# Rowe Scientific DTNB Reagent ROWE SCIENTIFIC

Chemwatch: **30-3710** Version No: **7.1** 

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

# Chemwatch Hazard Alert Code: 1

Issue Date: **01/03/2023** Print Date: **01/03/2023** L.GHS.AUS.EN.E

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

Product Identifier	
Product name	Rowe Scientific DTNB Reagent
Chemical Name	Not Applicable
Synonyms	Product Code: CD0800, CD1549
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 manufacturer or 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]	Serious Eye Damage/Eye Irritation Category 2B
Legend:	1. Classified by Chemwatch: 2. Classification drawn from HCIS: 3. Classification drawn from Regulation (FU) No 1272/2008 - Annex VI

## Label elements

Label elements	
Hazard pictogram(s)	Not Applicable
Signal word	Warning

# Hazard statement(s)

H320	Causes eye irritation.

# Precautionary statement(s) Prevention

P264	Wash all exposed external body areas thoroughly after handling.
Proceedings we extended the Post of the Po	

# 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.

## Precautionary statement(s) Storage

Not Applicable

# Precautionary statement(s) Disposal

Not Applicable

# **SECTION 3 Composition / information on ingredients**

Page 2 of 8

Rowe Scientific DTNB Reagent

Issue Date: **01/03/2023**Print Date: **01/03/2023** 

#### **Substances**

See section below for composition of Mixtures

## **Mixtures**

CAS No	%[weight]	Name
64-17-5	1-10	ethanol
Not Available	1-10	phosphates non-hazardous
69-78-3	<1	5.5'-dithiobis(2-nitrobenzoic acid)
7732-18-5	>60	water
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

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	<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>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

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

Treat symptomatically.

# **SECTION 5 Firefighting measures**

# **Extinguishing media**

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances.

- In such an event consider:

   foam.
  - dry chemical powder.
  - carbon dioxide.

# Special hazards 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>The material is not readily combustible under normal conditions.</li> <li>However, it will break down under fire conditions and the organic component may burn.</li> <li>Not considered to be a significant fire risk.</li> <li>Heat may cause expansion or decomposition with violent rupture of containers.</li> <li>Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).</li> <li>May emit acrid smoke.</li> <li>Decomposes on heating and produces toxic fumes of: carbon dioxide (CO2) nitrogen oxides (NOx) phosphorus oxides (POx) other pyrolysis products typical of burning organic material.</li> </ul>	
HAZCHEM	Not Applicable	

# **SECTION 6 Accidental release measures**

Issue Date: **01/03/2023**Print Date: **01/03/2023** 

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**

Precautions for safe handling	
Safe handling	<ul> <li>Limit all unnecessary personal contact.</li> <li>Wear protective clothing when risk of exposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Avoid contact with incompatible materials.</li> <li>When handling, DO NOT eat, drink or smoke.</li> <li>Keep containers securely sealed when not in use.</li> <li>Avoid physical damage to containers.</li> <li>Always wash hands with soap and water after handling.</li> <li>Work clothes should be laundered separately.</li> <li>Use good occupational work practice.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
Other information	<ul> <li>Store in original containers.</li> <li>Keep containers securely sealed.</li> <li>Store in a cool, dry, well-ventilated area.</li> <li>Store away from incompatible materials and foodstuff containers.</li> <li>Protect containers against physical damage and check regularly for leaks.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

# Conditions for safe storage, including any incompatibilities

Suitable container	Flastic container is suitable for laboratory quantities  Plastic container
Storage incompatibility	None known

# 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	ethanol	Ethyl alcohol	1000 ppm / 1880 mg/m3	Not Available	Not Available	Not Available

## Emergency Limits

Ingredient	TEEL-1	TEEL-2		TEEL-3
ethanol	Not Available	Not Available		15000* ppm
Ingredient	Original IDLH		Revised IDLH	
ethanol	3,300 ppm		Not Available	
5,5'-dithiobis(2-nitrobenzoic acid)	Not Available		Not Available	
water	Not Available		Not Available	

## Occupational Exposure Banding

Notes:

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

## **Rowe Scientific DTNB Reagent**

Issue Date: **01/03/2023**Print Date: **01/03/2023** 

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit	
5,5'-dithiobis(2-nitrobenzoic acid)	E	≤ 0.01 mg/m³	
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.		

#### MATERIAL DATA

None assigned. Refer to individual constituents.

# **Exposure controls**

Appropriate engineering controls	General exhaust is adequate under normal operating conditions.
Individual protection measures, such as personal protective equipment	
Eye and face protection	<ul> <li>Safety glasses with side shields; or as required,</li> <li>Chemical goggles.</li> <li>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]</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul> <li>Wear chemical protective gloves, e.g. PVC.</li> <li>Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>
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:

Rowe Scientific DTNB Reagent

Material	CPI
BUTYL	A
NEOPRENE	A
NATURAL RUBBER	С
NATURAL+NEOPRENE	С
NITRILE	С
NITRILE+PVC	С
PE/EVAL/PE	С
PVA	С
PVC	С
VITON	С

<sup>\*</sup> 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.

## Respiratory protection

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	Air-line*	A-2	A-PAPR-2 ^
up to 10 x ES	-	A-3	-
10+ x ES	-	Air-line**	-

<sup>\* -</sup> Continuous Flow; \*\* - Continuous-flow or positive pressure demand ^ - Full-face

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

	mornian on addition projection and oncome properties				
Appearance	Clear liquid; mixes with water.				
Physical state	Liquid	Relative density (Water = 1)	~1.0		
Odour	Not Available	Partition coefficient n-octanol / water			

Page 5 of 8 Version No: 7.1

Issue Date: 01/03/2023 Print Date: 01/03/2023 **Rowe Scientific DTNB Reagent** 

	1		1
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	78	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	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 Available

# **SECTION 10 Stability and reactivity**

B	
Reactivity	See section 7
Chemical stability	Product is considered stable and 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	tovico	logical	offocto

Inhaled	Not normally a hazard due to non-volatile nature of product		
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Ingestion may result in nausea, abdominal irritation, pain and vomiting		
Skin Contact	Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.		
Еуе	Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.		
Chronic	Long-term exposure to the product is not thought to produce cf models); nevertheless exposure by all routes should be minimized.	nronic effects adverse to health (as classified by EC Directives using animal sed as a matter of course.	
Rowe Scientific DTNB	TOXICITY	IRRITATION	
Reagent	Not Available	Not Available	
	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: 17100 mg/kg <sup>[1]</sup>	Eye (rabbit): 500 mg SEVERE	
	Inhalation(Rat) LC50: 64000 ppm4h <sup>[2]</sup>	Eye (rabbit):100mg/24hr-moderate	
ethanol	Oral (Rat) LD50: 7060 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>	
		Skin (rabbit):20 mg/24hr-moderate	
		Skin (rabbit):400 mg (open)-mild	
		Skin: no adverse effect observed (not irritating) <sup>[1]</sup>	
5,5'-dithiobis(2-nitrobenzoic	TOXICITY	IRRITATION	
acid)	Not Available	Not Available	
	тохісіту	IRRITATION	
water	Oral (Rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available	
Legend:	Nalue obtained from Europe ECHA Registered Substances specified data extracted from RTECS - Register of Toxic Effect	Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise of chemical Substances	
	·		

Chemwatch: 30-3710 Page 6 of 8

Version No: 7.1 **Rowe Scientific DTNB Reagent**  Issue Date: 01/03/2023 Print Date: 01/03/2023

ETHANOL	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.		
5,5'-DITHIOBIS(2- NITROBENZOIC ACID)	Asthma-like symptoms may continue for months or ever known as reactive airways dysfunction syndrome (RAD: criteria for diagnosing RADS include the absence of pre asthma-like symptoms within minutes to hours of a doct airflow pattern on lung function tests, moderate to sever lymphocytic inflammation, without eosinophilia. RADS (in the concentration of and duration of exposure to the irrit result of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough a	S) which can occur after exposure to levious airways disease in a non-atopic umented exposure to the irritant. Othe re bronchial hyperreactivity on methac or asthma) following an irritating inhal tating substance. On the other hand, it g substance (often particles) and is considered.	high levels of highly irritating compound. Main individual, with sudden onset of persistent or criteria for diagnosis of RADS include a reversible sholine challenge testing, and the lack of minimal ation is an infrequent disorder with rates related to industrial bronchitis is a disorder that occurs as a
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	×	STOT - Repeated Exposure	×
sensitisation	,	OTOT Repeated Expedite	, <b>^</b>

Legend:

X − Data either not available or does not fill the criteria for classification
 ✓ − Data available to make classification

# **SECTION 12 Ecological information**

# Toxicity

Rowe Scientific DTNB Reagent	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	96h	Algae or other aquatic plants	<0.001mg/L	4
	EC50	72h	Algae or other aquatic plants	275mg/l	2
ethanol	LC50	96h	Fish	42mg/l	4
	EC50	96h	Algae or other aquatic plants	<0.001mg/L	4
	EC50	48h	Crustacea	2mg/l	4
5,5'-dithiobis(2-nitrobenzoic acid)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
water	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Ecotox databa		CHA Registered Substances - Ecotoxicological Informat. C Aquatic Hazard Assessment Data 6. NITE (Japan) - Bi		

DO NOT discharge into sewer or waterways.

# Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ethanol	LOW (Half-life = 2.17 days)	LOW (Half-life = 5.08 days)
water	LOW	LOW

# Bioaccumulative potential

Ingredient	Bioaccumulation
ethanol	LOW (LogKOW = -0.31)

# Mobility in soil

Ingredient	Mobility
ethanol	HIGH (KOC = 1)

# **SECTION 13 Disposal considerations**

## Waste treatment methods

## **Rowe Scientific DTNB Reagent**

Issue Date: 01/03/2023 Print Date: 01/03/2023

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**

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

Product name	Group
ethanol	Not Available
5,5'-dithiobis(2-nitrobenzoic acid)	Not Available
water	Not Available

## Transport in bulk in accordance with the IGC Code

Product name	Ship Type
ethanol	Not Available
5,5'-dithiobis(2-nitrobenzoic acid)	Not Available
water	Not Available

# **SECTION 15 Regulatory information**

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

ethanol is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

## 5,5'-dithiobis(2-nitrobenzoic acid) 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	
National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (ethanol; 5,5'-dithiobis(2-nitrobenzoic acid); water)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (5,5'-dithiobis(2-nitrobenzoic acid))
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (5,5'-dithiobis(2-nitrobenzoic acid))
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (5,5'-dithiobis(2-nitrobenzoic acid))
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. These ingredients may be exempt or will require registration.

# **SECTION 16 Other information**

Chemwatch: 30-3710 Issue Date: 01/03/2023 Page 8 of 8 Version No: 7.1

# **Rowe Scientific DTNB Reagent**

Print Date: 01/03/2023

Initial Date 01/11/2009

**SDS Version Summary** 

Version	Date of Update	Sections Updated
6.1	10/12/2021	Classification change due to full database hazard calculation/update.
7.1	01/03/2023	Hazards identification - Classification, Identification of the substance / mixture and of the company / undertaking - 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

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

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.