



MATERIAL SAFETY DATA SHEET

THIRAM GRANUFLO[®]

Version: 1.1
Date of Issue: 10/30/2008
Date printed: 10/30/2008

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : THIRAM GRANUFLO[®] EPA Reg. No. 45728-21-400

Chemical name: Thiram; TMTD; tetramethylthiuram disulfide (Active)

Use of substance/preparation: Fungicide

Supplier: Chemtura Corporation
199 Benson Road
Middlebury, CT 06749 USA

Emergency telephone number: CHEMTREC (24 hours) 800-424-9300, 703-527-3887
Chemtura Corporation Emergency Response (24 hours) 800-292-5898

Environmental, Health and Safety Department: 866-430-2775

Prepared by Product Safety Department Date of Issue: 10/30/2008
(US) +1 866-430-2775
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Email: MSDSRequest@chemtura.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION!

MAY BE IRRITATING TO RESPIRATORY SYSTEM, SKIN AND EYES.

MAY CAUSE SKIN SENSITIZATION.

MAY BE HARMFUL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.

CONSUMPTION OF ALCOHOLIC BEVERAGES INCREASES THE TOXIC EFFECTS OF THIS CHEMICAL (THIRAM).

AVOID DISPERSION OF DUST IN AIR TO REDUCE POTENTIAL FOR DUST IGNITION/EXPLOSIONS.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT	% BY WEIGHT
Tetramethylthiuram disulfide CAS# 137-26-8	75
Inerts CAS# -	25

Ingredients not precisely identified are non-hazardous and/or proprietary.



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4. FIRST AID MEASURES

Swallowing

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Inhalation

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Skin contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact

Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lens, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

5. FIRE-FIGHTING MEASURES

Autoignition temperature:

Not available

NFPA CLASSIFICATION

Health: 2	Flammability: 1	Reactivity: 0	Special provisions:
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Hazardous combustion products

Thermal decomposition may produce:

Carbon disulfide
Oxides of carbon.
Oxides of nitrogen.
Oxides of sulfur.

Special fire fighting procedures

Do not discharge extinguishing waters into streams, rivers and lakes.

Special protective equipment for firefighters

Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus.

Extinguishing media

Suitable:

- Large fires:**
 - alcohol-type foam or universal-type foams
- Small fires:**
 - CO₂
 - dry chemical
 - water spray

Unsuitable:

- water jets

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective equipment., Avoid contact with eyes and skin.

Environmental precautions

Prevent from entering sewer system, surface water or soil.

Methods for cleaning up



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Sweep up and collect in a suitable container for disposal.
Avoid dust formation.
Observe government regulations.

7. HANDLING AND STORAGE

HANDLING

Handling precautions

Do not get in eyes, on skin, on clothing., Do not swallow., Avoid dispersion of dust to reduce fire and explosion potential., Do not eat, drink or smoke when handling.

Other precautions

NOTE TO END-USERS: The employee protection recommendations on this MSDS may differ from those on the product label. For normal use of this product, always refer to the personal protective equipment requirements on the product label.

STORAGE

Storage requirements

Store in a cool, dry place., Keep container closed., Store in original containers away from incompatible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Component	Country	Type	Value	Remark
Tetramethylthiuram disulfide	USA	TLV-TWA	1 ml/m3	

PERSONAL PROTECTION

Respiratory protection

In the absence of engineering controls sufficient to maintain airborne concentrations below recommended occupational exposure limit values, appropriate respiratory protection should be utilized., The determination of appropriate respiratory protection is best performed, on a case by case basis, taking into consideration the exposure conditions of the particular operation., Use an approved full-face air-purifying respirator. For emergency and other conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus., The respirator manufacturer should be consulted to ensure that the air-purifying cartridges utilized will provide adequate protection for the exposure conditions and period of wear concerned.

Hand protection / protective gloves

Chemical resistant protective gloves

Eye protection

Wear suitable eye protection., Safety glasses with side shields., Face shield or chemical splash goggles in case of splashing.

Skin protection

Wear protective clothing, such as long sleeves to minimize skin contact.

ENGINEERING CONTROLS

Ventilation

Apply local exhaust ventilation at points of dust generation.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Physical state	Granular solid
Color	Light brown
Odor	Caramel-like

OTHER PROPERTIES

Boiling point	Not available
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Melting point Not available
Specific gravity (H₂O=1) 0.6
Density
Solubility in water Dispersible
Flash point Not available
Autoignition temperature Not available

10. STABILITY AND REACTIVITY

Stability: This product is stable under normal storage and handling conditions.

Stability - Conditions to avoid:
High temperatures.

Incompatible materials:

Acids.
Oxidizing agents.
Copper

Hazardous combustion products:

Thermal decomposition may produce:
Carbon disulfide
Oxides of carbon.
Oxides of nitrogen.
Oxides of sulfur.

Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

GENERAL

The following information is applicable to a component of this material:

Component data Tetramethylthiuram disulfide Acute toxicity - Swallowing:	LD50 - Rat Result: 2.4 g/kg
Component data Tetramethylthiuram disulfide Acute toxicity - Skin absorption:	LD50 - Rabbit Result: > 2.0 g/kg
Component data Tetramethylthiuram disulfide Acute toxicity - Inhalation:	LC50 - Rat Result: 4.42 mg/l Exposure time: 4 h
Component data Tetramethylthiuram disulfide Skin irritation - Skin contact:	Species: Rabbit Result: Slight
Component data Tetramethylthiuram disulfide Eye irritation - Eye contact:	Species: Rabbit Result: Moderate irritation
Component data	Species: Guinea pigs



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Tetramethylthiuram disulfide Sensitization:	Result: Positive
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12. ECOLOGICAL INFORMATION

The following information is applicable to a component of this material:

Component ecotoxicology Tetramethylthiuram disulfide Acute toxicity fish:	LC50 - Rainbow trout (Oncorhynchus mykiss) Result: 0.128 mg/l Exposure time: 96 h
Component ecotoxicology Tetramethylthiuram disulfide Acute toxicity fish:	LC50 - Bluegill (Lepomis macrochirus) Result: 0.0445 mg/l Exposure time: 96 h
Component ecotoxicology Tetramethylthiuram disulfide Acute toxicity to aquatic invertebrates:	LC50 - Water flea (Daphnia magna) Result: 0.21 ppm Exposure time: 48 h

13. DISPOSAL CONSIDERATIONS

General: Do not discharge to sewers and natural waters., Incinerate in a furnace where permitted under appropriate Federal, State, and local regulations.

14. TRANSPORT INFORMATION

DOT Classification

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram)
Class: 9
UN ID #: UN3077
Packing group: III
RQ: yes

Not regulated by ground or rail if shipped or transported in container less than 13 lbs (5.9 kg).

Technical description Thiram

IMDG Classification

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Class: 9
Subsidiary risk: marine pollutant
UN ID #: UN 3077
Packing group: III
Technical description (Thiram)

ICAO/IATA Classification

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class: 9
UN ID #: UN 3077
Packing group: III



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Technical description (Thiram)

Only regulated by air Into, Out of or Within the United States in containers 13 lbs (5.9 kg) or greater.

15. REGULATORY INFORMATION

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of hazardous substances equal to or greater than the reportable quantities (RQ's) in 40CFR302.4.

Components present in this product at a level which could require reporting under the statute are:

Chemical name	RQ 10 pounds	CAS#	Max weight %
Tetramethylthiuram disulfide		137-26-8	75.00

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40CFR372 (for SARA 313). This information must be included in MSDS's that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

Chemical name	CAS#	Max weight %
Tetramethylthiuram disulfide	137-26-8	75.00

EPA Hazard Categories (SARA 311, 312): Immediate Health Hazard, Delayed Health Hazard

CHEMICAL INVENTORY

United States: This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from TSCA Inventory listing requirements.

16. OTHER INFORMATION

RECOMMENDED USES AND RESTRICTIONS: NOTE TO END-USERS: This MSDS is being provided to all interested persons in accordance with federal and state right-to-know laws. Precautionary Statements, First Aid Statements and Directions for Use of this product by end-users are contained on the product label and must be followed at all times.

HMIS RATING

Health: 2	Flammability: 1	Reactivity: 0	PPI:
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STP	Standard temperature and pressure
W/W	Weight/Weight 0 (HMIS)
1 (HMIS)	Slight hazard
2 (HMIS)	Moderate hazard
3 (HMIS)	Serious hazard
4 (HMIS)	Severe hazard
X (HMIS)	Personal protection rating to be supplied by user depending on use conditions

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® is a
registered
trademark
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Belgian corporation.

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