Oxalic acid dihydrate

sc-203171

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

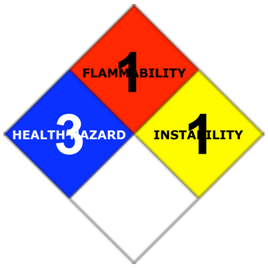
PRODUCT NAME

Oxalic acid dihydrate

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

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Santa Cruz, California 95060
800.457.3801 or 831.457.3800
EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
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(1-800-CHEMCALL) or call +613 9573 3112

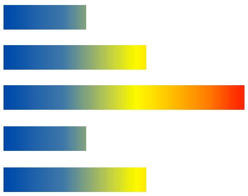
SYNONYMS

C2-H6-O6, (COOH)2.2H2O, "ethanedioic acid", "ethandioic acid", "oxalic acid, dihydrate"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min Max
Flammability:	1	
Toxicity:	2	
Body Contact:	4	
Reactivity:	1	
Chronic:	2	



Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Causes severe burns.
Risk of serious damage to eyes.
Possible risk of harm to the unborn child.
Harmful in contact with skin and if swallowed.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
■ Ingestion of acidic corrosives may produce burns around and in the mouth. the throat and esophagus.
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■ Oxalic acid is a minor, normal body constituent occurring in blood at approximately 0.150 mg/100 ml and in kidney, muscle and liver at about 0.050 mg/100 ml dry weight, but higher concentrations are toxic.
Ingestion of 5 grams has caused death within hours. It is a systemic poison which affects the central nervous system and kidney function. Low doses (i.e. excess in blood) may cause hypocalcemia (presence in the blood of an abnormally low concentration of calcium).
Oxalic acid occurs naturally in the common weed Oxalis, `sour sobs'.
■ Ingestion of low-molecular organic acid solutions may produce spontaneous hemorrhaging, production of blood clots, gastrointestinal damage and narrowing of the esophagus and stomach entry.
■ Soluble or solubilized oxalates act as severe corrosive agents within the alimentary tract and may be lethal as a result of severe gastroenteritis and secondary shock. Where gastrointestinal symptoms are absent (as is the case with dilute solutions) systemic effects may dominate resulting in muscle twitching, cramps, depression of respiratory and cardiac functions.
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EYE

■ The material can produce severe chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.
■ If applied to the eyes, this material causes severe eye damage.
■ Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.
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■ Solutions of low-molecular weight organic acids cause pain and injuryto the eyes.

SKIN

■ The material can produce severe chemical burns following direct contactwith the skin.
■ Skin contact with the material may be harmful; systemic effects may resultfollowing absorption.
■ Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.
■ Solutions of 5% to 10% oxalic acid are irritating to the skin after prolonged contact; early gangrene may occur after hand immersion in oxalate solutions.
■ Oxalate ion is an irritant and may cause dermatitis. Following contact skin lesions may develop. Epithelial cracking and slow-healing ulceration may follow.They fingers may appears cyanotic.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
■ Solution of material in moisture on the skin, or perspiration, mayincrease irritant effects.

INHALED

■ The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
■ Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.
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■ Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.
■ Inhalation of oxalic acid dusts or vapours can cause ulceration of the mucous membranes of the nose and throat, epistaxis (nosebleed), headache and nervousness. The airborne dust behaves as a strong acid producing severe local burns of the mucous membranes.
■ Inhalation of soluble oxalates produces irritation of the respiratory tract. Systemic effects may include protein in the urine (albuminuria), ulceration of the mucous membranes, headaches, nervousness, cough, vomiting, emaciation, back pain (due to kidney injury) and weakness. Inhalation of soluble oxalates over a long period of time might result in weight loss and respiratory tract inflammation.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.
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Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Results in experiments suggest that this material may cause disorders in the development of the embryo or fetus, even when no signs of poisoning show in the mother.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Exposure to the material may cause concerns for human fertility, on the basis that similar materials provide some evidence of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects, but which are not a secondary non-specific consequence of other toxic effects.

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Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
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Chronic exposure to oxalates may result in circulatory failure or nervous system irregularities may follow prolonged calcium metabolism due to oxalation.
Prolonged and severe exposure can cause chronic cough, albuminuria, vomiting, pain in the back and gradual emaciation and weakness.
Prolonged or repeated overexposure may result in delayed liver and/or kidney damage.
Certain rare individuals are subject to oxalosis (deposition of oxalates in the kidneys) and are unusually reactive to any exposure.
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.
In a multigeneration study in mice, toxic effects in pups were seen only at maternally toxic doses.
Oxalic acid is negative for genotoxicity in reverse mutation assays.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
oxalic acid dihydrate	6153-56-6	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· For advice, contact a Poisons Information Center or a doctor at once. · Urgent hospital treatment is likely to be needed.

EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin or hair contact occurs: · Immediately flush body and clothes with large amounts of water, using safety shower if available. · Quickly remove all contaminated clothing, including footwear.

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested. Inhalation of vapors or aerosols (mists, fumes) may cause lung edema. Corrosive substances may cause lung damage (e.g. <\p>.

NOTES TO PHYSICIAN

· Effective therapy against burns from oxalic acid involves replacement of calcium.
· Intravenous oxalic acid is substantially excreted (88% - 90%) in the urine within 36 hours.
Treatment must be prompt.
· Give immediately by mouth, a dilute solution of any soluble calcium salt; calcium lactate, lime water, finely pulverized chalk or plaster suspended in a large volume of water, milk. Large amounts of calcium are required to inactivate oxalate by precipitating it as the insoluble calcium salt. DO NOT give an emetic drug.
· Perform gastric lavage carefully or not at all if severe mucosal injury is evident. Dilute lime water (calcium hydroxide) makes a good lavage fluid if used in large quantity.
For acute or short term repeated exposures to strong acids:
· Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
· Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Not available.
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	1.65
Lower Explosive Limit (%):	Not applicable

EXTINGUISHING MEDIA

· Water spray or fog.
· Foam.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible.
· Slight fire hazard when exposed to heat or flame.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material. At temperatures > 150C, sublimes with partial decomposition and produces toxic fumes of carbon monoxide and formic acid.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids,chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Full face- shield.
Gloves:
Respirator:
Particulate dust filter.
Acid vapour Type B cartridge/ canister.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
· Avoid contact with skin and eyes.
· Control personal contact by using protective equipment.
· Use dry clean up procedures and avoid generating dust.
· Place in a suitable, labelled container for waste disposal.
· Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
· Check regularly for spills and leaks.
MAJOR SPILLS
· Clear area of personnel and move upwind.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.
Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
· Do NOT cut, drill, grind or weld such containers.
· In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

■ DO NOT use aluminum or galvanized containers.
Check regularly for spills and leaks.
· DO NOT use mild steel or galvanised containers.
· Lined metal can, Lined metal pail/drum
· Plastic pail.
For low viscosity materials
· Drums and jerricans must be of the non-removable head type.
· Where a can is to be used as an inner package, the can must have a screwed enclosure.

STORAGE REQUIREMENTS

· Store in original containers.
· Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Notes
___________	___________	_______	_______	_______	_______	_______
Canada - Alberta Occupational Exposure Limits	oxalic acid dihydrate (Oxalic acid)		1		2	
Canada - British Columbia Occupational Exposure Limits	oxalic acid dihydrate (Oxalic acid)		1		2	

Canada - Ontario Occupational Exposure Limits	oxalic acid dihydrate (Oxalic acid)		1		2	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	oxalic acid dihydrate (Oxalic acid)		1			
US ACGIH Threshold Limit Values (TLV)	oxalic acid dihydrate (Oxalic acid)		1		2	TLV Basis: upper respiratory tract, eye & skin irritation
US NIOSH Recommended Exposure Limits (RELs)	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1			
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Minnesota Permissible Exposure Limits (PELs)	oxalic acid dihydrate (Oxalic acid)		1		2	
US - California Permissible Exposure Limits for Chemical Contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Idaho - Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1			
US - Hawaii Air Contaminant Limits	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Alaska Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
US - Michigan Exposure Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	oxalic acid dihydrate (Oxalic acid)	-	1	-	2	
US - Washington Permissible exposure limits of air contaminants	oxalic acid dihydrate (Oxalic acid)		1		2	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	oxalic acid dihydrate (Oxalic acid)		1		2	
Canada - Prince Edward Island Occupational Exposure Limits	oxalic acid dihydrate (Oxalic acid)		1		2	TLV Basis: upper respiratory tract, eye & skin irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	oxalic acid dihydrate (Oxalic acid)		1			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	oxalic acid dihydrate (Oxalic acid)		1		2	

US - Oregon Permissible Exposure Limits (Z-1)	oxalic acid dihydrate (Oxalic acid)	1		
Canada - Northwest Territories Occupational Exposure Limits (English)	oxalic acid dihydrate (Oxalic acid)	1	2	
Canada - Nova Scotia Occupational Exposure Limits	oxalic acid dihydrate (Oxalic acid)	1	2	TLV Basis: upper respiratory tract, eye & skin irritation

ENDOELTABLE

PERSONAL PROTECTION

RESPIRATOR

BR2
BR4
Consult your EHS staff for recommendations

EYE

· Chemical goggles.
· Full face shield.

HANDS/FEET

■ Elbow length PVC gloves.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
· Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

· Overalls.
· PVC Apron.

ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Mixes with water.
Corrosive.
Acid.

State	DIVIDED SOLID	Molecular Weight	126.1
Melting Range (°F)	213.8	Viscosity	Not Applicable
Boiling Range (°F)	302 sublimes	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not available.	pH (1% solution)	1.3 (0.1 M sol)
Decomposition Temp (°F)	>314.6	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapour Pressure (mmHG)	Not available.
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.65
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not Applicable

Volatile Component (%vol)	Not available	Evaporation Rate	Not Applicable

APPEARANCE

Colourless, monoclinic tablets, prisms, or granules. Soluble in water, alcohol, ether, glycerol. Insoluble in benzene, chloroform, petroleum ether.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Contact with alkaline material liberates heat.
· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY

■ Oxalic acid (and its dihydrate):
· react violently with strong oxidisers, bromine, furfuryl alcohol, hydrogen peroxide (90%), phosphorous trichloride, silver powders
· reacts explosively with chlorites and hypochlorites
· mixture with some silver compounds form explosive salts of silver oxalate
· is incompatible with caustics and alkalis, urea, alkaline metals and steel
· attacks polyvinyl alcohol and acetal plastics.
· Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions.
Reacts with mild steel, galvanized steel / zinc producing hydrogen gas which may form an explosive mixture with air.
· Avoid strong bases.
Segregate from alkalis, oxidizing agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

OXALIC ACID DIHYDRATE

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (Rat) LD50: 7500 mg/kg *	Eye (rabbit): 250 mg/24 h - SEVERE *
Oral (rat) TDLo: 1400 mg/kg**	Skin (rabbit): 500 mg/24 h - Mild

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
* Supreme Resources MSDS

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
oxalic acid dihydrate	LOW		LOW	HIGH

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No __________ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ [Heavy 226 282 5 2 (2) NR 1 NI 0 0 (1) 1 1 FE 2 Oxo 6 5 Fraction] / CAS:6153- 56- 6 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acutemammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

¦ Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

· Recycle wherever possible.

· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: None Hazard class or Division: 8
Identification Numbers: UN3261 PG: II
Label Codes: 8 Special provisions: IB8, IP2,
IP4, T3,
TP33
Packaging: Exceptions: 154 Packaging: Non- bulk: 212
Packaging: Exceptions: 154 Quantity limitations: 15 kg
Passenger aircraft/rail:
Quantity Limitations: Cargo 50 kg Vessel stowage: Location: B
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Corrosive solid, acidic, organic, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 8 ICAO/IATA Subrisk: None
UN/ID Number: 3261 Packing Group: II
Special provisions: A3
Cargo Only
Packing Instructions: 816 Maximum Qty/Pack: 50 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 814 Maximum Qty/Pack: 15 kg
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Y814 Maximum Qty/Pack: 5 kg
Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
*(CONTAINS OXALIC ACID DIHYDRATE)

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None
UN Number: 3261 Packing Group: II
EMS Number: F-A , S-B Special provisions: 274
Limited Quantities: 1 kg
Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.(contains oxalic acid dihydrate)

Section 15 - REGULATORY INFORMATION

REGULATIONS

oxalic acid dihydrate (CAS: 6153-56-6) is found on the following regulatory lists;
"Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Pennsylvania - Hazardous Substance List","US DOE Temporary Emergency Exposure Limits (TEELs)"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Inhalation may produce health damage*.
- Cumulative effects may result following exposure*.
- May possibly affect fertility*.

* (limited evidence).

- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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