

1. IDENTIFICATION

Product Name	Rubber Accelerator MBTS
Other Names	2-Benzothiazolyl Disulfide; 2-mercaptobenzothiazole Disulfide; Benzothiazole, 2,2'-dithiobis-; MBTS; Mercaptobenzothiazole Disulfide
Uses	No Data Available
Chemical Family	No Data Available
Chemical Formula	C14H8N2S4
Chemical Name	Rubber Accelerator MBTS
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

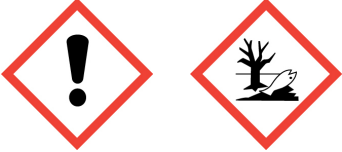
For emergencies only; DO NOT contact these companies for general product advice.

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	Sensitisation (Skin) - Category 1 Acute Hazard To The Aquatic Environment - Category 1 Long-term Hazard To The Aquatic Environment - Category 1		
Pictograms			
Signal Word	Warning		
Hazard Statements	EUH031	Contact with acids liberates toxic gas.	
	H317	May cause an allergic skin reaction.	
	H400	Very toxic to aquatic life.	
	H410	Very toxic to aquatic life with long lasting effects.	
Precautionary Statements	Prevention	P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
		P273	Avoid release to the environment.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
	Response	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
		P391	Collect spillage.
	Disposal	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	6.5B	Substances that are contact sensitisers
	Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
2,2'-Dithio(bis)benzothiazole	No Data Available	120-78-5	100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Inhaled	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	Product is a non-flammable solid.
Extinguishing Media	Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Hazardous Products of Combustion	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Carbon monoxide, oxides of nitrogen, oxides of sulfur, carbon dioxide.
Special Fire Fighting Instructions	Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).
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	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Avoid generating dust. Stop leak if safe to do so. Isolate the danger area. Use clean, non-sparking tools and equipment.
Clean Up Procedures	Contain and sweep/shovel up spills with dust binding material or use an industrial vacuum cleaner. Transfer to a suitable, labelled container and dispose of promptly as hazardous waste.
Containment	Stop leak if safe to do so. Isolate the danger area.
Environmental Precautionary Measures	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. Minimize dust generation and accumulation.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for

deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. This product has a UN classification of 3077 and a Dangerous Goods Class 9 (Miscellaneous) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail. NOTE: This product is subject to special provision AU01 according to The ADG7. SP No. AU01 Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

- (a) packagings;
- (b) IBCs; or
- (c) any other receptacle not exceeding 500 kg(L).

Container

Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m³ (for inspirable dust) and 3mg/m³ (for respirable dust).

Exposure Limits

No Data Available

Biological Limits

No information available on biological limit values for this product.

Engineering Measures

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection Equipment

RESPIRATOR: Wear an approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced (AS1715/1716).
EYES: Wear appropriate protective eyeglasses or chemical safety goggles (AS1336/1337).
HANDS: Wear appropriate protective gloves to prevent skin exposure (AS2161).
CLOTHING: Wear appropriate protective clothing to prevent skin exposure and safety footwear (AS3765/2210).

Work Hygienic Practices

No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Solid

Appearance

Powder

Odour

Aromatic odour

Colour

Yellow

pH

No Data Available

Vapour Pressure

No Data Available

Relative Vapour Density

No Data Available

Boiling Point

No Data Available

Melting Point

177 - 183 °C

Freezing Point

177 - 183 °C

Solubility

Insoluble

Specific Gravity

1.54g/cm³ (20°C)

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

No Data Available

Specific Heat

No Data Available

Molecular Weight

332.49 g/mol

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 Data Available
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperatures and pressures. Contact with acids liberates toxic gas, Sulfur oxides.
Conditions to Avoid	Dust generation.
Materials to Avoid	Strong oxidizing agents, acids.
Hazardous Decomposition Products	Carbon monoxide, oxides of nitrogen, oxides of sulfur, carbon dioxide. Contact with acids liberates toxic gas, Sulfur oxides.
Hazardous Polymerisation	Hazardous polymerization has not been reported.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Oral, mouse: LD50 = 7 gm/kg Oral, rat: LD50 = >12 gm/kg Skin, rabbit: LD50 = >7940 mg/kg Epidemiology: Five cases of allergic contact dermatitis from rubber footwear were investigated by a combination of patch testing in patients and chemical analysis of causative rubber products. This group of studies revealed MBTS as a causative chemical in 3 cases. MBT and MBTS were determined in each item of causative footwear.</p>
EyeIrritant	May cause eye irritation. Dust may cause mechanical irritation.
Ingestion	May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. May cause allergic reaction. 2,2-Dithio-bisbenzothiazole (MBTS) are found in many rubber product. They have been studied to relate the amount of sensitizer eliciting allergic contact dermatitis to the quantity leaching from MBTS containing products into various biological fluids: normal saline, human plasma and synthetic sweat solutions. Enough leached to elicit an allergic response.
Inhalation	May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.
SkinIrritant	May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Daphnia: Daphnia: 82mg/L; 48 Hr; EC50 Fish: Bluegill/Sunfish: 82mg/L; 48 Hr; LC50 Fish: Rainbow trout: 66mg/L; 96 Hr; LC50 Fish: Fathead Minnow: >1000 mg/L; 96 Hr; LC50 Algae: 0.7 mg/L; 96 Hr; EC50 No data available.
Persistence/Degradability	No Data Available
Mobility	No Data Available
Environmental Fate	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment. Do not allow product to enter drains, waterways or sewers.
Bioaccumulation Potential	No Data Available
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	RUBBER ACCELERATOR MBTS
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	SPAU01

Land Transport (Malaysia)

ADR

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (2,2'-Dithio(bis)benzothiazole)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (2,2'-Dithio(bis)benzothiazole)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (2,2'-Dithio(bis)benzothiazole)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
ERG	171 Substances (Low to Moderate Hazard)
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

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

Air Transport

IATA DGR

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (2,2'-Dithio(bis)benzothiazole)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
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)
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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 HSR005342

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	204-424-9
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Listed
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)	Not Determined
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes MBTSAA1000, MBTSAA1001, MBTSAA1002, MBTSAA1003, MBTSAA1100, MBTSAA1700, MBTSAA1701, MBTSAA2000, MBTSAA2200, MBTSAA2500, MBTSAA2600, MBTSAA3000, MBTSAA3001, MBTSAA3500, MBTSAA4000, MBTSAA4100, MBTSAA4500

Revision 3

Revision Date 01 Aug 2015

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