# Rowe Scientific Sodium Thiosulfate Solution ROWE SCIENTIFIC

Chemwatch: **26-6473**Version No: **8.1.6.5** 

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 1

Issue Date: **10/06/2021**Print Date: **10/06/2021**S.GHS.AUS.EN

## SECTION 1 Identification of the substance / mixture and of the company / undertaking

### **Product Identifier**

Product name	Rowe Scientific Sodium Thiosulfate Solution
Chemical Name	Not Applicable
Synonyms	CS0054; CS1428; CS1606; CS1609; CS2590; CS14165; CS14180; CS14193; KH1312
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Laboratory reagent.

## 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

Poisons Schedule	Not Applicable
Classification [1]	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2B
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

## Label elements

Hazard pictogram(s)



Signal word

Warning

## Hazard statement(s)

Chemwatch: **26-6473** Version No: **8.1.6.1**  Page 2 of 9

## **Rowe Scientific Sodium Thiosulfate Solution**

Issue Date: **10/06/2021**Print Date: **10/06/2021** 

H320

Causes eye irritation.

## Precautionary statement(s) Prevention

P280	Wear protective gloves and protective clothing.
P264	Wash all exposed external body areas thoroughly after handling.

## Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P337+P313	If eye irritation persists: Get medical advice/attention.	
P302+P352	IF ON SKIN: Wash with plenty of water.	
P332+P313	If skin irritation occurs: Get medical advice/attention.	
P362+P364	Take off contaminated clothing and wash it before reuse.	

## 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**

CAS No	%[weight]	Name
7772-98-7	<20	sodium thiosulfate
7732-18-5	>60	<u>water</u>
Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L * EU IOELVs available		

## **SECTION 4 First aid measures**

## **Description of first aid measures**

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Eye Contact	<ul> <li>If this product comes in contact with the eyes:</li> <li>Wash out immediately with fresh running water.</li> <li>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.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>	
Skin Contact	If skin or hair contact occurs:  Flush skin and hair with running water (and soap if available).  Seek medical attention in event of irritation.	
Inhalation	<ul> <li>If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>Other measures are usually unnecessary.</li> </ul>	
Ingestion	<ul> <li>If swallowed do NOT induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Seek medical advice.</li> </ul>	

## Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## **SECTION 5 Firefighting measures**

Issue Date: 10/06/2021 Print Date: 10/06/2021

### **Extinguishing media**

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

## Special hazards arising from the substrate or mixture

Special nazarus arising from the substrate or mixture		
Fire Incompatibility	None known	
Advice for firefighters		
Fire Fighting	<ul> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>Prevent, by any means available, spillage from entering drains or water courses.</li> <li>Use fire fighting procedures suitable for surrounding area.</li> <li>DO NOT approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> <li>Equipment should be thoroughly decontaminated after use.</li> </ul>	
Fire/Explosion Hazard	<ul> <li>Non combustible.</li> <li>Not considered to be a significant fire risk.</li> <li>Expansion or decomposition on heating may lead to violent rupture of containers.</li> <li>Decomposes on heating and may produce toxic/ irritating fumes.</li> <li>May emit acrid smoke.</li> </ul> Decomposes on heating and produces toxic fumes of:	

## **SECTION 6 Accidental release measures**

**HAZCHEM** 

## Personal precautions, protective equipment and emergency procedures

sulfur oxides (SOx)

Not Applicable

See section 8

## **Environmental precautions**

See section 12

## Methods and material for containment and cleaning up

Minor Spills	<ul> <li>Clean up all spills immediately.</li> <li>Avoid breathing vapours and contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective equipment.</li> <li>Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>Wipe up.</li> <li>Place in a suitable, labelled container for waste disposal.</li> </ul>
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**

Safe handling

## Precautions for safe handling

## Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs.

## ▶ Use in a well-ventilated area.

When handling DO NOT eat, drink or smoke.

- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Chemwatch: **26-6473**Version No: **8.1.6.1** 

## Page 4 of 9

### **Rowe Scientific Sodium Thiosulfate Solution**

Issue Date: **10/06/2021**Print Date: **10/06/2021** 

## 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

None known















- X Must not be stored together
- May be stored together with specific preventions
- + May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

## **SECTION 8 Exposure controls / personal protection**

### **Control parameters**

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

### **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
sodium thiosulfate	50 mg/m3	550 mg/m3	3,300 mg/m3
sodium thiosulfate	38 mg/m3	410 mg/m3	2,500 mg/m3

Ingredient	Original IDLH	Revised IDLH
sodium thiosulfate	Not Available	Not Available
water	Not Available	Not Available

## **Occupational Exposure Banding**

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
sodium thiosulfate	E	≤ 0.01 mg/m³
Notes:	Occupational exposure banding is a process of assigning chemical potency and the adverse health outcomes associated with exposure band (OEB), which corresponds to a range of exposure concentration.	ire. The output of this process is an occupational exposure

## **Exposure controls**

## Appropriate engineering controls

General exhaust is adequate under normal operating conditions.

## Personal 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

# Eye and face protection

Version No: **8.1.6.1** 

## **Rowe Scientific Sodium Thiosulfate Solution**

Issue Date: **10/06/2021** Print Date: **10/06/2021** 

	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.

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	-AUS / Class1 P2	-
up to 50	1000	-	-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	-2 P2
up to 100	10000	-	-3 P2
100+			Airline**

<sup>\* -</sup> Continuous Flow \*\* - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## **SECTION 9 Physical and chemical properties**

## Information on basic physical and chemical properties

Appearance	Clear 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
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 (%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

## **SECTION 10 Stability and reactivity**

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.

Chemwatch: 26-6473 Page 6 of 9 Issue Date: 10/06/2021 Version No: 8.1.6.1 Print Date: 10/06/2021

### **Rowe Scientific Sodium Thiosulfate Solution**

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	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.  Thiosulfate salts are poorly absorbed and stimulate the emptying of the bowel.
Skin Contact	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	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Rowe Scientific Sodium	TOXICITY	IRRITATION	
Thiosulfate Solution	Not Available	Not Available	
	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>	Not Available	
sodium thiosulfate	Inhalation(Rat) LC50; >2.6 mg/l4h <sup>[1]</sup>		
	Oral(Rat) LD50; >2000 mg/kg <sup>[1]</sup>		
	TOXICITY	IRRITATION	
water	Oral(Rat) LD50; >90000 mg/kg <sup>[2]</sup>	Not Available	
Legend:		ostances - Acute toxicity 2.* Value obtained from manul CS - Register of Toxic Effect of chemical Substances	facturer's SDS.

## SODIUM THIOSULFATE

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	<b>~</b>	Reproductivity	×
Serious Eye Damage/Irritation	<b>~</b>	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×

X - Data either not available or does not fill the criteria for classification Legend:

Data available to make classification

## **SECTION 12 Ecological information**

### **Rowe Scientific Sodium Thiosulfate Solution**

Issue Date: **10/06/2021**Print Date: **10/06/2021** 

Danie Calantifia Cadinia	Endpoint	Test Duration (hr)	Species	Value	Source
Rowe Scientific Sodium Thiosulfate Solution	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	>10mg/l	2
sodium thiosulfate	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	LC50	96h	Fish	40800mg/L	4
	EC50	48h	Crustacea	230mg/l	2
water	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
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
sodium thiosulfate	HIGH	HIGH
water	LOW	LOW

## **Bioaccumulative potential**

Ingredient	Bioaccumulation
sodium thiosulfate	LOW (LogKOW = -1.529)

## Mobility in soil

Ingredient	Mobility
sodium thiosulfate	LOW (KOC = 6.124)

## **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.

## **SECTION 14 Transport information**

## **Labels Required**

Educio 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

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

## Page 8 of 9

## **Rowe Scientific Sodium Thiosulfate Solution**

Issue Date: **10/06/2021**Print Date: **10/06/2021** 

Product name	Group
sodium thiosulfate	Not Available
water	Not Available

## Transport in bulk in accordance with the ICG Code

Product name	Ship Type
sodium thiosulfate	Not Available
water	Not Available

## **SECTION 15 Regulatory information**

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

sodium thiosulfate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

water is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

## **National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (sodium thiosulfate; 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 - FBEPH	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	10/06/2021
Initial Date	01/11/2009

## **SDS Version Summary**

Version	Date of Update	Sections Updated
7.1.1.1	06/07/2020	Synonyms
7.1.2.1	27/04/2021	Regulation Change
7.1.3.1	04/05/2021	Regulation Change
7.1.4.1	07/05/2021	Regulation Change
7.1.5.1	11/05/2021	Regulation Change
7.1.5.2	30/05/2021	Template Change
7.1.5.3	04/06/2021	Template Change

Chemwatch: 26-6473 Page 9 of 9 Version No: 8.1.6.1

### **Rowe Scientific Sodium Thiosulfate Solution**

Version **Date of Update Sections Updated** 05/06/2021 7.1.5.4 Template Change 7.1.6.4 08/06/2021 Regulation Change 09/06/2021 7.1.6.5 Template Change 8.1.6.5 10/06/2021 Name

## Other information

## Ingredients with multiple cas numbers

Name	CAS No
sodium thiosulfate	7772-98-7, 10102-17-7

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

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

ES: Exposure Standard 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

AIIC: Australian Inventory of Industrial Chemicals

**DSL: Domestic Substances List** NDSL: Non-Domestic Substances List

IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

**ELINCS: European List of Notified Chemical Substances** 

NLP: No-Longer Polymers

**ENCS: Existing and New Chemical Substances Inventory** 

KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act TCSI: Taiwan Chemical Substance Inventory INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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Issue Date: 10/06/2021

Print Date: 10/06/2021