Material Safety Data Sheet

Oxalic aciddihydrate

Section 1 - Chemical Product and Company Identification

MSDS Name: Oxalic aciddihydrate
Catalog Numbers: 6153-56-6
Synonyms: Ethanedioicacid dihydrate.
Company Identification:
Aste Global Pte Ltd
No.1 Tua Link 1, Singapore 638583
Tel:+65 6862 1212 Fax:+65 6897 9959
Email:info@aste.com.sg

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
6153-56-6	Oxalic acid dihydrate	99.6

Hazard Symbols: No
Risk Phrases: 21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white. Danger!May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause kidney damage. May cause eye and skin irritation with possible burns. Harmful in contact with skin and if swallowed.
Target Organs: Kidneys, heart, eyes, skin, brain, nerves, mucous membranes.

Potential Health Effects
Eye: May cause severe eye irritation. May result in corneal injury.

Skin: Causes skin irritation. Harmful if absorbed through the skin. Rare chemical burns may occur from oxalic acid and may cause hypocalcemia. Gangrene has occurred in the hands of people working with oxalic acid solutions without rubber gloves. The skin lesions are characterized by cracking of the skin and the development of slow-healing ulcers. The skin may be bluish in color, and the nails brittle and yellow.
Ingestion: Oxalic acid is toxic because of its acidic and chelating properties. It is especially toxic when ingested. As little as 5 grams (71 mg/kg) may be fatal. 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. Oxalic acid can bind calcium to form calcium oxalate which is insoluble at physiological pH. Calcium oxalate thus formed might precipitate in the kidney tubules and the brain. Hypocalcemia secondary to calcium oxalate formation might disturb the function of the heart and nerves.
Inhalation: Inhalation of oxalic acid produces irritation of the respiratory tract, ulceration of the mucous membranes, headaches, 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 immediately.
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 alcohol-resistant 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. Avoid runoff into storm sewers and ditches which lead to waterways. 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. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Discard contaminated shoes. Use only with adequate ventilation.
Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

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 general or local exhaust ventilation to keep airborne concentrations below the permissible

exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Oxalic acid dihydrate	none listed	none listed	none listed

OSHA Vacated PELs: Oxalic acid, anhydrous: 1 mg/m3 TWA; 2 mg/m3 STEL
Oxalic acid dihydrate: No OSHA Vacated PELs are listed for this chemical.

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 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

PhysicalState: Powder
Appearance: Transparent,colorless crystals.
Odor: odorless
pH: 1.3(0.1M)
Vapor Pressure(mm Hg):<0.001@20C(68F)
Vapor Density: 4.4
Evaporation Rate: Not information found
Viscosity: Not available.
Boiling Point: 149-160C(300-320F)Sublimes
Freezing/Melting Point:104 deg C sublimes
Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
Decomposition Temperature: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 1; Reactivity: 0
Explosion Limits, Lower: Not available.
Upper: Not available.
Solubility:ca.1g/7ml of water
Specific Gravity/Density:1.65@18.5C/4C
Molecular Formula:C2H2O4.2H2O
Molecular Weight:126.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Dust generation, metals.
Incompatibilities with Other Materials: Strong oxidizing agents, hypochlorite, silver, strong alkalies, chlorites, furfuryl alcohol.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, acrid smoke and fumes, formic acid.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

CAS# 6153-56-6:

LD50/LC50:
Draize test, rabbit, eye: 250 ug/24H Severe;
Draize test, rabbit, skin: 500 mg/24H Mild;
Oral, rat LD50:375 mg/kg

Carcinogenicity:
CAS#6153-56-6: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: No information found.
Reproductive Effects: Oxalic acid caused kidney damage in fetal sheep and rats and disturbed the estrus cycle in rats. Increased sperm abnormalities were seen in the second generation of mice administered 0.2% oxalic acid in the drinking water.
Neurotoxicity: No information available.
Mutagenicity: No information available.
Other Studies: Standard Draize Test: Administration onto the skin (rabbit) = 500 mg (Mild). Standard Draize test Administration into t he eye:250 ug/24H (Severe).

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: LC50 = 4000 mg/L; 24 Hr.; Static Conditions Mosquito Fish: LC50 = 1350 mg/L; 24 Hr.; Static Conditions No data available.

Environmental: An estimated Koc value of 5 for oxalic acid indicates high mobility in soil and oxalic acid has been detected in groundwater. Several screening studies and grab sample tests indicate that under aerobic and anaerobic conditions, oxalic acid will readily biodegrade in aquatic ecosystems. Based on an experimental Henry's Law constant of 1.4X10-10 atm-m3/mole at 25?C, oxalic acid is expected to be essentially nonvolatile from water. Adsorption to sediment and bioconcentration in aquatic organisms may not be important fate process for oxalic acid.
Physical: Oxalic acid in the ambient atmosphere may react slowly with OH radicals, but it is removed rapidly by photolysis; the daytime persistence of oxalic acid is not expected to exceed a few hours. Based on its high water solubility, removal from air via wet deposition is likely to occur. Oxalic acid may also be removed from air via dry deposition with 11% of the total deposition being dry deposition.
Other: Based on an average experimental water solubility of 220,000 mg/L at 25?C and a regression derived equation, the BCF for oxalic acid can be estimated to be approximately 0.6 and therefore should not be expected to bioconcentrate in aquatic organisms.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

Not hazardous for land transport,Not hazardous for sea transport,Not hazardous for air transport.

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (OXALIC			No Regulated	CORROSIVE SOLID NOS (OXALIC ACID DIHYDRATE)

	ACID, DIHYDRATE)				
Hazard Class:					
UN Number:					
Packing Group:					

Section 15 - Regulatory Information

TSCA

CAS# 6153-56-6 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 6153-56-6: acute, chronic.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the

CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

Hazard Symbols:

No

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# 6153-56-6: 1

Section 16 - Additional Information

MSDS Creation Date:15/01/2023