



Safety Data Sheet

Preparation Date no data available

Revision date 07-15-2015

Revision number 1.02

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product name Thiram Granuflo

Other means of identification

Product code 51031C

UN-No UN3077

Synonyms Defiant Turf Fungicide & Animal Repellent

Registration number(s) EPA Registration number: 45728-21

Recommended use of the chemical and restrictions on use

Recommended use Fungicide.

Uses advised against Use only for identified uses.

Details of the Supplier of the Safety Data Sheet

Supplier Address

Taminco US Inc.
A subsidiary of Eastman Chemical Company
Two Windsor Plaza, Suite 411
7540 Windsor Drive
Allentown, PA USA 18195
T: +(800) 223-3258

Emergency telephone number

Emergency Telephone

In case of emergency call CHEMTREC 1-800-424-9300
for International calls 1-703-527-3887

2. Hazards Identification

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

OSHA Defined Hazard

If converted to small particles during further processing, handling or by other means may form combustible dust concentrations in air.

Label Elements

Symbols/Pictograms

**Signal Word****WARNING****hazard statements**

Harmful if swallowed

Harmful if inhaled

Causes serious eye irritation

Causes skin irritation

May cause an allergic skin reaction

May cause damage to organs through prolonged or repeated exposure

If converted to small particles during further processing, handling or by other means may form combustible dust concentrations in air.

May form combustible dust concentrations in air

Precautionary Statement - Prevention

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wash face, hands and any exposed skin thoroughly after handling

Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of soap and water

If skin irritation or rash occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local regulation

Hazards Not Otherwise Classified (HNOC)

Not Applicable

3. Composition/information on Ingredients

Synonyms

Defiant Turf Fungicide & Animal Repellant.

Chemical name	CAS-No	Weight %	Trade secret
Thiram	137-26-8	75	No

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First aid measures

First Aid Measures

General advice	If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance. Use of alcoholic beverages may enhance toxic effects. In case of allergic reaction after exposure, any future exposure must be avoided.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Call a physician immediately.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician or Poison Control Centre immediately.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Treat symptomatically. If swallowed, seek medical advice immediately and show this container or label. Loosen tight clothing such as collar, tie, belt and waistband.
Protection of First-aiders	Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed

May cause sensitization by skin contact. Symptoms may be delayed. Use of alcoholic beverages may enhance toxic effects.

Indication of Any Immediate Medical Attention and Special Treatment Needed

General advice for dithiocarbamates. Biomonitoring possible at chronic exposure: determination of TTCA in the urine at the end of the workday/week. Bloodtesting for delayed effects: liver tests, kidney function, thyroid function.

5. Fire-fighting measures**Suitable extinguishing media**

Carbon dioxide (CO₂). Water spray. Dry chemical. Alcohol-resistant foam.

Unsuitable extinguishing media

High volume water jet.

Specific hazards arising from the chemical

Heating can release hazardous gases. Danger of dust explosions.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NO_x). Carbon disulfide. Sulphur oxides.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear suitable protective equipment.

Environmental Precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Use explosion-proof equipment.

Sweep up and shovel into suitable containers for disposal. Prevent fire extinguishing water from contaminating surface water or the ground water system.

7. Handling and Storage

Precautions for Safe Handling

Do not breathe dust. Use only in well-ventilated areas. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Protect containers from physical damage. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Keep away from heat and sources of ignition. Keep away from food, drink and animal feedingstuffs. Do not use on, in or around the home.

incompatible materials Strong acids and oxidizing agents. copper.

8. Exposure Controls/Personal Protection

Control Parameters

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Thiram 137-26-8	TWA: 0.05 mg/m ³ Inhalable fraction and vapor.	5 mg/m ³ TWA	100 mg/m ³

IDLH: Immediately Dangerous to Life or Health

Appropriate Engineering Controls

Local exhaust. Avoid dust formation.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Tightly fitting safety goggles. Face-shield.
Skin and Body Protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	If irritation is experienced, NIOSH approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
General hygiene considerations	When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	solid	Odor	Characteristic
appearance	No information available		
color	white to light brown		
Property	VALUES	Remarks • Method	
pH	8.9 (4% solution)		
Melting point/freezing point	No information available		
Boiling Point/Range			

flash point	No information available
evaporation rate	Not applicable
flammability (solid, gas)	not auto-flammable
Flammability limit in air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapour Pressure Value	Not applicable
vapor density	
Specific gravity	No information available
Water solubility	No information available
Solubility in Other Solvents	No information available
Partition coefficient	Log Pow : 1.84
Autoignition temperature	235 °C
decomposition temperature	No information available
Kinematic viscosity	No information available Not Applicable
Dynamic viscosity	No information available
Explosive properties	Dust can form an explosive mixture with air
Oxidizing properties	None

OTHER INFORMATION

molecular weight	No information available
VOC Content	No information available
density	0.60 g/cm3

10. Stability and Reactivity

Reactivity

See Incompatible Materials

Chemical stability

Stable.

Possibility of Hazardous Reactions

See Incompatible Materials.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.

incompatible materials

Strong acids and oxidizing agents. copper.

Hazardous decomposition products

Nitrogen oxides (NOx). Carbon oxides. sulphur oxides. hydrogen sulphide. Carbon disulfide.

11. Toxicological Information

Inhalation	Harmful by inhalation.
Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation. May cause allergic skin reaction.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may be delayed

Product information

LD50/oral/rat =	1407 mg/kg
LD50/dermal/rat =	> 2000 mg/kg
Inhalation	It was demonstrated that during intended and foreseen applications, no respirable aerosol is formed
Eye irritation	Irritating to eyes
Skin irritation	Non-irritating to the skin
sensitization	May cause sensitization by skin contact
Mutagenic effects	Did not show mutagenic effects in animal experiments
Reproductive Toxicity	Did not show teratogenic effects in animal experiments
Carcinogenic effects	Did not show carcinogenic effects in animal experiments
Specific target organ systemic toxicity (single exposure)	No information available
Specific target organ systemic toxicity (repeated exposure)	No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA
Thiram 137-26-8 (75)	Not Listed	Group 3	Not Listed	Not Listed

Target organ effects kidney, liver, Thyroid.

12. Ecological Information

Marine pollutant yes.

EcotoxicityProduct information

Toxicity to Fish	LC50 : 0.046 - 1.20 mg/l
LC50/48h/daphnia =	> 0.2 mg/l
EC50/120h/algae =	> 0.14 mg/l
Toxicity to bacteria	IC50 : 3.11 mg/l (3 h)

Persistence/Degradability

NOT READILY BIODEGRADABLE.

Bioaccumulative potentialMobility in Soil

Koc = 2245-24526

Other Adverse Effects

None known based on information supplied

13. Disposal Considerations

Waste Treatment Methods**Waste Disposal Method**

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

Contaminated packaging

Container Handling: Do not reuse or refill this container. Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Thiram 137-26-8	waste number U244	-	-	-

14. Transport Information

DOT

Shipping Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Thiram), 9, PG III, RQ, MP
UN-No UN3077
Hazard class 9
Packing group PGIII
Marine pollutant yes.

IATA

UN-No UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s (thiram)
Hazard class 9
Packing group III
Marine pollutant yes

IMDG/IMO

UN-No UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s (thiram)
Hazard class 9
Packing group III
Marine pollutant yes

15. Regulatory Information

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
PICCS Complies
AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations**SARA TITLE III SECTION 313 INFORMATION:**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazardous**Categorization**

Acute health hazard	No
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	RQ	CERCLA/SARA RQ	RQ
Thiram 137-26-8	10 lbs	-	RQ= 10lb final RQ RQ= 4.54kg final RQ

State Regulations**California Proposition 65**

No Data Available

State Right-to-Know

Chemical name	NJ	Ma	Pa
Thiram 137-26-8	X	X	X

U.S. EPA Label information

EPA Pesticide registration number 45728-21***

EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Difference between SDS and EPA pesticide label

Consumption of alcoholic beverages increases the toxic effect of Thiram.

EPA Pesticide label

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish, aquatic invertebrates, oysters and shrimps. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge.

WHMIS Hazard Class

D2B Toxic materials

CANADA

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

16. Other Information

NFPA	HEALTH 2	FIRE 1	Instability 0	Physical hazard -
HMIS	HEALTH 2	flammability 1	Physical hazards 0	

Revision date

07-15-2015

Revision Summary

Not Available

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet