

Mixslab[®] TMTD

| 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION | |
|---|---|
| Manufacturer Shandong Yanggu Huatai Chemical Co., LTD No.217, Qinghexi Road Yanggu County, Shandong, China 252300 | Emergency Contact Chemtrec: 1-800-424-9300 (USA) (1)330-542-8400 (outside USA) |
| Trade Name(s): Mixslab [®] TMTD 75 | Synonyms: TMTD, thiram, Thioperoxydicarbonic diamide tetramethyl. Bis (dimethylthiocarbamoyl) disulfide |
| Chemical Name: Tetramethylthiuram disulfide | CAS Number: 137-26-8 |
| Relevant identified uses of the substance or mixture and uses advised against: No further relevant information available. | Application of the substance/the preparation: Curing agent/ cross-linker/ Vulcanizing agent Rubber compounding |
| Issued By: Sovereign Chemical Company According to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS | Date of Issue: November 1, 2018 |

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation:
 H400, H410.



GHS08 Health hazard
 STOT RE 2

H373 May cause damage to organs through prolonged or repeated



GHS09 Environment
 Aquatic Acute 1
 Aquatic Chronic 1

H400 Very toxic to aquatic.
 H410 Very toxic to aquatic life with long lasting effects.



GHS07
 Acute Tox. 4
 Acute Tox. 4
 Skin Irrit. 2
 Eye Irrit. 2
 Skin Sens. 1

H302 Harmful if swallowed.
 H332 Harmful if inhaled.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn; Harmful
 R22-48/22

Harmful if swallowed. Harmful: danger of serious damage to health by prolonged exposure if



Xi; Sensitizing
 R43

May cause sensitization by skin contact.



N; Dangerous for the environment.
 R50/53 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS)



GHS07 GHS08 GHS09

Signal word: Warning

Hazard-determining components of labeling: thiram

Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation:
 H410.

- H302 Harmful if swallowed.
- +H332 Harmful if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H317 May cause an allergic skin reaction.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P260 Do not breathe dust.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description

WHMIS-symbols



D2A -Very toxic material causing other toxic effects

NFPA ratings (scale 0-4)



Health = 2
 Fire = 1
 Reactivity = 0

HMIS ratings (scale 0-4)

| | |
|------------|----|
| HEALTH | *2 |
| FIRE | 1 |
| REACTIVITY | 0 |

Health = *2
Fire = 1
Reactivity = 0

Indicates a long-term health hazard from repeated or prolonged exposures.
HMIS Long Term Health Hazard Substances: None of the ingredients is listed.

2.3 Other hazards








Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components

| | | |
|--|--|---------|
| CAS: 137-26-8 EINECS: 205-286-2 Index number: 006-005-00-4 | thiram  Xn, R20/22-48/22;  Xi R36/38;  Xi R43;  N R50/53  STOT RE 2, H373  Aquatic Acute 1, H400; Aquatic Chronic 1, H410  Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 | 50-100% |
|--|--|---------|

Additional information: For the wording of the listed risk phrases refer to section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General information

Symptoms of poisoning may even occur after several hours; therefore, medical observation for at least 48 hours after the accident.

Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact

Brush off loose particles from skin.

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.
A person vomiting while lying on their back should be turned onto their side.

4.2 Most important symptoms and effects, both acute and delayed

Headache
Nausea
Gastric or intestinal disorders.
Coughing
Dizziness
Allergic reactions
Irritant to skin and mucous membranes.
Irritant to eyes.
Disorientation

Hazards

Danger of convulsion.
Danger of impaired breathing.
Danger of circulatory collapse.
Danger of disturbed cardiac rhythm.
Condition may deteriorate with alcohol consumption.

4.3 Indication of any immediate medical attention and special treatment needed

Contains THIRAM. Consult literature for specific antidotes.
If swallowed, gastric irrigation.
If necessary oxygen respiration treatment.
Treat skin and mucous membrane with antihistamine and corticoid preparations.
In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.
Medical supervision for at least 48 hours.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons, unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture: Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters

Protective equipment

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information: Cool endangered receptacles with water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Avoid formation of dust.

6.2 Environmental precaution

Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.
Damp down dust with water spray.

6.3 Methods and material for containment and cleaning up

Ensure adequate ventilation.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.

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 disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Prevent formation of dust.
Any unavoidable deposit of dust must be regularly removed.
Thorough dedusting.
Store in cool, dry place in tightly closed receptacles.
Ensure good ventilation/exhaustion at the workplace.
Take note of emission threshold.

Information about fire - and explosion protection

Keep respiratory protective device available.
Dust can combine with air to form an explosive mixture.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles

Store in a cool location.
Provide ventilation for receptacles.
Protect from humidity and water.
Avoid storage near extreme heat, ignition sources or open flame.

Information about storage in one common storage facility

Store away from oxidizing agents.
Do not store together with acids.
Store away from foodstuffs.

Further information about storage conditions

Keep container tightly sealed.
Protect from humidity and water.

7.3 Specific end use(s): No further relevant information available.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: 137-26-8 thiram

| | |
|-------------|---|
| PEL (USA) | 5 mg/m ³ |
| REL (USA) | 5 mg/m ³ |
| TLV (USA) | 0.05* mg/m ³ SEN;*as inhalable fraction and vapor |
| EL (Canada) | 1 mg/m ³ S |
| EV (Canada) | 1 mg/m ³ |

DNELs: No further relevant information available.

PNECs: No further relevant information available.

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Pregnant women should strictly avoid inhalation or skin contact.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes and skin.

Respiratory protection



Combined Organic Vapor and Particulate Respirator is recommended for use during all processing

Protection of hands



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection



Safety glasses with side shields or face shield strongly suggested.

Body protection

Full head, face and neck protection.

Protective work clothing

Limitation and supervision of exposure into the environment: No further relevant information available.

Risk management measures

See Section 7 for additional information.

No further relevant information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General Information

| | |
|---|---|
| Appearance Form: Solid. Color: White. | Change in Condition Melting Point/Melting Range: Not determined. Boiling Point/Boiling Range: Undetermined. |
| Odor: Characteristic. | Octanol/Water Partition Coefficient: Not determined. |
| Odor threshold: Not determined. | pH Value: Not applicable. |
| Vapor pressure: Not applicable. | Flash point: Not applicable. |
| Density at 20 °C: 1.22 g/cm ³ . | Flammability (solid, gaseous): May cause fire. |
| Relative density: Not determined. | Ignition temperature: Not determined. |
| Vapor density: Not applicable. | Decomposition temperature: Not determined. |
| Evaporation rate: Not applicable. | Self-igniting: Not determined. |
| Solubility in / Miscibility with water: Insoluble. | Danger of explosion: Product does not present an explosion hazard. |
| Viscosity Dynamic: Not applicable. Kinematic: Not applicable. | Explosion limits Lower: Not determined. Upper: Not determined. |
| Solvent content: Organic solvents: Not determined. | Solids content: Not determined. |

9.2 Other information: No further relevant information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

Risk of dust explosion if enriched with fine dust in the presence of air.

Toxic fumes may be released if heated above the decomposition point.

Reacts with strong oxidizing agents.

Reacts with strong acids.

10.4 Conditions to avoid

Keep ignition sources away - Do not smoke.

Store away from oxidizing agents.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products

Sulfur oxides (SO_x)

Nitrogen oxides (NO_x)

Carbon monoxide and carbon dioxide

Hydrogen cyanide (prussic acid)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Primary irritant effect

On the skin: Irritant to skin and mucous membranes.

On the eye: Irritating effect.

Sensitization

Sensitizing effect through inhalation is possible by prolonged exposure.

Sensitization possible through skin contact.

Additional toxicological information

Harmful

Toxic and/or corrosive effects may be delayed up to 24 hours.

Danger through skin adsorption.

Repeated dose toxicity

Repeated exposures may result in skin and/or respiratory sensitivity.

Repeated exposure may cause skin dryness or cracking.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity: Toxic for aquatic organisms.

12.2 Persistence and degradability: Not easily biodegradable.

12.3 Bioaccumulative potential: May be accumulated in organism.

12.4 Mobility in soil: No further relevant information available.

Ecotoxicological effects

Remark

Very toxic for fish.

Toxic for water fleas.

Additional ecological information

General notes

The product may not be released into the environment without control.

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded.

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also, poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

12.6 Other adverse effects: No further relevant information available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Hand over to hazardous waste disposers.

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

Un-cleaned packaging

Recommendation: Disposal must be made according to official regulations.

14. TRANSPORTATION INFORMATION

14.1 UN-Number

| | |
|-----------------|--------|
| DOT | N/A |
| ADR, IMDG, IATA | UN3077 |

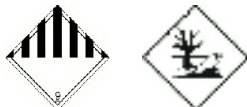
14.2 UN proper shipping name

| | |
|------|---|
| DOT | N/A |
| ADR | 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S (thiram) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiram), MARINE POLLUTANT |
| IATA | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiram) |

14.3 Transport hazard class(es)

| | |
|------------|---------------|
| DOT, Class | Not regulated |
|------------|---------------|

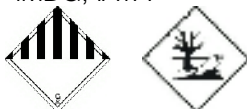
ADR



Class
Label

9 (M7) Miscellaneous dangerous substances and articles.
9

IMDG, IATA



Class

9 Miscellaneous dangerous substances and articles.

| | |
|---|---|
| Label | 9 |
| 14.4 Packing group DOT ADR, IMDG, IATA | Not regulated III |
| 14.5 Environmental hazards Marine pollutant Special Marking (ADR) Special Marking (IATA) | Product contains environmentally hazardous substances: thiram Yes Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree) |
| 14.6 Special precautions for user Danger code (Kemler) EMS Number | Warning: Miscellaneous dangerous substances and articles. 90 F-A, S-F. |
| 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable. | |
| Transport/Additional information | |
| ADR | |
| Limited quantities (LQ) | 5 kg |
| Transport category | 3 |
| Tunnel restriction code | E |
| UN "Model Regulation" | UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiram), 9, III |

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
United States (USA)

| | |
|--|------------------------------------|
| SARA Section 355 (extremely hazardous substances) | None of the ingredients is listed. |
| SARA Section 313 (Specific toxic chemical listings) | 137-26-8 thiram |
| TSCA (Toxic Substances Control Act) | 137-26-8 thiram |
| Proposition 65 (California) | |
| Chemicals known to cause cancer | None of the ingredients is listed. |
| Chemicals known to cause reproductive toxicity for females | None of the ingredients is listed. |
| Chemicals known to cause reproductive toxicity for males | None of the ingredients is listed. |
| Chemicals known to cause developmental toxicity | None of the ingredients is listed. |
| Carcinogenic Categories | |
| EPA (Environmental Protection Agency) | None of the ingredients is listed. |
| IARC (International Agency for Research on Cancer) | 137-26-8 thiram 3 |
| TLV (Threshold Limit Value established by ACGIH) | 137-26-8 thiram A4 |

| | |
|--|------------------------------------|
| NIOSH-Ca (National Institute for Occupational Safety and Health) | None of the ingredients is listed. |
| OSHA-Ca (Occupational Safety & Health Administration) | None of the ingredients is listed. |
| Canada | |
| Canadian Domestic Substances List (DSL) | 137-26-8 thiram |
| Canadian Ingredient Disclosure list (limit 0.1%) | None of the ingredients is listed. |
| Canadian Ingredient Disclosure list (limit 1%) | 137-26-8 thiram |

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- R20/22 Harmful by inhalation and if swallowed.
- R36/38 Irritating to eyes and skin.
- R43 May cause sensitization by skin contact.
- R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Abbreviations and acronyms

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association.
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)