

## Safety Data Sheet

**TMTD**

### SECTION 1: IDENTIFICATION

Chemical Name	Tetramethylthiuram disulfide
Trade Name	TMTD
Recommended use	Accelerator, mainly used in the manufacture of tires and rubber.
Restrictions	Not available
Supplier	<b>SunBoss Chemicals Corp.</b>
Address	<b>8-110 West Beaver Creek Road Richmond Hill, ON L4B 1J9</b>
Telephone	<b>905-707-3433</b>
Fax	<b>905-707-7393</b>

Emergency Information	After normal hours call Chemtrec at 1-800-424-9300
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### SECTION 2: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Target Organs:	Liver, Nerves, Kidney
GHS Classification	ACUTE TOXICITY, ORAL - Category 4 ACUTE TOXICITY, INHALATION - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITISATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE, ORAL - Category 2, (Liver) ACUTE AQUATIC TOXICITY - Category 1 CHRONIC AQUATIC TOXICITY - Category 1

#### GHS Label elements

Pictograms:



Signal word:

Warning

**Hazard Statement(s)**

Harmful if swallowed.  
Harmful if inhaled.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause damage to organs (liver) through prolonged or repeated exposure if swallowed.  
Very toxic to aquatic life with long lasting effects.

**Precautionary Statement(s)****Prevention:**

Avoid breathing dust/fume/ gas/mist/vapors/spray.  
Contaminated work clothing must not be allowed out of the workplace.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF SWALLOWED: Call a POISON centre or doctor/physician if you feel unwell.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF ON SKIN: Wash with plenty of water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
IF skin irritation or rash occurs: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.

**Storage:**

Not applicable.

**Disposal:**

Dispose of contents/container in accordance with local regulations.

**Supplemental Hazard information**

Contains Thiram. May produce an allergic reaction.

**Supplemental label elements for certain mixtures**

Not available

**WHMIS**

D2A VERY TOXIC MATERIAL/Materials Causing Other Toxic Effects  
D2B TOXIC MATERIALS/Materials Causing Other Toxic Effects

**Potential Health Effects****Inhalation**

Toxic if inhaled. Exposure to dust particles generated from this material may cause irritation of the respiratory tract.

**Ingestion**

Harmful if swallowed. May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting and gastrointestinal irritation.

**Skin contact**

Harmful if adsorbed through the skin. Causes skin irritation.

**Eye Contact**

Causes eye irritation. Signs/symptoms can include redness, swelling, pain and tearing.

### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

**Synonyms**

Accelerator TMTD, THIURAD, THIRAM,  
Bis(dimethyldithiocarbamoy) disulfide

Component	CAS Number	EINECS Number	Concentration %
Tetramethylthiuram Disulfide	137-26-8	205-286-2	> 97
Ethoxylated Alcohols [-3mm-grs ONLY]	68439-50-9	500-213-3	≤ 2
White Mineral Oil (powder only)	8042-47-5	232-455-8	1 - 2

### SECTION 4: FIRST AID PROCEDURES

**Most important symptoms and effects, both acute and delayed:**

Asthma attacks  
Allergic reactions  
Gastric or intestinal disorders  
Headache  
Dizziness

**Hazards**

Danger of circulatory collapse.  
Danger of convulsion.  
Danger of disturbed cardiac rhythm.

**In case of inhalation:**

Remove person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway, loosen tight clothing such as collar tie, belt or waistband.

**In case of ingestion:**

Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the victims feels sick as vomiting may be dangerous. Only induce vomiting at the instruction of a physician. If vomiting occurs, the head should be kept low to prevent vomit from entering the lungs. Never give anything by mouth to an unconscious person. Get medical attention if adverse effects persist or are severe.

**In case of skin contact:**

Remove contaminated clothing, wash skin with water, using soap if available. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if irritation persists. Launder clothing and clean shoes thoroughly before reuse.

**In case of eye contact:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation persists.

**Indication of any immediate medical attention and special treatment needed:**

If swallowed – gastric irrigation.  
If necessary give oxygen respiratory treatment.  
In cases of irritation to the lungs, initial treatment with corticosteroid inhalants.  
Treat skin and mucous membranes with antihistamine and corticoid preparations.  
Medical supervision for 48 hours.

## **SECTION 5: FIRE-FIGHTING MEASURES**

Suitable extinguishing media	Water fog, carbon dioxide, foam, dry chemical
Unsuitable extinguishing media	Do not use water jet.
Specific hazards/hazardous combustion products	Toxic emissions may result if product is involved in a fire. The following can be released: carbon oxide, nitrogen oxide, oxides of sulphur.
Special fire-fighting procedures	Fight fire from a safe distance and from a protected location. Flammable dust when in finely divided and highly suspended state. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow run-off to enter waterways.
Special protective equipment	Fire fighters should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in positive pressure mode.

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

Personal precautions	Evacuate the area. Wear protective equipment specified. Avoid the generation of dust. Do not touch or walk through spilt material. Provide adequate ventilation. Keep untrained personnel away from spill.
Environmental precautions	Prevent further leakage or spillage of product. Do not let product enter waterways, drains or soil. Inform environmental authorities if the product has entered the sewer, waterways, soil or air. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
Clean up Methods	Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe. Scoop up and remove solids. For large spill, collect material with a non-combustible, absorbent product such as sand or earth. Do NOT spread spilled product with water.

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

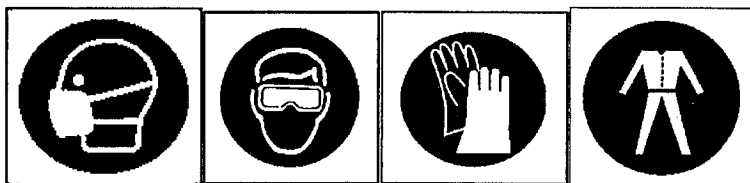
Handling	Wear appropriate protective clothing and gloves. Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Mechanical exhaust required. Close containers of unused product. Wash hands thoroughly before eating, drinking, and chewing gum, using tobacco or using the toilet.
Storage	Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials and food. Avoid exposure to direct sunlight.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS	AGCIH (TLV/8Hr TWA)	OSHA (PEL/8Hr TWA)
Tetramethylthiuram Disulfide	1 mg/m <sup>3</sup> (total dust)	5 mg/m <sup>3</sup> (8H OEL)
White Mineral Oil	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

### Engineering Controls

Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentrations of contaminants below the TLV's. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.



### Respiratory protection

Wear a NIOSH/MSHA approved full face piece airline respirator in the positive pressure mode.

### Eye/face protection

Safety eyewear complying with an approved standard should be used to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Tightly fitted safety goggles.

### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Hand protection

Wear chemical resistant gloves as a standard industrial handling procedure. Recommended material: Nitrile rubber, Polyvinyl chloride, Polychloroprene.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder or granules
Odour	Very slight
pH	6.75 @ 20°C (68°F)
Melting Point	287°F / 142°C min
Boiling point	Not available
Flash Point	280°F / 138°C
Evaporation Rate	Not available
Flammability	This product is not flammable.
Exposure Limits	Not available
Vapour Pressure (20°C)	Not available

Vapour Density (Air = 1)	Not available
Relative Density	1.29 g/cm <sup>3</sup>
Bulk Density	1425 kg/m <sup>3</sup> @ 20°C (68°F)
Solubility in water (at 20°C)	0.017 g/l @ 20°C (68°F)
Other Solubility	Soluble in chloroform, acetone and benzene - slightly soluble in carbon tetrachloride and ethyl alcohol
Partition Coefficient: n-octanol/water	Log Pow = 1.82
Decomposition Temperature	Not available
Viscosity, dynamic (mPa s)	Not available
Thermal Stability Index	Not available
Specific Gravity	143 kg/m <sup>3</sup> @ 20°C (68°F)
Molecular Weight	240.41 g/mol
Molecular Formula	C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> S <sub>4</sub>

## SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical Stability	This material is stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation.
Possible Hazardous Reactions	Not available
Conditions to avoid	Keep away from heat, sparks, flame and exposure to heat and humidity.
Incompatibility	Avoid contact with acidic, basic or oxidizing agents.
Hazardous Polymerization	Will not occur
Hazardous Decomposition Products	Carbon monoxide, Oxides of nitrogen and sulphur.

## SECTION 11: TOXICOLOGICAL INFORMATION

<u>Acute Toxicity</u>	
Acute Oral Toxicity	LD <sub>50</sub> = 1080 mg/kg (Rat)
Acute Dermal Toxicity	LD <sub>50</sub> = >7940 mg/kg (Rabbit)
Acute Inhalation Toxicity	LC <sub>50</sub> = 500 mg/m <sup>3</sup> (Rat)
Principle routes of Exposure	Dermal - skin. Inhalation.

Ingestion	May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting and gastrointestinal irritation.
Skin contact	Causes 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
Eye Contact	Causes eye irritation. Signs/symptoms can include redness, swelling, pain and tearing.
Aggravated Conditions	Alcohol consumption problems. Dermal ailments. Liver, Kidney ailments.
Carcinogenicity	Both negative and positive results have been found in standard tests using bacteria. Negative, positive and equivocal results in have been found in standard in vitro and in vivo tests using animals, animal and bacterial cells. This product or one of its ingredients present at 0.1% or more, is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC or OSHA.
Primary Irritation Effect	Irritant to skin and eyes. Probable skin sensitizer.
Genotoxicity	Both positive and negative effects have been reported in standard tests using animals and animal cells.
Reproductive/Developmental Toxicity	Animal studies have shown some adverse effects - low birth weight of pups, maternal toxicity - on female animals. Chronic animal studies have shown this material to cause reproductive effects, blood effects and organ weight changes. Some animal studies have shown adverse effects on fetal development.

## SECTION 12: ECOLOGICAL INFORMATION

### TOXICITY

Acute Toxicity		Time	Species	Method
LC50	0.13 mg/l	96Hr	Rainbow Trout	OECD 203
LC50	0.13 mg/l	96Hr	Bluegill Sunfish	OECD 203
LC50	0.27 mg/l	96Hr	Guppy	OECD 203
EC50	0.38 mg/l	48Hr	Daphnia	OECD 202
EC50	0.065 mg/l	72Hr	Pseudokirchnerellasubcapitata	OECD 201

Bioaccumulation	Tests indicate this material will not bio-accumulate or persist in the environment.
Persistence and Degradability	Hydrolysis Half-life: 9.5 hrs @ pH 3.5 108 hrs @ pH 5.7 1123 hrs @ pH 7.0 3316 hrs @ pH 8.0
Mobility in Soil	Not available

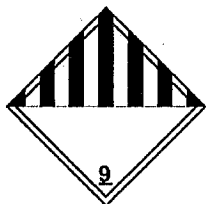
**SECTION 13: DISPOSAL CONSIDERATIONS**

## Waste Disposal

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.

**SECTION 14: TRANSPORT INFORMATION**DOT

UN/IN No.

3077

Proper Shipping Name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Thiram)

Hazard Class

9

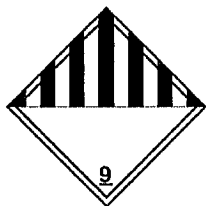
Packing Group

III

Reportable Quantity (RQ)

10 lbs

Note: The (RQ) for this product is 10 lbs. Any package containing 10 lbs or more, must be labelled, marked and shipped as hazardous material. Single packages under 10 lbs are considered non-hazardous for transport.

IATA

UN/IN No.

3077

Proper Shipping Name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Thiram)

Hazard Class

9

Packing Group

III

Special Markings

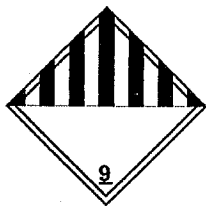
Symbol (fish and tree)

Note:

EFFECTIVE 01/01/2009: Subject to ICAO/IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE marking requirement [IATA 7.1.6.3]Passengers: Packaging instruction 911 (No restricted quantity bypackage), Cargo: Packaging instruction 911 (No restricted quantity bypackage)

IMDG





UN/IN No.	3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Thiram)
Hazard Class	9
Packing Group	III
Marine Pollutant	Yes
Special Markings:	Symbol (fish and tree)
<u>TDG (Canada)</u>	See DOT

## SECTION 15:REGULATORY INFORMATION

USA - TSCA	This substance is listed in the inventory
Canada - DSL	This substance is listed in the inventory
EINECS/ELINCS	This substance is listed in the inventory
Australia - AICS	This substance is listed in the inventory
Korea - ECL	This substance is listed in the inventory
Japan - ENCS	This substance is listed in the inventory
China - IECSC	This substance is listed in the inventory
Philippines - PICCS	This substance is listed in the inventory

### US Regulations

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(40 CFR 302)
CERCLA RQ	Reportable Quantity is 10 lbs

### Other regulations:

**California Proposition 65:** None of the components are listed.

**New Jersey Right-to-know List:**None of the components are listed.

**Pennsylvania Right-to-Know List:** None of the components are listed.

**Minnesota Right-to-Know List:** Listed under the category "Thiram"

**Massachusetts Right-to-Know Law:** Listed under the category "Thiram"

### FDA Status 21 CFR:

Regulated for use under the following sections of 21CFR:

175.105 - Components of adhesives.

177.2600: Rubber articles intended for repeated use in food contact.

## Canadian Regulations

### WHMIS Hazard Class



D2A VERY TOXIC MATERIALS/Materials Causing Immediate and Serious Toxic Effect.

D2B TOXIC MATERIALS/Materials Causing Other Toxic Effects

NPRI

Not Listed [Canada]

### NFPA Rating (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

### HMIS Classification(Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

## SECTION 16: OTHER INFORMATION

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. SunBoss Chemicals Corp. extends no warranty and assumes no responsibility for the accuracy or sufficiency of the content and expressly disclaims all liability for reliance thereon. This material safety data sheet provides guidelines for the safe handling of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. It is the responsibility of the user to comply with all Federal, State and local laws and regulations. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

### Abbreviations and Acronyms

ACGIH: American Conference of Governmental Industrial Hygienists Inc.  
CAS: Chemical Abstracts Service (Division of American Chemical Society)  
DOT: Department of Transportation (USA)  
EINECS: European Inventory of Existing Commercial Chemical Substances  
HMIS: Hazardous Materials Identification System (USA)  
IARC: Internal Agency for Research on Cancer  
IATA: International Air Transport Association  
IMDG: International Marine Code for Dangerous Goods  
LD50: Lethal Dose Medium  
LC50: Lethal Concentration Medium  
EC50: Effective Concentration Medium  
NIOSH: National Institute for Occupational Safety and Health  
NFPA: National Fire Protection Association (USA)  
NPRI: National Pollutant Release Inventory (Canada)  
NTP: National Toxicology Program  
OSHA: Occupational Safety and Health Administration (USA)  
TDG: Transportation of Dangerous Goods (Canada)  
TLV: Threshold Limit Value

TWA: Time Weighted Average

WHMIS: Workplace Hazardous Materials Information Systems (Canada)

## SECTION 17:REVISION DATE

Revision number: 8

Date of Issue: September 22, 2015

Changes: Reformatted and updated according to the Global Harmonized System (GHS)