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SAFETY DATA SHEET – Oxalic Acid

1. IDENTIFICATION

Revision Date	July 2023 (*valid for 5 years from this date)*
Product Name	OXALIC ACID DIHYDRATE
Other Names	ETHANEDIOIC ACID
Uses	
Contact Information	Chlorine Discounters Address: 43 Clapham Road, Regents Park NSW 2143 P: 02-96454433 F: 02-96454030 E: info@chlorinediscounters.com.au W: www.chlorinediscounters.com.au
Emergency Contact	Managing Director or Operations Manager

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	6	
Globally Harmonised System		
Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories	Acute Toxicity (Oral) - Category 4	
	Acute Toxicity (Dermal) - Category 4	
Pictograms		
Signal Word	Warning	
Hazard Statements	H302	Harmful if swallowed.
	H312	Harmful in contact with skin.

Precautionary Statements

Prevention	P264	Wash contacted areas thoroughly after handling.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P312	Call a POISON CENTER or doctor/physician if you feel unwell.
	P362	Take off contaminated clothing and wash before reuse.
Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	CAS Number	Proportions(%)
OXALIC ACID, DIHYDRATE	[6153-56-6]	100.0

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Rinse mouth with water. Give plenty of water to drink provided victim is conscious. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Seek medical attention.
Eye	Rinse eyes immediately with plenty of water for at least 15 minutes and seek medical advice.
Skin	Carefully and gently brush the contaminated body surfaces in order to remove all traces of product for at least 15 minutes. Wash affected area immediately with plenty of water. Remove contaminated clothing. If necessary, seek medical advice.
Inhaled	Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product. Most important symptoms and effects, both acute and delayed: Prolonged or repeated skin contact may cause dermatitis. If inhaled can cause a burning sensation of the nose and throat, coughing, shortness of breath, sore throat, symptoms of immediate effects.

5. FIRE FIGHTING MEASURES

General Measures	Avoid open flame. Avoid contact with oxidising materials. Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	Product is a non-flammable solid.
Extinguishing Media	In case of fire, use water spray, powder, foam, or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	Product is a non-flammable solid.
Hazardous Products of Combustion	In case of fire, toxic fumes of carbon monoxide and carbon dioxide may be formed.
Special Fire Fighting Instructions	Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No relative self-ignition temperature below 400 deg C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response	Procedure For non-emergency personnel: Ensure adequate ventilation. Keep dust levels to a minimum. Keep unprotected persons away. Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8). Avoid inhalation of dust – ensure that sufficient ventilation or suitable respiratory protective equipment is used, wear suitable protective equipment (see section 8). For emergency responders: Keep dust levels to a minimum. Ensure adequate ventilation. Keep unprotected persons away. Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8). Avoid inhalation of dust – ensure that sufficient ventilation or suitable respiratory protective equipment is used, wear suitable protective equipment (see section 8).
Clean Up Procedures	Collect up dry and deposit in waste containers for later disposal according to regulations. Wipe off with water. (Extra personal protection: P2 filter respirator for harmful particles).
Containment	Stop leak if safe to do so. Isolate the danger area.
Decontamination	Wipe off with water.
Environmental Precautionary Measures	Contain the spillage. Keep the material dry if possible. Cover area if possible to avoid unnecessary dust hazard. Avoid uncontrolled spills to watercourses and drains. Any large spillage into watercourses must be alerted to the Environment Agency or other regulatory body.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean-up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. Wear protective equipment (refer to section 8). Do NOT wear contact lenses when handling this product. Keep dust levels to a minimum. Enclose dust sources, use exhaust ventilation.
Storage	The substance should be stored under dry conditions. Recipients tightly closed at Room temperature. Separated from strong bases, oxidizing materials, food and feed. This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

No exposure standard has been established for this product by the The Safe Work Australia (SWA). However, the exposure standard for dust not otherwise specified is 10 mg/m3 (for inspirable dust) and 3 mg/m3 (for respirable dust). Please also note the following:

OEL (TWA): 1 mg/m3 (ACGIH 1990-1991)
OEL (como STEL): 2 mg/m3 (ACGIH 1990-1991)
DNEL for Workers:
Local effects - acute: DNEL (derived not effect level) dermal: 0.69 mg/cm2
Systemic effects - long term: DNEL (derived not effect level)
dermal: 2.29 mg/Kg bw/day
Systemic effects - long term: DNEL (derived not effect level) inhalation: 4.03 mg/m3
DNEL for General Population:
Local effects - acute: DNEL (derived not effect level) dermal: 0.35 mg/cm2
Systemic effects - long term: DNEL (derived not effect level) dermal: 1.14 mg/Kg bw/day
Systemic effects - long term: DNEL (derived not effect level) oral: 1.14 mg/m3
PNEC water (freshwater): 0.1622 mg/L
PNEC water (sea water): 0.01622
PNEC water (intermittent spills): 1622 mg/L

NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Exposure Limits

No Data Available

Biological Limits

No information available on biological limit values for this product.

Engineering Measures

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection Equipment

RESPIRATOR: Wear a suitable particle filter mask (P2 filter respirator for harmful particles) (AS1715/1716).
EYES: Do NOT wear contact lenses. Tightly fitting goggles with side shields, or wide vision full goggles (AS1336/1337).
HANDS: Wear suitable gloves (nitrile, neoprene, natural rubber, polyvinyl) (AS2161).
CLOTHING: Long-sleeved standard work clothing, long pants, and safety footwear (resistant to corrosive chemicals and which prevent penetration of dust) (AS3765/2210).

Special Hazards Precautions

The substance does not represent a thermal hazard, thus special consideration is not required.

Work Hygienic Practices

No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Uncoloured crystals or white powder
Odour	Odourless
Colour	Uncoloured or white
pH	~0.7 50g/L
Vapour Pressure	0.0312 Pa (@ 25 °C)
Boiling Point	Not applicable (sublimes at >160 deg C)
Melting Point	Not applicable (sublimes at >160 deg C)
Solubility	108 g/L 25°C
Auto Ignition Temp	No relative self-ignition temperature below 400 deg C
Decomposition Temperature	>160 °C
Density	0.813 EU A.3 method
Partition Coefficient	**-**1.7 (23 deg C) (study result, OECD Guideline 107)
Potential for Dust Explosion	No Data Available
Reactions That Release Gases or Vapours	No Data Available

10. STABILITY AND REACTIVITY

General Information	On contact with hot surfaces or flames this substance decomposes forming formic acid and carbon monoxide. The solution in water is a medium strong acid.
Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Minimise exposure to air and moisture to avoid degradation.
Materials to Avoid	Alkaline solutions, ammonia, halogenates, oxidising agents, metals, water, heat.
Hazardous Decomposition Products	Hazardous decomposition products may include carbon monoxide, carbon dioxide, and formic acid.
Hazardous Polymerisation	Reacts violently with strong oxidants causing fire and explosion hazard. Reacts with some silver compounds to form explosive silver oxalate. Attacks some forms of plastic.

11. TOXICOLOGICAL INFORMATION

General Information	Oxalic acid is classified as harmful by oral and dermal route and it entails a risk of serious damage to the eye. Toxicity endpoints and outcome of the effects assessment: Absorption: The primary health effect of oxalic acid is local irritation due to a pH shift. Therefore, absorption is not a relevant parameter for the effects assessment. Acute Toxicty: Oxalic acid Oral and Dermal Acutely toxic cat. 4 Oral LD50 Rat: >375 mg/Kg bw (according to the method of Smyth) Dermal LD50 Rabbit: >20000 mg/Kg bw (Pesticide Action Network, North America) Repeated Dose Toxicity: Toxicity of Oxalic acid via the oral route is addressed by LOAEL of 150 mg/Kg bw/day. Toxicity of Oxalic acid via the dermal route is not considered as relevant in the view of the anticipated insignificant absorption through the skin. Toxicity of Oxalic acid via inhalation is not considered as relevant. Therefore, classification of Oxalic acid for toxicity upon prolonged exposure is not required. Mutagenicity: Bacterial reverse mutation assay (Ames test, OECD 471): Negative. Mammalian chromosome aberration test: Negative. Oxalic acid is void of any genotoxic potential. Classification for genotoxicity is not warranted. Carcinogenicity: Oxalic acid is not considered as carcinogenic. Human epidemiological data support lack of any carcinogenic potential of oxalic acid Classification for carcinogenicity is not warranted. Toxicity for Reproduction: Oxalic acid is not toxic to reproduction (experimental result, mouse) Human epidemiological data support lack of a potential for reproductive toxicity of oxalic acid. Classification for reproductive toxicity according to regulation (EC) 1272/2008 is not required.
Eye Irritant	Oxalic acid entails a risk of serious damage to the eye (OECD 405, Rabbit). Based on experimental results, oxalic acid requires classification as severely irritating to the eye [R41, Risk of serious damage to eye; Eye Damage 1 (H318 - Causes serious eye damage)].
Ingestion	Harmful if swallowed.
Skin Irritant	Harmful in contact with skin. Oxalic acid is not irritating to skin (OECD 404, Rabbit)
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Acute/Prolonged toxicity to fish: LC50 (96hr) for freshwater fish: 160 mg/L (Deutsche Einheitsverfahren zur Wasser, Abwasser und Schlamm-Untersuchung) Acute/Prolonged toxicity to aquatic invertebrates: EC50 (48hr) for freshwater invertebrates: 162.2 mg/L (OECD 202, Daphnia) Acute/Prolonged toxicity to aquatic plants: Toxicity threshold (8 days) for freshwater algae: 80.0 mg/L Chronic Toxicity to aquatic organisms: The long term aquatic toxicity study on aquatic invertebrates shall be considered if the substance is poorly water soluble and oxalic acid is soluble in water. Also oxalic acid presents a low toxicity for the short term test. Toxicity to soil dwelling organisms: The oxalic acid is not supposed to be directly applied to the soil and an indirect exposure to soil via sewage sludge transfer is unlikely since the substance is readily biodegradable. As oxalic acid is considered as "readily biodegradable", it can be assumed that it will be biodegraded within the STP process and as a consequence a transfer to the soil compartment is not expected. Therefore, no tests on terrestrial organisms are provided. Toxicity to terrestrial plants: EC50 (72hr for terrestrial plants: 8 mM) General effect: Oxalic acid has a low logKow and is readily biodegradable. The substance cannot be classified as hazardous for the environment.
Persistence/Degradability	Oxalic acid is readily biodegradable, meeting the 10 day window. The biodegradation in seawater occurs at the same rate. Also the anaerobic biodegradation occurs rapidly.
Mobility	Transport through the medium is rate-limiting. Degradation after 30 days at 20 deg C is up to 73% (based on CO2 evolution). Oxalic acid is easily biodegradable in soil.
Environmental Fate	Do NOT let product reach waterways, drains and sewers. Results of PBT and vPvB assessment: The hazard assessment of oxalic acid reveals neither a need to classify the substance as dangerous to the environment, nor is it a PBT or vPvB substance, nor are there any further indications that the substance may be hazardous to the environment.
Bioaccumulation Potential	Not relevant for oxalic acid because this substance is readily biodegradable and highly soluble in water, and logKow is negative.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

Disposal	Disposal of oxalic acid should be in accordance with local and national legislation. Processing, use or contamination of this product may change the waste management options. Must not be disposed together with household garbage. Do not allow product to reach sewage system. Dispose of container and unused contents in accordance with federal, state and local requirements. The used packing is only meant for packing this product. After usage, empty the packing completely
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice. Must not be disposed of together with household garbage. Do NOT allow product to reach sewage system. The used packing is only meant for packing this product. After usage, empty the packing completely.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG

UN Number	Not applicable.
Shipping Name	OXALIC ACID DIHYDRATE
Dangerous Goods Class	Not applicable.
Subsidiary Risk	Not applicable.
Pack Group	Not applicable.
Precaution for User	No data available.
Hazchem Code	N/A
EPG	Not applicable.
Special Provision	Not applicable.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6
National/Regional Inventories	
Australia (AICS)	Listed

16. OTHER INFORMATION

Literature References	No data available.
Sources for Data	No data available.

Legend to Abbreviations and Acronyms

<	less than
<	greater than
ADG	Australian Dangerous Goods Code
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
cm2	square centimetres
CO2	Carbon Dioxide

COD	Chemical Oxygen Demand
deg C ('C)	degrees Celsius
ERMA	Environmental Risk Management Authority
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
HSNO	Hazardous Substance and New Organism
IATA	International Air Transport Association Dangerous Goods Regulations
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods Code
Immiscible	liquids are insoluble in each other
Kg	kilogram
kg/m3	kilograms per cubic metre
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
ltr	Litre
m3	cubic metre
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic metre
Misc	miscible
Miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
mPa.s	milli Pascal per second
N/A	Not Applicable
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value

tne	tonne
TWA	Time Weighted Average
ug/24H	micrograms per 24 hours
UN	United Nations (number)
wt	weight

This SDS summarises Chlorine Discounters best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Chlorine Discounters expressly disclaims that the SDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the SDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.