



## MERCHEM LIMITED

### SAFETY DATA SHEET

THIRAM  
MSDS No. 48/20.03.2015

#### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

##### 1.1 Product Identifier

Product Name Thiram  
Synonym Tetra Methyl Thiuram disulphide

##### 1.2 Use of the Substance/Mixture

Identified uses Fungicide

##### 1.3 Manufacturer or supplier's details

Company/Undertaking identification address Merchem Limited  
Grove Centre,  
44- Development Plot,  
Kalamassery,  
Cochin – 683 109, Kerala, India  
Telephone + 91-484-4089300  
Telefax + 91-484-4089310

##### 1.4 Emergency Telephone Number

Emergency Telephone Number + 91-484-4089300

#### SECTION 2: HAZARDS IDENTIFICATION

##### 2.1 Classification of the substance or mixture

Classification according to EU directives 67/548/EEC or 1999/45/EC

N  
Xn  
Xi  
R20/22  
R36/38  
R43  
R48/22  
R50/53

EC Number: 205-286-2

Annex 1 Index Number: 006-005-00-4

REGULATION (EC) No. 1272/2008

Classification of the substance or mixture Acute tox: Cat. 4; Skin sensitization: Cat. 1; Aquatic acute: Cat. 1; Germ cell mutagenicity Cat. 2; Specific target organ toxicity, single exposure; Respiratory tract irritation Cat.3



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#### 2.2 Label elements

Product Name: THIRAM

Hazard pictograms



Signal Word



Warning

#### Hazard Statements

- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled
- H335 May cause respiratory irritation.
- H341 May cause mutagenic effects
- H410 Very toxic to aquatic life with long lasting effects.

#### Precautionary Statements - Prevention

- P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P262 Avoid contact with skin ,eyes and clothing
- P264 Wash hands thoroughly after handling
- P271 Use only outdoors or in a ventilated area
- P273 Avoid release to the environment.
- P281 Wear protective gloves.

#### Precautionary Statements - Response

- P301+ P312 If swallowed, seek advice of a medical practitioner
- P302+P352 If on skin, wash with plenty of soap and water
- P304+P340 If inhaled, remove victim to fresh air
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Precautionary Statements - storage

- P403+P233 store in a well ventilated place. Keep container closed

#### Precautionary Statements - Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.
- Supplemental Hazard Statements : None

#### Other hazards

None

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Chemical description : Tetramethyl thiuramdisulphide



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#### Composition/Information on ingredients

Chemical Name	CAS No.	EC No.	Annex-1 Index No.	Weight %
Tetramethyl thiuram disulphide	137-26-8	205-286-2	006-005-00-4	98%

#### 3.2 Mixtures

Not applicable. Substance is not a mixture

### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of first-aid measures

**General Advice** If symptoms persist, call a physician. Show this material safety data sheet to the doctor in attendance. Treat symptomatically. Use of alcoholic beverages may enhance toxic effects. In case of allergic reaction after exposure, any future exposure must be avoided. Dust must be irritating to the respiratory tract and cause symptoms of bronchitis and also Irritating to eyes.

**Inhalation** : Move to fresh air, if symptoms persist, seek medical advice

**Skin contact** : Wash immediately with soap and water

**Eye contact** : Rinse immediately as long as a possible with plenty of water. Seek medical advice if irritation persist

**Ingestion** :Rinse mouth ,give water to drink

#### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled .May cause respiratory irritation. May cause mutagenic effects . Very toxic to aquatic life with long lasting effects.

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

No data available

### SECTION 5: FIRE FIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Specific hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NOx), Sulphur oxides



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#### **5.3 Protective Equipment and Precautions for Firefighters**

Wear self contained breathing apparatus for fire fighting if necessary

### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas.

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

#### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

#### **6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal

#### **6.4 Reference to other sections**

See section 7, 8 and 13

### **SECTION 7: HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

#### **7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

#### **7.3 Specific end uses**

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

### **SECTION 8: EXPOSURE CONTROL/PERSONNEL PROTECTION**

#### **8.1 Control parameters**

Components with workplace control parameters

#### **8.2 Exposure controls**

##### **Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.



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#### Personal Protective Equipment:

**Eye/face Protection** :Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin Protection** :Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

**Hand Protection** :Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

**Respiratory Protection:** For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges .Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Environmental exposure controls:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance Form	:solid powder
b) colour	:Light cream
c) Odour	:slightly amine like
d) pH	:No data available
e) Melting point/range	: Min.142°C
f) Boiling point /boiling range	: 307°C
g) Flash point	:138°C(open cup)
h) Explosive propertive	:dust explosion hazard
i) Flammability (solid, gas)	:No data available
j) Explosion Limits	: Lower Explosion Limit (LEL): 10 g/m <sup>3</sup> , Minimum ignition energy: =<10 mJ, Limiting oxygen concentration (LOC) (V >=1 m <sup>3</sup> ): 7.4 Vol % Oxygen.
k) Vapour pressure	: Negligible
l) Specific gravity	: 1.4
m) Bulk density	: 410-450kg/m <sup>3</sup> (20 °C)
n) solubility	; Insoluble in water and soluble in Acetone and Chloroform
o) Partition coefficient	:1.76
p) Auto-ignition temperature	:>400°C
q) Decomposition temperature	:No data available
r) Viscosity	: Not applicable
s) Oxidizing properties	:No data available



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#### 9.2 Other information

No data available

### SECTION 10: STABILITY AND REACTIVITY

#### 10.1 Reactivity

See Incompatible Materials

#### 10.2 Chemical Stability

- Stable under recommended storage and handling conditions (See section 7)

#### 10.3 Possibility of hazardous reactions

- No data available

#### 10.4 Conditions to Avoid

High temperature and contact with oxidizing agents Alkalis, and acids

#### 10.5 Incompatible materials to avoid

Oxidising agents, Acids, Alkalis and Nitrosating agents for example. nitrites, nitrates and nitrogen oxides.

#### 10.6 Hazardous Decomposition Products

- Heating or fire can release toxic gas  
Nitrogen oxides (NO<sub>x</sub>)  
Sulphur dioxide (SO<sub>2</sub>)  
Carbon oxides (CO<sub>x</sub>)

**10.7 Other Information** : During the vulcanization process, traces of carcinogenic N-nitrosamines may be formed from decomposition products (amines) in the presence of nitrosating agents.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

<b>Acute oral toxicity</b> (LD50/oral/rat):	1080 mg/Kg
<b>Acute dermal toxicity</b> (LD50/dermal/rabbit):	>7900 mg/Kg
<b>Acute inhalational toxicity:</b>	rat:4.42mg/l
<b>Ingestion:</b>	Harmful if swallowed. May cause head ache, nausea, vomiting, and gastrointestinal irritation.
<b>Eye irritation:</b>	Irritating to eyes
<b>Skin irritation/Sensitization:</b>	Irritating to skin, Sensitization possible through skin contact
<b>Mutagenic Effects</b>	shows mutagenic effects in animal experiments
<b>Reproductive toxicity:</b>	No toxicity to reproduction
<b>Carcinogenic effects:</b>	Negative in standard tests using bacteria and yeast cells
<b>Human experience:</b>	No data available



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#### SECTION 12: ECOLOGICAL INFORMATION

##### 12.1 Ecotoxicity

**Ecotoxicity** ; 96h-LC50 (Oncorhynchus mykiss): 0.13 mg/l,  
**Fish** : 96h-LC50 (Lepomis macrochirus): 0.13 mg/l,  
**Daphnia** : 96h-LC50 (Pimephales promelas): 0.27 mg/l.  
**Algae** : 48h-EC50 (Daphnia magna): 0.24 mg/l.  
**Bacteria;** :96h-LC50: 1.0 mg/l (Chlorel a pyrenoidosa) (Lit.).  
15min-EC50: 1.9 mg/l (Photobacterium phosphoreum) (Lit.)

##### 12.2 Mobility in soil

No data available

##### 12.3 Persistence and degradability

The substance is substantially biodegradable. There is evidence of photodegradation in water.

##### 12.4 Bioaccumulative Potential

The substance has low potential for bioaccumulation

##### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

##### 12.6 Other adverse effects

Very toxic to aquatic life with long lasting effects.

##### 12.7 Other information

Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms

#### SECTION 13: DISPOSAL CONSIDERATIONS

##### 13.1 Waste Disposal Method

###### Product

Avoid discharge into the environment. This material and its container must be disposed of as hazardous waste.

Disposal should be in accordance with local, state or national legislation

###### .Packing

- Dispose off in accordance with local regulations

#### SECTION 14: TRANSPORT INFORMATION

##### 14.1 Road transport (ADR/RID/ADN)

<b>ADR/RID Class</b>	9
<b>UN-No</b>	3077
<b>Packing Group</b>	III
<b>"Hazard label"</b>	Hazardous for the environment
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetra Methyl thiuram disulphide)



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#### **14.2 Sea transport (IMDG)**

<b>Class</b>	9
<b>UN-No</b>	3077
<b>Packing Group</b>	III
<b>Marine pollutant</b>	Yes
<b>"Hazard label"</b>	Hazardous for the environment
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetra Methyl thiuram disulphide)

#### **14.3 Air transport (ICAO-TI/IATA)**

<b>Class</b>	9
<b>UN-No</b>	3077
<b>Packing Group</b>	III
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetra Methyl thiuram disulphide)

#### **14.4 Other information**

No data available

#### **14.5 Environmental hazards**

Information on environmental hazards, if relevant, pls. see 14.1 - 14.3.

#### **14.6 Special precautions for user**

No data available

#### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not relevant

### **SECTION 15: REGULATORY INFORMATION**

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

Regulation 1907/2006 REGULATION (EC) No 1272/2008  
Classification according to EU directives 67/548/EEC or 1999/45/EC

#### **Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out





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#### SECTION 16: OTHER INFORMATION

Issue No.	2
Issue date :	20.03.2015
Revision No.	0
Reason for revision	Reviewed & revamped based on the guide lines of Regulation (EC) No 1907/2006

#### List of relevant R(isk)-phrase(s)

R20/22 Harmful by inhalation and swallowed.

R36/38 Irritating to eyes and skin.

R43 May cause sensitization by skin contact.

R 48/22 Harmful: danger of serious damage to health by prolonged exposure ifswallowed

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### List of relevant S(afety)-phrase(s)

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S 36/37 Wear suitable protective clothing and gloves

S 60 This material and its container must be disposed of as hazardous waste

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

#### Classification of dangerous substance directive (67/548/EEC)

- Xi - Irritants
- N - Substances or preparations those are dangerous for the environment
- Xn-Harmful

#### Training advice

Provide adequate information, instruction and training to operators

#### Further information for the material safety data sheet

#### **Special notes:**

· Prolonged exposure to TMTD has been associated with the development of chronic conjunctivitis.

· Tests for carcinogenesis were inconclusive but TMTD reacts under nitrosating conditions to produce carcinogenic N-nitrosodimethylamine. A number of co agents have been implicated in the nitrosation of the dimethylamine generated from TMTD on vulcanization, carbon black being the focus of recent research. That adsorbed species on the carbon black can function in this way has been demonstrated, as has the possibility of moderating this effect by attention to dump temperatures.

TMTD, the most toxic of the thiurams, produced deaths and malformations in chicken embryos. Similar effects have been reported in hamsters· The possibility of neurotoxin effects from exposure has been reported.If absorbed into human system before or after consumption of alcohol may give rise to unpleasant side effects (e.g. nausea, vomiting, flushing, etc). Even small quantities, if absorbed by inhalation, may suffice to produce this effect .Listed by the International Contact Dermatitis Group for routine skin patch testing in appropriate circumstances.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

**End of Material Safety Data Sheet**