

郑州市双力化工产品有限公司

ZHENGZHOU DOUBLE VIGOUR CHEMICAL PRODUCT CO., LTD

郑州市金水区五金机电城3号院32号

NO.32COURTYARD NO.3 SONGZHAI JINSHUI ZHENGZHOU HENAN CHINA

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MATERIAL SAFETY DATA SHEET FOR TMTD

Product Name: TMTD

Chemical Name: Tetramethylthiuram Disulfide

Synonyms: THIURAD; THIRAM; Bis(dimethyldithiocarbamoyl)disulfide; Thioperoxydicarbonic diamide, tetramethyl-

1. COMPOSITION/INFORMATION ON INGREDIENTS

Components/CAS#	Percent
Tetramethylthiuram Disulfide 137-26-8	95-99
White Mineral Oil 8042-47-5	0-3.0

2. HAZARDS IDENTIFICATION

Hazard Information

Emergency Overview: WARNING! Dust may be irritating to eyes and upper respiratory tract. Fine dust clouds may form explosive mixtures with air. Highly toxic to fish and aquatic invertbrates. May cause sensitization by skin contact. May cause alcohol intolerance

Eye Contact: Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain, and tearing.

Skin Contact: May cause an allergic skin reaction. May be absorbed through the skin and product effects similar to those caused by inhalation and/or ingestion.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance

Ingestion: May cause alcohol intolerance (Antabuse Effect) May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.

3. FIRST AID MEASURES

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

On Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.

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

Swallowed: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Notes To Physician: Treat symptomatically. Exposure by ingestion, inhalation or skin absorption may cause alcohol intolerance (Antabuse Effect)

4. FIRE FIGHTING MEASURES

Flash Point Method: Pensky-Martens Open Cup

Autoignition Temp. (°F/C): Not determined.

Lower Explosion Limit in Air (LEL): Not determined.

Upper Explosion Limit in Air (UEL): Not determined.

Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical

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Special Exposure Hazards: Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

Special Protective Equipment: Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Unusual Fire/Explosion Hazards: Toxic emissions may result if product is involved in a fire.

5. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

Procedure for Cleaning/Absorption: Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Scoop up and remove. Do NOT spread spilled product with water.

6. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid generating or breathing dust. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Reclose containers of unused product. Keep containers tightly closed when not in use. Do not reuse this container.

Storage: Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight.

7. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses or goggles to protect against exposure.

Skin Protection: Normal work coveralls. Launder contaminated clothing before reuse.

Gloves: Use gloves as a standard industrial handling procedure. Appropriate chemical resistant gloves should be worn.

Respiratory Protection: Use in a well ventilated area. Use approved NIOSH respiratory protection if TLV exceeded or if overexposure is likely. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.

Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product.

Airborne Exposure Limits: Tetramethylthiuram Disulfide OSHA PEL/8-Hr TWA = 5 mg/m³ ACGIH TLV/8-Hr TWA = 1 mg/m³ White Mineral Oil OSHA PEL/8-Hr TWA = 5mg/m³ ACGIH TLV/8-Hr TWA = 5mg/m³.

8. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White to off-white powder

Odor: MILD AMINE

pH: Not Applicable

Specific Gravity: 1.43 @20°C

Density: 1.4

Bulk Density: 1425 kg.m³ @20°C

Melting Point (°F/C): 142-157°C

Boiling Point (°F/C): Not Determined

Vapor Pressure: 1.725 x 10⁽⁻⁵⁾ mmHg @ 25°C

Vapor Density (Air=1): Not Applicable

% Volatile by Volume: Less than 0.5% by weight

Solubility in Water: 30 mg/l @25°C

Other Solubility: Soluble in Acetone Organic liquids, including fats and oils Carbon Disulfide

Viscosity: Not Applicable

Other Data: Not Determined.

Molecular Weight: 240.44

Molecular Formula: C₆-H₁₂-N₂-S₄

9. STABILAND REACTIVITY

Chemical Stability: Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation.

Hazardous Polymerization: WILL NOT OCCUR

Conditions to Avoid: Not determined.

Materials to Avoid: Avoid contact with acidic, basic or oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide. Oxides of nitrogen. Oxides of sulfur.

Additional Guidelines: Not Applicable

10. TOXICOLOGICAL INFORMATION

Target Organs

Acute Oral LD50 (mg/kg): 1080 mg/kg (Rat)

Acute Dermal LD50 (mg/kg): >7940 mg/kg (Rabbit)

Acute Inhalation LC50 (mg/l): 500 mg/m³ (Rat)

Principle Routes of Exposure: Dermal - skin. Inhalation.

Ingestion: May cause alcohol intolerance (Antabuse Effect) May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.

Skin Contact: May cause an allergic skin reaction. May be absorbed through the skin and product effects similar to those caused by inhalation and/or ingestion.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the

Eye Contact: Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain, and tearing.

Aggravated Conditions: Alcohol consumption problems.

Carcinogenicity Comment: This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA. Carcinogenic: Category 3 NOTE: May react with nitrosating agents during rubber vulcanization to form nitrosamines. Some nitrosamines are suspect human carcinogens.

Other: Ingestion of the product may result in vomiting.

Primary Irritation Effect: Practically non-irritating to skin and eyes. Probable skin sensitizer.

Carcinogenicity: Negative in standard tests using bacteria and yeast cells.

Genotoxicity: Both positive and negative effects have been reported in standard tests using animals and animal cells.

Reproductive/Developmental Toxicity: No

11. ECOLOGICAL INFORMATION

Acute Fish Toxicity: 96Hr LC50 Rainbow Trout 0.13 mg/l 96Hr LC50 Bluegill Sunfish 0.13 mg/l 96Hr LC50 Guppy 0.27 mg/l

Acute Crustaceans Toxicity: 48Hr LC50 Daphnia Magna 0.21 mg/l

Acute Algae Toxicity: 96Hr LC50 1.00 mg/l

Octanol/Water Coefficient: 1.82 log P

Chemical Fate Information: Hydrolysis Half-life: 9.5 hrs @ pH 3.5 108 hrs @ pH 5.7 1123 hrs @ pH 7.0 3316 hrs @ pH 8.0

Other Information: Tests indicate this material will not bioaccumulate or persist in the environment.

12. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:

This product, if disposed as received, is a listed hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Treatment, storage, reuse and disposal of the waste material must conform to all applicable federal, state and local laws and regulations.

Contaminated Packaging:

This bag may contain residue of a hazardous material. Some authorities may regulate such containers as hazardous waste. Dispose of container according to national or local regulations.

13. TRANSPORT INFORMATION

DOT Shipping Name: Environmentally Hazardous Substance, solid, n.o.s.,9, UN3077, III, RQ(Thiram)

DOT Reportable Quantity (lbs): 10 pounds

ICAO/IATA:Status: Not determined.

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Proper Shipping Name: Not determined.

UN/NA Number: UN3077

IMDG:Status: Environmentally Hazardous Substance, solid, n.o.s., 9, UN3077, III, RQ(Thiram), MARINE POLLUTANT

Proper Shipping Name: Not determined.

TDG (Canada):Status: Not determined.

Proper Shipping Name: Not determined.

14. REGULATORY INFORMATION

TSCA (USA): Listed

Canadian DSL: Listed

Canadian NDSL: Not Applicable. Listed on the DSL.

EINECS/ELINCS (Europe): Listed

Japanese Inventory (ENCS): Listed

Korean Chemical Inventory (ECL): Listed

Australian Chemical Inventories

(AICS):

Listed

New Zealand (NZ): Listed

Phillipines (PICCS) Inventory: Listed

China (CLECS): Listed

US Regulatory Rules

SARA Section 302: Not Applicable / None

SARA 311/312 Hazard Categories: Immediate Delayed

SARA 313 Chemical: Listed as "Thiram"

RCRA Status: RCRA Hazardous Waste U244

SARA Section 302: Not Applicable / None

SARA 311/312 Hazard Categories: Immediate Delayed

SARA 313 Chemical: Listed as "Thiram"

RCRA Status: RCRA Hazardous Waste U244

Other Regulations:

California Proposition 65: NONE

New Jersey Right-to-Know List: Listed

Pennsylvania Right to Know List: Listed

Florida Right to Know: Listed

Minnesota Right to Know: Listed

MA Right to Know Law: Listed

FDA Status 21 CFR: Regulated for Use under the following sections of 21 CFR: 177.2600 Rubber

Articles Intended for Repeated Use in Food Contact. 175.105 Components of Adhesives.

Canadian Regulations

WHMIS Hazard Class: D2A VERY TOXIC MATERIALS D2B TOXIC MATERIALS / Materials Causing

Other Toxic Effects

NPRI: Not Listed. [Canada]