



MATERIAL SAFETY DATA SHEET

TMTM (TS) TETRAMETHYL THIURAM MONOSULFIDE

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier:

Identification on the label/Trade name: TMTM
Additional identification: Tetramethylthiuram monosulphide
Identification of the product: CAS#97-74-5; EC#202-605-7
Index Number: 006-080-00-3
REACH registration No.: Not available

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

Used as rubber antioxidant.

1.2.2 Uses advised against:

Not available.

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance:

2.1.1 Classification:

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008

Hazard classes/Hazard categories	Hazard statement
Acute Tox. 4	H302
Skin Sens. 1	H317
Aquatic Chronic 2	H411

For full text of H- phrases: see section 2.2.

67/548/EEC

Hazards characteristics	R-Phrases
Xn	R22
Xn	R43
N	R51/53

For full text of R- phrases: see section 16.



2.1.2 The most important adverse effects

2.1.2.1 The most important adverse physicochemical effects:

Not applicable.

2.1.2.2 The most important adverse human health effects:

Harmful if swallowed, May cause an allergic skin reaction.

2.1.2.3 The most important adverse environmental effects:

Toxic to aquatic life with long lasting effects.

2.2 label elements

Hazard Pictograms:



Signal Word(S):

Hazard Statement:

Precautionary Statement:

Warning

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330 Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P501 Dispose of contents/container to local regulations.

2.3 Other hazards

Not available (PBT, vPvB, Substance is an endocrine disruptor etc.)



3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Substance
Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Tetramethylthiuram monosulphide	N/A	97-74-5	202-605-7	>98%

4. FIRST AID MEASURES

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

4.1.2 In case of skin contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

4.1.3 In case of eyes contact:

Remove contact lenses. Hold eyelids apart. Flush immediately with water for at least 15 minutes. Seek medical attention.

4.1.4 In case of ingestion:

Rinse mouth. Give water to drink. Induce vomiting. Never induce vomiting in unconscious or confused persons. Always seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed, May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

If skin irritation or rash occurs, get medical advice/attention.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon dioxide, appropriate foam or dry chemical, water spray, water mist.

Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture

Emits toxic fumes under fire conditions: Carbon monoxide (CO), nitrous gases (NOx).



5.3 Advice for fire-fighters:

Firefighters must wear fire resistant protective equipment. Wear self contained breathing apparatus and protective gloves.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

Remove ignition sources. Provide adequate ventilation. Avoid inhalation of vapor or dust. Avoid skin and eye contact. Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2 For emergency responders:

Wear an appropriate NIOSH/MSHA approved respirator if mist, vapor or dust is generated.

6.2 Environmental Precautions:

Avoid disposing into drainage/sewer system or directly into the aquatic environment. Keeping away from drains, surface-and ground-water and soil.

6.3 Methods for Containment and Cleaning up:

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal. Clean up affected area.

6.4 Reference to other sections:

See Section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

6.5 Additional information:

Wet clean or vacuum up solids.

Don't use a brush or compressed air for cleaning surfaces or clothing.

Clear spills immediately.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Do not breathe dusts/vapor. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.



7.2 Conditions for safe storage, including any incompatibilities:

Requirements for storage rooms and vessels. Keep in original packaging, tightly closed. Advice on storage assembly. Do not store together with foodstuffs. Do not store together with: Acids and Bases.

Further information on storage conditions: Keep container tightly closed and dry in a cool, well-ventilated place.

7.3 Specific end use(s):

Not applicable.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters:

8.1.1 Occupational exposure limits: No exposure limit has been established.

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values: Not available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Avoid dust generation. Ensure good ventilation and local exhaustion of the working area.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection	Wear appropriate goggles to prevent eye exposure.
Hand protection	Wear appropriate gloves to prevent skin exposure.
Body protection	Wear suitable protective clothing to prevent skin exposure.
Respiratory protection	Avoid breathing dust. In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls:

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

According to local regulations, Federal and official regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Dedusted powder; powder; crystal powder; granules
Colour:	Yellow, light cream
Odour:	Characteristic
Odour threshold:	Not available
pH:	Not determined
Melting point/range (°C):	Min. 106 °C
Boiling point/range (°C) :	Not determined
Flash point (°C) :	Not determined (> 150 °C)



Evaporation rate:	Not determined
Flammability (solid, gas):	Not flammable
Ignition temperature (°C):	Not determined (> 200 °C)
Upper/lower flammability/ explosive limits:	Not determined
Vapour pressure (20°C):	Negligible at room temperatures
Vapour density:	Not applicable
Relative Density:	1400 kg/m ³
Bulk density (kg/m³):	400-440 kg/m ³
Water solubility (g/l) :	Practically insoluble
n-Octanol/Water (log Po/w):	Not determined
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa s):	Not determined
Explosive properties:	Not determined
Oxidising properties:	Not applicable

9.2. Other information:

Fat solubility(solvent- oil to be specified) etc: Not available

Surface tension: Not available

Dissociation constant in water(pKa): Not available

Oxidation-reduction Potential: Not available

10. STABILITY AND REACTIVITY

10.1 Reactivity:

The substance is stable under normal storage and handling conditions.

10.2 Chemical stability:

Under normal conditions, the product is stable. No hazardous reaction when handled and stored according to provisions. Hazardous reactions are not known.

10.3 Possibility of hazardous reactions:

Under normal conditions, not hazardous reactions will occur.

10.4 Conditions to avoid:

Heating > 100 °C: May catch fire.

10.5 Incompatible materials:

Oxidising agents. strong acid. Nitrosating agents may form carcinogenic N-nitrosamines.

10.6 Hazardous decomposition products:

Oxidising agents. strong acid. Nitrosating agents may form carcinogenic N-nitrosamines.



11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution

Non-human toxicological data:	Not available
Method:	Not available
Dosis:	Not available
Routes of administration:	Not available
Results:	Not available
Absorption:	Not available
Distribution:	Not available
Metabolism:	Not available
Excretion:	Not available

11.2 Information on toxicological effects

Acute toxicity:

LD50(Oral, Rat):	730-1390 mg/kg
LD50(Dermal Rabbit):	> 2000 mg/kg
LD50(Inhalation, Rat):	Not available

Skin corrosion/Irritation: Slightly irritating to skin but not sufficient for classification.

Serious eye damage/irritation: Slightly irritating to skin but not sufficient for classification.

Respiratory or skin sensitization: May cause sensitization by skin contact.

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

reproductive toxicity: Not classified

STOT- single exposure: Not classified

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

12. ECOLOGICAL INFORMATION

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	2.6 mg/L	96h	Fish	OECD 203	N/A	N/A
LC50	1.6 mg/L	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	96h	Algae	OECD 201	N/A	N/A

Persistence and degradability: Not readily biodegradable.

Bioaccumulative potential: Not applicable.

Mobility in soil: Not available.

Results of PBT&vPvB assessment: Not available.

Other adverse effects: Not applicable.



13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Avoid discharge into the environment. This material and its container must be disposed of as hazardous waste. According to local regulations, Federal and official regulations.

13.2 Product / Packaging disposal:

If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

14. TRANSPORT INFORMATION

	Land transport(ADR /RID)	Sea transport (IMDG)	Air transport (ICAO /IATA)
UN-Number	UN3077	UN3077	UN3077
UN Proper shipping name	Environmentally hazardous, substance, solid,n.o.s. (Tetramethylthiuram monosulphide)	Environmentally hazardous, substance, solid,n.o.s. (Tetramethylthiuram monosulphide)	Environmentally hazardous, substance, solid,n.o.s. (Tetramethylthiuram monosulphide)
Transport hazard Class	9	9	9
Packaging group	III	III	III
Environmental	Environmentally hazardous substances	Environmentally hazardous substances	Environmentally hazardous substances
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	IBC08	IBC08	IBC08

15. REGULATION INFORMATION

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

Relevant information regarding authorization: Not applicable.

Relevant information regarding restriction: Not applicable.

Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.



Other National regulations: Not applicable

Chemical Safety Assessment has been carried out? YES NO

16. OTHER INFORMATION

16.1 Indication of changes Version 1.1 Amended by EU No 453/2010

16.2 Relevant R- phrases (number and full text):

R22 Harmful if swallowed.

R43 May cause sensitization by skin contact.

R51-53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.3 Training instructions:

Not applicable.

16.4 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. TM

16.5 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.