

Oxalic Acid

Cromag Pty Ltd
Safety Data Sheet according to WHS and ADG requirements

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Oxalic Acid
Chemical Name	Oxalic Acid
Synonyms	Ethanedioic acid, Oxalic acid dihydrate
Proper shipping name	Not Applicable
Chemical formula	C ₂ H ₂ O ₄
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses	Reducing agent. Major use in textile finishing, stripping cleaning, calico printing, dyeing. Rust stain removal; metal and equipment cleaning. Timber bleach. Dye manufacture; in the paper, ceramics, photography and rubber industries.
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Details of the supplier of the safety data sheet

Company Name	Cromag Pty Ltd trading as Telford Industries and Sigma Chemicals
Address	7 Valentine Street Kewdale WA 6105 Australia
Telephone	+61 8 9353 2053
Website	www.telfordindustries.com.au / www.sigmachemicals.com.au
Email	info@telfordindustries.com.au / info@sigmachemicals.com.au

Emergency telephone number

Association/Organisation	Not Available
Emergency telephone numbers	DFES: 000 (HAZMAT EMERGENCIES)
Other Emergency telephone numbers	POISONS: 13 11 26


SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NOT DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	6
Classification	Acute Toxicity (Oral) - Category 4, Acute Toxicity (Dermal) - Category 4

Label Elements

GHS label elements	
SIGNAL WORD	WARNING



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Hazard statement(s)

H302	Harmful if swallowed.
H312	Harmful in contact with skin.

Precautionary statement(s) Prevention

P264	Wash exposed skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) 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.

Precautionary statement(s) Storage

Not Available.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	% [weight]	Name
144-62-7	>=99	oxalic acid

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none">➤ 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.➤ Continue flushing until advised to stop by the Poisons Information Centre or for at least 15 minutes.➤ Transport to hospital or doctor without delay.➤ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none">➤ Immediately flush body and clothes with large amounts of water, using safety shower if available.➤ Quickly remove all contaminated clothing, including footwear.➤ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.➤ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none">➤ If fumes or combustion products are inhaled remove from contaminated area.➤ Lay patient down. Keep warm and rested.➤ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.➤ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

Ingestion	<ul style="list-style-type: none"> ➤ Transport to hospital, or doctor, without delay. ➤ For advice, contact a Poisons Information Centre or a doctor at once. ➤ Urgent hospital treatment is likely to be needed. ➤ If swallowed do NOT induce vomiting. ➤ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ➤ Observe the patient carefully. ➤ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ➤ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ➤ Transport to hospital or doctor without delay.
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Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing Media

- Water spray
- Foam
- Carbon dioxide
- Dry chemical powder

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ➤ The material is not readily combustible under normal conditions. <p>Decomposition may produce toxic fumes of:</p> <ul style="list-style-type: none"> ➤ carbon monoxide (CO) ➤ carbon dioxide (CO₂) <p>May emit poisonous/corrosive fumes.</p>
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ➤ Clean up all spills immediately. ➤ Avoid contact with skin and eyes. ➤ Control personal contact with the substance, by using protective equipment.
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	<ul style="list-style-type: none"> ➤ Use dry clean up procedures and avoid generating dust. ➤ Place in a suitable, labeled 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.
Major Spills	<ul style="list-style-type: none"> ➤ Clear area of personnel and move upwind. ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course. ➤ Consider evacuation (or protect in place). ➤ Collect recoverable product into labelled containers for recycling. ➤ Neutralize/decontaminate residue (see Section 13 for specific agent). ➤ Wash area and prevent runoff into drains. ➤ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ➤ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ➤ Avoid all personal contact, including inhalation. ➤ Wear protective clothing when risk of exposure occurs. ➤ <u>When handling DO NOT eat, drink or smoke.</u> ➤ Keep containers securely sealed when not in use. ➤ Work clothes should be laundered separately. Use good occupational work practice. ➤ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained
Other Information	<ul style="list-style-type: none"> ➤ Store in original containers. ➤ Store in a cool, dry, well-ventilated area. ➤ Store away from incompatible materials and foodstuff containers. ➤ Protect containers against physical damage and check regularly for leaks.

Conditions for safe storage, including any incompatibilities

Suitable Container	<ul style="list-style-type: none"> ➤ Polyethylene or polypropylene container. ➤ Check all containers are clearly labelled and free from leaks. ➤ Store in original packaging as approved by manufacturer.
Storage Incompatibility	<ul style="list-style-type: none"> ➤ React violently with strong oxidisers, bromine, furfuryl alcohol, hydrogen peroxide (90%), phosphorous trichloride, silver powders ➤ Reacts explosively with chlorites and hypochlorite ➤ Mixture with some silver compounds form explosive salts of silver oxalate ➤ Incompatible with caustics and alkalis, urea, alkaline metals and steel ➤ Attacks polyvinyl alcohol and acetal plastics

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	oxalic acid	oxalic acid	1 mg/m3	2 mg/m3	Not Available	Not Available


EMERGENCY LIMITS

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
oxalic acid	oxalic acid	2 mg/m3	20 mg/m3	500 mg/m3

Ingredient	Original IDLH	Revised IDLH
oxalic acid	500 mg/m3	500 [Unch] mg/m3

MATERIAL DATA

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Personal Protection	
Eye and Face protection	<ul style="list-style-type: none"> ➢ Safety glasses with imperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing. ➢ Chemical goggle. whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ➢ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes. ➢ Alternatively a gas mask may replace splash goggles and face shields.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ➢ Elbow length PVC gloves
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ➢ Overalls. ➢ PVC Apron. ➢ PVC protective suit may be required if exposure severe. ➢ Eyewash unit. ➢ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White/colourless crystals or powder		
Physical state	Solid	pH as a Solution	~ 1 (1 - 5% solution)
Odour	Not Available	Molecular Weight (g/mole)	90
Odour threshold	Not Available	Flammability	Not Applicable

Relative density (water=1)	1.65 – 1.9 (anhydrous – dihydrate)	Upper Explosive Limit (%)	Not Applicable
Colour	Colourless to White	Lower Explosive Limit (%)	Not Applicable
pH (as supplied)	Not Applicable	Vapour pressure (kPa)	Not Available
Melting point/Freezing point (°C)	sublimes at >160 °C	Solubility in water (g/L)	108 @ 25 °C
Initial boiling point and boiling range (°C)	sublimes at >160 °C	Vapour density (Air = 1)	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ➤ Unstable in the presence of incompatible materials. ➤ Contact with alkaline material liberates heat. ➤ Product is considered stable. ➤ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. Acidic corrosives produce respiratory tract irritation with coughing, choking and mucous membrane damage.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of acidic corrosives may produce circumoral burns with a distinct discolouration of the mucous membranes of the mouth, throat and oesophagus.
Skin Contact	The material produces mild skin irritation; Skin irritation may also be present after prolonged or repeated exposure; Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material.
Eye	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Product Name	TOXICITY	IRRITATION
oxalic acid	Dermal (rabbit) LD50: >20000 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >375 mg/kg ^[2]	Not Available

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

oxalic acid	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.
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Acute Toxicity	✓	Carcinogenicity	⊕
Skin Irritation/Corrosion	✓	Reproductivity	✓



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Serious Eye Damage/Irritation	✓	STOT – single exposure	⊖
Respiratory or Skin sensitisation	⊖	STOT – repeated exposure	⊖
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend:
 ✗ – Data available but does not fill the criteria for classification
 ✓ – Data required to make classification available
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
oxalic acid	LC50	96	Fish	50.37564mg/L	3
oxalic acid	EC50	48	Crustacean	136.9mg/L	4
oxalic acid	EC50	96	Algae or other aquatic plants	91267.289mg/L	3
oxalic acid	EC0	192	Algae or other aquatic plants	80mg/L	1
oxalic acid	NOEC	0.33	Algae or other aquatic plants	2.000mg/L	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
oxalic acid	LOW	LOW

Bio accumulative potential

Ingredient	Bioaccumulation
oxalic acid	LOW (Log KOW = -1.7365)

Mobility in Soil

Ingredient	Mobility
oxalic acid	HIGH (KOC = 1.895)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product/Packaging disposal	<ul style="list-style-type: none"> ➤ Containers may still present a chemical hazard / danger when empty. ➤ Return to supplier for reuse/recycling if possible. ➤ DO NOT allow wash water from cleaning or process equipment to enter drains. ➤ In all cases disposal to sewer may be subject to local laws and regulations. ➤ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ➤ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Not Applicable



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Land transport (ADG), Air transport (ICAO-IATA / DGR), Sea transport (IMDG-Code / GGVSee)
Not Applicable

Transport in bulk according to Annex II of MARPOL and the IBC code
Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

OXALIC ACID (144-62-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated List

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (oxalic acid)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

The 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.

Definitions and abbreviations

Name	CAS No		
PC—TWA	Permissible Concentration-Time Weighted Average	PC—STEL	Permissible Concentration-Short Term Exposure Limit
IARC	International Agency for Research on Cancer	ACGIH	American Conference of Governmental Industrial Hygienists
STEL	Short Term Exposure Limit	TEEL	Temporary Emergency Exposure Limit
IDLH	Immediately Dangerous to Life or Health Concentrations	OSF	Odour Safety Factor
NOAEL	No Observed Adverse Effect Level	LOAEL	Lowest Observed Adverse Effect Level
TLV	Threshold Limit Value	LOD	Limit Of Detection
OTV	Odour Threshold Value	BCF	BioConcentration Factors
BEI	Biological Exposure Index		



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END OF SDS