomiting, nervousness, cramps and weakness, and kidney damage with protein in the urine.

**In contact with skin:**

Causes cracking of the skin, and slow healing ulcers. Concentrated solutions (4% or greater) may cause delayed irritation. Dust may irritate, particularly if skin is damp, causing a solution to form.

**In contact with eyes:**

Dust or mist is severe eye irritant based on animal information. No specific human information is available. May cause corneal damage.

**Ingested:**

No specific information available, but expected to have the same toxicity as oxalic acid, which is toxic to humans. Can cause burning pain in the mouth, throat and stomach, bloody vomiting, headache, muscle cramps, and tetany (sharp flexion of the wrist and ankle joints, muscle twitching, cramps and

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convulsions), weak and irregular heartbeat, drop in blood pressure, signs of heart failure. Large doses rapidly cause shock, convulsions, coma, and possible death. Mean lethal dose by ingestion of oxalates is 10-15 grams, but the lowest reported dose of a related salt, potassium oxalate, was 5 g. Sharp reduction of serum calcium can cause cardiac disfunction, coma. If ingestion is not lethal, calcium may be deposited in kidneys and liver, causing kidney damage and possible kidney failure, which may be somewhat delayed. Ingestion is not a normal route of occupational exposure.

## **Effects of Chronic Exposure to Product:**

Long-term studies in rats and dogs have shown increased incidence of kidney stones with administration of sodium oxalate by injection or ingestion. Long-term exposure in workers has been linked to kidney stone formation. Long term exposure to oxalate solutions can cause localized pain and discolouration of the fingers and nails, possible ulcers and gangrene.

## **Carcinogenicity:**

No information available

## **Teratogenicity:**

No information available

## **Reproductive Effects:**

Some effects in animal testing

## **Mutagenicity:**

No information available

## **Synergistic Products:**

None known

## **PREVENTIVE MEASURES**

### **Engineering Controls:**

Local corrosion-resistant exhaust ventilation required.

### **Respiratory Protection:**

Dust mask. If dust or mist is present, NIOSH/OSHA-approved half-face dust/mist respirator. High or unknown concentrations, as in fire or spill conditions: full facepiece, positive pressure-supplied-air respirator.

### **Eye Protection:**

Chemical safety goggles, and/or face shield.

### **Skin Protection:**

Rubber gloves. Other impervious protective clothing, apron, sleeves, coveralls and boots sufficient to prevent contact.

### **Other Personal Protective Equipment:**

Eye wash and safety shower in work area.

### **Leak and Spill Procedure:**

Evacuate and ventilate area. Cleanup personnel must wear protective equipment and clothing sufficient to prevent inhalation of dust or mists, and contact with skin and eyes. Do not touch spilled material. Prevent from entering sewers or waterways. Contain or cover with inert absorbent and transfer carefully into container for removal by disposal company. Contaminated absorbent may pose the same hazards as the product; treat with caution. Wash site of spillage thoroughly with water and detergent.

### **Waste Disposal:**

Follow all federal, provincial and local regulations for disposal.

### **Handling Procedures and Equipment:**

**TOXIC, IRRITATING.** Persons working with this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Use good housekeeping practices; keep work area free of extraneous materials. Prevent accumulations of dust. Avoid all contact. Keep containers closed when not in use and when empty. Wash

thoroughly after handling. Empty containers may contain hazardous residues, treat with caution.

### **Storage Requirements:**

Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Use corrosion-resistant structural materials, lighting and ventilation systems in the storage area. Keep containers tightly closed when not in use and when empty. Store away from incompatible materials. Protect from damage and inspect frequently for signs of leakage.

## **FIRST AID MEASURES**

### **Specific Measures:**

#### **Eyes:**

Immediately flush eyes with gently running water for at least twenty (20) minutes, holding eyelids open during flushing. Take care not to rinse contaminated water into unaffected eye. Wear protective gloves to avoid contact during first aid procedures. Get medical attention IMMEDIATELY.

#### **Skin:**

Remove contaminated clothing, including rings, watches, belts, and shoes. Flush affected areas with running water for at least ten to twenty (10-20) minutes. If irritation persists, obtain medical advice immediately. Decontaminate clothing before reuse, or discard.

#### **Inhalation:**

Move victim to fresh air. Give oxygen and get medical attention for any breathing difficulty. Give artificial respiration ONLY if breathing has stopped. Obtain medical advice immediately.

#### **Ingestion:**

If victim is alert and not convulsing, give 1/2 to 1 glass of water or milk to dilute material. DO NOT INDUCE VOMITING. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Obtain medical attention IMMEDIATELY. While waiting for medical help to arrive, or en route to medical facility, give calcium tablets, milk, or a dilute solution of any soluble calcium salt (e.g. calcium lactate). Calcium inactivates the oxalate by precipitating it as an insoluble calcium oxalate salt.

## **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:**

March 13, 1992

### **Revision:**

May 2012

### **MSDS:**

8080-1

### **Proposed WHMIS Designation:**

D1B

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