

1. IDENTIFICATION

Product Name	Tetramethylthiuram monosulphide (TMTM)
Other Names	No Data Available
Uses	Rubber accelerator.
Chemical Family	No Data Available
Chemical Formula	C ₆ H ₁₂ N ₂ S ₃
Chemical Name	Tetramethylthiuram monosulphide
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details



For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories	Acute Toxicity (Oral) - Category 4 Sensitisation (Skin) - Category 1 Long-term Hazard To The Aquatic Environment - Category 2	
Pictograms	 	
Signal Word	Warning	
Hazard Statements	H302	Harmful if swallowed.
	H317	May cause an allergic skin reaction.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary Statements	Prevention	P270 Do not eat, drink or smoke when using this product. P272 Contaminated work clothing should not be allowed out of the workplace. P261 Avoid breathing dust. P273 Avoid release to the environment. P280 Wear protective gloves.
	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. P330 Rinse mouth. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse.
	Disposal	P391 Collect spillage. P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

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

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

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.5B	Substances that are contact sensitisers
	Environmental Hazards	9.1B	Substances that are ecotoxic in the aquatic environment
		9.3B	Substances that are ecotoxic to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Tetramethylthiuram monosulphide	C6H12N2S3	97-74-5	100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	If swallowed: Rinse mouth. Call a Poison Centre or doctor/physician if you feel unwell.
Eye	Eye contact: Promptly flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	Skin contact: Remove material from skin promptly. Flush skin with running water for at least 15 minutes/Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse (Contaminated work clothing should not be allowed out of the workplace). If skin irritation or rash occurs, get medical advice/attention.
Inhaled	If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician if experiencing respiratory symptoms, or if you feel unwell.
Advice to Doctor	Treat symptomatically and supportively.
Medical Conditions Aggravated by Exposure	May cause an allergic skin reaction.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Combustible in contact with open flame.
Extinguishing Media	In case of fire: Use dry chemical powder, foam, Carbon dioxide, water spray or sand for extinction.
Fire and Explosion Hazard	No information available.
Hazardous Products of Combustion	Thermal decomposition can lead to release of irritating or toxic gases/vapours, including Nitrogen compounds, Sulfur compounds, Carbon monoxide, Carbon dioxide.
Special Fire Fighting Instructions	Prevent fire-fighting water from entering surface or groundwater.
Personal Protective Equipment	Fire-fighters should wear self-contained breathing apparatus and appropriate protective equipment.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	2X

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material. Avoid breathing dust. Avoid contact with eyes and skin.
Clean Up Procedures	Use clean, non-sparking tools to collect material and place it into suitable containers for later disposal. Avoid raising dust.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	No information available.
Environmental Precautionary Measures	Do not discharge into drains/surface waters/groundwater. Discharge into the environment must be avoided. Inform the relevant authorities if the product has caused environmental pollution.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away - Keep upwind.

Personal Precautionary Measures

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing/equipment (see SECTION 8).

7. HANDLING AND STORAGE**Handling**

Use this material with adequate ventilation. Provide safety shower and eye wash equipment within the immediate work area. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing dust. Avoid contact with eyes and skin. See SECTION 8 for information on personal protection equipment. Keep away from heat, sparks, open flame, and hot surfaces - No smoking.

Storage

Store in a cool, dry and well-ventilated place. Keep container tightly closed. Keep away from heat and ignition sources. Keep away from incompatible materials (strong oxidants).

Container

Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**General**

Contains no substances with occupational exposure limit values. For dusts from solid substances without specific occupational exposure standards:

- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m³ (total); TWA = 3 mg/m³ (respirable).
- OSHA PEL (Particulates not otherwise regulated): TWA = 15 mg/m³ (total); TWA = 5 mg/m³ (respirable).

Exposure Limits

No Data Available

Biological Limits

No information available.

Engineering Measures

Provide local exhaust or general ventilation system. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion into the general work area.

Personal Protection Equipment

Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended filter type: P (Particulate). Only use equipment tested and approved under appropriate government standards.
Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Protective eyeglasses or chemical safety goggles.
Hand protection: Wear protective gloves. Recommended: Nitrile rubber (NBR) - Penetration time: >480 min. Glove thickness: 0.11 mm.
Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective work clothing.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink, or smoke when using this product. Wash thoroughly after handling, before breaks and at the end of workday. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical State**

Solid

Appearance

Crystalline powder

Odour

Odourless.

Colour

Pale yellow

pH

No Data Available

Vapour Pressure

No Data Available

Relative Vapour Density

No Data Available

Boiling Point

No Data Available

Melting Point

107 - 111 °C

Freezing Point

No Data Available

Solubility

Insoluble in water - Soluble in chloroform, acetone, benzene, toluene

Specific Gravity

1.37 - 1.40

Flash Point

No Data Available

Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.37 g/cm ³
Specific Heat	No Data Available
Molecular Weight	208.37
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Combustible in contact with open flame.
Reactions That Release Gases or Vapours	Thermal decomposition can lead to release of irritating or toxic gases/vapours, including Nitrogen compounds, Sulfur compounds, Carbon monoxide, Carbon dioxide.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage and handling conditions.
Conditions to Avoid	Keep away from flames, sparks and all sources of ignition.
Materials to Avoid	Incompatible with strong oxidants.
Hazardous Decomposition Products	Nitrogen compounds, Sulfur compounds, Carbon monoxide, Carbon dioxide.
Hazardous Polymerisation	No known hazardous reactions under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Acute toxicity: Harmful if swallowed.</p> <p>Skin corrosion/irritation: Insufficient data to classify.</p> <p>Eye damage/irritation: Insufficient data to classify.</p> <p>Respiratory/skin sensitisation: May cause an allergic skin reaction.</p> <p>Germ cell mutagenicity: Insufficient data to classify.</p> <p>Carcinogenicity: Not listed by the International Agency for Research on Cancer (IARC).</p> <p>Reproductive toxicity: Insufficient data to classify.</p> <p>STOT - single exposure: Insufficient data to classify.</p>
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STOT - repeated exposure: Insufficient data to classify.
Aspiration toxicity: Insufficient data to classify.

Acute

Ingestion

Acute toxicity (Oral):
- LD50, Rat: 450 mg/kg

Carcinogen Category

None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Toxic to aquatic life with long lasting effects.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Avoid release to the environment. Collect spillage.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Tetramethylthiuram Monosulfide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	2X
Pack Group	No Data Available
Special Provision	AU01

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetramethylthiuram monosulphide)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2X
Pack Group	III

Special Provision No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetramethylthiuram monosulphide)
Class 9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s) No Data Available
EPG 47 Low To Moderate Hazard Substances
UN Number 3077
Hazchem 2X
Pack Group III
Special Provision No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetramethylthiuram monosulphide)
Class 9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s) No Data Available
ERG 171 Substances (Low to Moderate Hazard)
UN Number 3077
Hazchem 2X
Pack Group III
Special Provision No Data Available

Sea Transport

IMDG Code

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetramethylthiuram monosulphide)
Class 9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s) No Data Available
UN Number 3077
Hazchem 2X
Pack Group III
Special Provision No Data Available
EMS F-A, S-F
Marine Pollutant Yes

Air Transport

IATA DGR

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetramethylthiuram monosulphide)
Class 9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s) No Data Available
UN Number 3077
Hazchem 2X
Pack Group III
Special Provision No Data Available

National Transport Commission (Australia)

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

Dangerous Goods Classification

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

15. REGULATORY INFORMATION**General Information** No Data Available**Poisons Schedule (Aust)** Not Scheduled**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR003950**National/Regional Inventories**

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	202-605-7
Europe (REACH)	01-2119980834-25-
Japan (ENCS/METI)	Listed
Korea (KECI)	KE-33634
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Listed
USA (TSCA)	Listed

16. OTHER INFORMATION**Related Product Codes** TMTMAA1000, TMTMAA1001, TMTMAA1100, TMTMAA1700, TMTMAA2500, TMTMAA3500**Revision** 2**Revision Date** 26 Jan 2016**Key/Legend**
< Less Than
> Greater Than
AICS Australian Inventory of Chemical Substances
atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)
cm² Square Centimetres
CO₂ Carbon Dioxide
COD Chemical Oxygen Demand
deg C (°C) Degrees Celcius
EPA (New Zealand) Environmental Protection Authority of New Zealand
deg F (°F) Degrees Farenheit
g Grams
g/cm³ Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH₂O Inch of Water
K Kelvin
kg Kilogram
kg/m³ Kilograms per Cubic Metre
lb Pound
LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or **L** Litre
m³ Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m³ Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight