

Rowe Scientific Oxalic Acid Solution 1-4%

ROWE SCIENTIFIC

Chemwatch: 4597-71

Version No: 10.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 1

Issue Date: 01/07/2020

Print Date: 01/07/2020

S.GHS.AUS.EN

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

Product Identifier

Product name	Rowe Scientific Oxalic Acid Solution 1-4%
Synonyms	CO0754; CO1945; CS7520; CS7536
Other means of identification	Not Available

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

Relevant identified uses	Laboratory reagent for silica analysis by Silkostat monitor.
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Details of the supplier of the safety data sheet

Registered company name	ROWE SCIENTIFIC
Address	11 Challenge Boulevard Wangara WA 6065 Australia
Telephone	+61 8 9302 1911
Fax	+61 8 9302 1905
Website	http://rowe.com.au/
Email	rowewa@rowe.com.au

Emergency telephone number

Association / Organisation	ROWE SCIENTIFIC
Emergency telephone numbers	+61 8 9302 1911 (24 Hrs)
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	S6
Classification [1]	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable
SIGNAL WORD	NOT APPLICABLE

Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

Rowe Scientific Oxalic Acid Solution 1-4%

CAS No	%[weight]	Name
144-62-7	1-4	<u>oxalic acid</u>
7732-18-5	>60	<u>water</u>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: - Wash out immediately with fresh 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. - Seek medical attention without delay; if pain persists or recurs seek medical attention. - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: - Immediately remove all contaminated clothing, including footwear. - Flush skin and hair with running water (and soap if available). - Seek medical attention in event of irritation.
Inhalation	- 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. - Transport to hospital, or doctor.
Ingestion	If poisoning occurs, contact a doctor or Poisons Information Centre. - 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. - Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treatment must be prompt.

- Give immediately by mouth, a dilute solution of any soluble calcium salt; calcium lactate, lime water, finely pulverised chalk or plaster suspended in a large volume of water or 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.
- Administer a slow intravenous injection of 10-20 ml of calcium gluconate (10% solution) or of calcium chloride (5% solution). This injection may be repeated frequently to prevent hypocalcaemic tetany. Calcium gluconate (10 m) may also be given intramuscularly every few hours. Calcium compounds are never given subcutaneously; even the intramuscular route is hazardous in infants because of the incidence of sloughing.
- In severe cases parathyroid extract (100 USP units) should be given intramuscularly.
- Morphine may be necessary to control pain.
- Treat shock by cautious intravenous injection of isotonic saline solution. Check for metabolic acidosis and infuse sodium bicarbonate if necessary.
- Watch for oedema of the glottis late formation of oesophageal stricture.
- Useful demulcents by mouth include milk of magnesia, bismuth subcarbonate, and mineral oil.
- Prophylactic and therapeutic measures in anticipation of renal damage.

[GOSSELIN SMITH HODGE: Clinical Toxicology of Commercial Products]

Oxalates are readily metabolized to oxalic acid in the body. Oxalic acid is excreted in the urine at a rate of 8-40 mg/day in healthy normal men and women. About half is excreted as oxalic acid and half as magnesium, calcium or other salts. Ingested oxalic acid is also excreted in the feces. In rats, approximately half of ingested oxalic acid is destroyed by bacterial action and about 25% is excreted unchanged in the feces. In humans, calcium oxalate is deposited in the kidneys as crystals and may be deposited in non-crystalline form, bound to lipid, in the liver and other body tissues.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known
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Advice for firefighters

Fire Fighting	- Alert Fire Brigade and tell them location and nature of hazard. - Wear breathing apparatus plus protective gloves in the event of a fire. - Prevent, by any means available, spillage from entering drains or water courses. - Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. - Cool fire exposed containers with water spray from a protected location. - If safe to do so, remove containers from path of fire. - Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	- Non combustible. - Not considered to be a significant fire risk. - Expansion or decomposition on heating may lead to violent rupture of containers. - Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). - May emit acrid smoke. Other decomposition products include:

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	carbon dioxide (CO2)
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	▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal.
Major Spills	Minor hazard. ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. ▶ Prevent spillage from entering drains or water ways. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. ▶ Wash area and prevent runoff into drains or waterways. ▶ 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	▶ Limit all unnecessary personal contact. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	▶ Store in original containers. ▶ Keep containers securely sealed. ▶ 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. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Glass container is suitable for laboratory quantities Plastic container
Storage incompatibility	Avoid storage with alkalis, silver and silver compounds and most common metals.



+ + + + + + +

X — Must not be stored together
 O — May be stored together with specific precautions
 + — May be stored together

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

Continued...

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Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
oxalic acid	Oxalic acid, anhydrous; (Ethanedioic acid)	2 mg/m3	20 mg/m3	500 mg/m3

Ingredient	Original IDLH	Revised IDLH
oxalic acid	500 mg/m3	Not Available
water	Not Available	Not Available

Exposure controls

Appropriate engineering controls	General exhaust is adequate under normal operating conditions.
Personal protection	  
Eye and face protection	- Safety glasses with side shields; or as required, - Chemical goggles. - Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	Wear protective gloves, e.g. PVC.
Body protection	See Other protection below
Other protection	- Overalls. - Eyewash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	A
NEOPRENE	A
VITON	A
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PVA	C
PVC	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear, colourless, odourless liquid; mixes with water.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available

Continued...

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Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▶ Unstable in the presence of incompatible materials. ▶ 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	Not normally a hazard due to non-volatile nature of product
Ingestion	Ingestion may cause headache, nausea, vomiting, gastro-intestinal irritation, abdominal pain, collapse and possibly convulsions. Delayed symptoms include muscle twitching, cramps and central nervous system depression. Oxalic acid is a systemic poison which affects kidney function and can cause hypocalcemia (the presence in the blood of an abnormally low level of calcium). Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	Prolonged or repeated skin contact may cause irritation, dermatitis, cyanosis of fingers, discolouration of fingernails and possible ulceration. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
Chronic	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.

Rowe Scientific Oxalic Acid Solution 1-4%	TOXICITY	IRRITATION
	Not Available	Not Available
oxalic acid	TOXICITY	IRRITATION
	dermal (rat) LD50: =20000 mg/kg ^[2]	Eye: adverse effect observed (irritating) ^[1]
water	TOXICITY	IRRITATION
	Oral (rat) LD50: =375 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
water	TOXICITY	IRRITATION
	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available
Legend:	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 ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.
WATER	No significant acute toxicological data identified in literature search.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

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Legend: ✗ – Data either not available or does not meet the criteria for classification
✔ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Rowe Scientific Oxalic Acid Solution 1-4%	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
oxalic acid	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	8215.146mg/L	3
	EC50	48	Crustacea	136.9mg/L	2
	EC50	96	Algae or other aquatic plants	91267.289mg/L	3
	EC0	192	Algae or other aquatic plants	80mg/L	1
	NOEC	0.33	Algae or other aquatic plants	2.000mg/L	4
water	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	897.520mg/L	3
	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - 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				

DO NOT discharge into sewer or waterways.

Persistence and degradability

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

Bioaccumulative potential

Ingredient	Bioaccumulation
oxalic acid	LOW (LogKOW = -1.7365)
water	LOW (LogKOW = -1.38)

Mobility in soil

Ingredient	Mobility
oxalic acid	HIGH (KOC = 1.895)
water	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Management Authority for disposal. ▶ Bury residue in an authorised landfill. ▶ Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Rowe Scientific Oxalic Acid Solution 1-4%

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

OXALIC ACID IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -
Schedule 6

WATER IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
oxalic acid	144-62-7	607-006-00-8	01-0000018069-66-XXXX 01-2119534576-33-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Acute Tox. 4	GHS07; Wng	H302; H312
1	Acute Tox. 4; Acute Tox. 4	GHS07; Wng	H302; H312

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
water	7732-18-5	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	Not Available	Not Available

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (oxalic acid; water)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	01/07/2020
Initial Date	27/11/2000

SDS Version Summary

Version	Issue Date	Sections Updated
9.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
10.1.1.1	01/07/2020	Classification, Synonyms

Other information

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.

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

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer

Continued...

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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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