



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

**Version:** 1.5  
**Date of Issue:** 10/02/2007  
**Date printed:** 10/03/2007

---

### 1. PRODUCT AND COMPANY IDENTIFICATION

---

**Product name :** PROTECTOR-L-ALLEGIANCE®

**Chemical name:** Thiram - Metalaxyl

**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: 10/02/2007  
(US) +1 866-430-2775  
(EU) +44 (0) 1753.603.000  
Email: MSDSRequest@chemtura.com

---

### 2. HAZARDS IDENTIFICATION

---

#### EMERGENCY OVERVIEW

#### CAUTION!

MAY BE HARMFUL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.  
CAUSES EYE AND SKIN IRRITATION.  
EXPOSURE CAN RESULT IN AN ADVERSE REACTION WITH THE CONSUMPTION OF ALCOHOLIC BEVERAGES.  
CONSUMPTION OF ALCOHOL SHOULD BE AVOIDED BEFORE AND AFTER EXPOSURE.

---

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

---

| INGREDIENT                            | % BY WEIGHT |
|---------------------------------------|-------------|
| Thiram<br>CAS# 137-26-8               | 14.29       |
| Metalaxyl<br>CAS# 57837-19-1          | 1.61        |
| Molybdate, disodium<br>CAS# 7631-95-0 | 12.1        |



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

**Version:** 1.5  
**Date of Issue:** 10/02/2007  
**Date printed:** 10/03/2007

### 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.

#### Notes to physician

##### ROUTES OF ENTRY:

Inhalation

Skin

Eyes

Ingestion

Treat symptomatically.

If THIRAM is absorbed into the body it may affect the liver, kidneys, and central nervous system. Symptoms may include headache, insomnia, and nervous disorders. In severe cases symptoms may include kidney pain, dizziness, loss of memory and tremors. Alcohol intolerance may result on exposure; symptoms include flushing of the face and neck, followed by rapid heart beat, nausea, vomiting, headache and low blood pressure.

### 5. FIRE-FIGHTING MEASURES

**Flash point:** > 201 °F > 94 °C

#### NFPA CLASSIFICATION

|                  |                        |                      |                            |
|------------------|------------------------|----------------------|----------------------------|
| <b>Health: 1</b> | <b>Flammability: 0</b> | <b>Reactivity: 0</b> | <b>Special provisions:</b> |
|------------------|------------------------|----------------------|----------------------------|

#### Hazardous combustion products

Irritating fumes.  
Oxides of carbon.  
Oxides of sulfur.  
Oxides of nitrogen.

#### 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

#### Unusual fire and explosion hazards

Following products may be produced during a fire: Irritating fumes., Oxides of carbon., Oxides of sulfur., Oxides of nitrogen.

### 6. ACCIDENTAL RELEASE MEASURES



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

**Version:** 1.5  
**Date of Issue:** 10/02/2007  
**Date printed:** 10/03/2007

### 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

Observe government regulations.

**Small spills:** Absorb on inert material such as sand, earth, vermiculite.  
Collect for disposal.

**Large spills** Dike to contain spill.  
Pump excess material into suitable container (metal drums, metal tank, or such).

---

## 7. HANDLING AND STORAGE

---

### HANDLING

#### Handling precautions

Do not eat, drink or smoke when handling., Avoid contact with eyes, skin and clothing., Avoid breathing vapor, aerosol and mist., Use with adequate ventilation., Wash thoroughly after 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.

#### Further information on storage

Do not store near food, feed or fertilizers., Keep at temperatures below 49 °C (120 °F).

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

---

### EXPOSURE LIMIT VALUES

| <u>Component</u> | <u>Country</u> | <u>Type</u>               | <u>Value</u> | <u>Remark</u>                        |
|------------------|----------------|---------------------------|--------------|--------------------------------------|
| Thiram           | USA            | TLV-TWA, ACGIH            | 1 mg/m3      |                                      |
| Thiram           | USA            | PEL-TWA, OSHA             | 5.0 mg/m3    |                                      |
| Molybdenum       |                | <u>Type</u><br>TWA, ACGIH | 3.0 mg/m3    | <u>Remark</u><br>Respirable fraction |
|                  |                | PEL-TWA, OSHA             | 10.0 ml/m3   | Total dust                           |
|                  |                | TWA, ACGIH                | 10.0 mg/m3   | inhalable fraction                   |

### PERSONAL PROTECTION

#### Respiratory protection



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

**Version:** 1.5  
**Date of Issue:** 10/02/2007  
**Date printed:** 10/03/2007

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.

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.

For emergency conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus.

### Hand protection / protective gloves

Chemical resistant protective gloves

### Eye protection

Safety glasses with side shields.

### Skin protection

Chemical protective clothing.

### Other protective equipment

Eye bath, Safety shower

### Industrial hygiene measures

Before eating, drinking or smoking, wash hands and face thoroughly with soap and water.

### ENGINEERING CONTROLS

#### Ventilation

General (mechanical) room ventilation is expected to be satisfactory. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### APPEARANCE

|                |        |
|----------------|--------|
| Physical state | Liquid |
| Color          | Red    |
| Odor           | Sulfur |

### OTHER PROPERTIES

|                                       |                                  |
|---------------------------------------|----------------------------------|
| Melting point                         | -12 °C<br>10 °F<br>Melting point |
| pH                                    | 7 - 8                            |
| Specific gravity (H <sub>2</sub> O=1) | 1.10                             |
| Vapor pressure                        |                                  |
| Solubility in water                   | Dispersible                      |
| Flash point                           | > 201 °F<br>> 94 °C              |

---

## 10. STABILITY AND REACTIVITY

---

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

### Incompatible materials:

Oxidizing agents.



PROTECTOR-L-ALLEGIANCE®

Version: 1.5
Date of Issue: 10/02/2007
Date printed: 10/03/2007

Strong acids.
Strong bases.

Hazardous combustion products:

Irritating fumes.
Oxides of carbon.
Oxides of sulfur.
Oxides of nitrogen.

Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

INHALATION

Test results
Acute toxicity: LC50
Result: 9.36 mg/l
Exposure time: 4 h

SKIN CONTACT

Test results
Skin irritation: Result: Non irritating.

EYE CONTACT

Test results
Eye irritation: Result: Minimal irritation

12. ECOLOGICAL INFORMATION

Toxic to aquatic organisms.

Table with 2 columns: Component ecotoxicology and Test results. Rows include Thiram (Rainbow trout), Thiram (Bluegill), Metalaxyl (Rainbow trout), Metalaxyl (Green algae), Thiram (Water flea), and Metalaxyl (EC50).



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

Version: 1.5  
 Date of Issue: 10/02/2007  
 Date printed: 10/03/2007

|  |                     |
|--|---------------------|
| Acute toxicity to aquatic invertebrates: | Exposure time: 48 h |
|--|---------------------|

### 13. DISPOSAL CONSIDERATIONS

**General:** Dispose of in accordance with appropriate Federal, State, and local regulations., Do not discharge to sewers and natural waters.

**US waste**  
 In accordance with EPA/RCRA regulations 40 CFR261.33 (f) U244

### 14. TRANSPORT INFORMATION

#### DOT Classification

**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Thiram)  
**Class:** 9  
**UN ID #:** UN3082  
**Packing group:** III  
**marine pollutant:** MARINE POLLUTANT

Not regulated by ground or rail if shipped or transported in containers less than 69 lbs (31.3 kg).

#### IMDG Classification

**Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s.  
**Class:** 9  
**UN ID #:** UN 3082  
**Packing group:** III  
**Technical description** (Thiram)

#### ICAO Classification

**Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s.  
**Class:** 9  
**UN ID #:** UN 3082  
**Packing group:** III  
**Technical description** (Thiram)

marine pollutant  
 Only regulated by air Into, Out of or Within the United States in containers 69 lbs (31.3 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 | CAS#     | Max weight % |
|---------------|----------|--------------|
| Thiram        | 137-26-8 | 15.00        |

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 % |
|---------------|----------|--------------|
| Thiram        | 137-26-8 | 15.00        |



# MATERIAL SAFETY DATA SHEET

## PROTECTOR-L-ALLEGIANCE®

**Version:** 1.5  
**Date of Issue:** 10/02/2007  
**Date printed:** 10/03/2007

**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

|                  |                        |                      |               |
|------------------|------------------------|----------------------|---------------|
| <b>Health: 1</b> | <b>Flammability: 0</b> | <b>Reactivity: 0</b> | <b>PPI: G</b> |
|------------------|------------------------|----------------------|---------------|

|          |   |
|----------|---|
| STP      | Standard temperature and pressure   |
| W/W      | Weight/Weight<br>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 |

Copyright  
2007  
Chemtura  
Corporation

THE OPINIONS EXPRESSED HEREIN ARE THOSE OF QUALIFIED EXPERTS WITHIN CHEMTURA CORPORATION. WE BELIEVE THAT THE INFORMATION CONTAINED HEREIN IS CURRENT AS OF THE DATE OF THIS SAFETY DATA SHEET. SINCE THE USE OF THIS INFORMATION AND OF THESE OPINIONS AND THE CONDITIONS OF USE OF THIS PRODUCT ARE NOT WITHIN THE CONTROL OF CHEMTURA CORPORATION, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCTS.