



# MATERIAL SAFETY DATA SHEET

## STILETTO (TM)

**Version:** 1.6  
**Date of Issue:** 06/17/2008  
**Date printed:** 06/17/2008

### 1. Product and Company identification

**Product name :** STILETTO (TM)

**Chemical name:** Carboxin - Thiram - Metalaxyl (Active Ingredients)

**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  
For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

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

**Prepared by** Product Safety Department      Date of Issue: 06/17/2008  
(US) +1 866-430-2775  
(EU) +44 (0) 1753.603.000  
Email: MSDSRequest@chemtura.com

### 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

#### CAUTION!

HARMFUL IF SWALLOWED.

HARMFUL IF ABSORBED THROUGH SKIN.

CAUSES EYE IRRITATION.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT	% BY WEIGHT
Thiram CAS# 137-26-8	10
Carboxin CAS# 5234-68-4	10
Metalaxyl CAS# 57837-19-1	1.62
Ethylene glycol CAS# 107-21-1	10 - 20



## STILETTO (TM)

**Version:** 1.6  
**Date of Issue:** 06/17/2008  
**Date printed:** 06/17/2008

Magnesium aluminium silicate  
CAS# 12174-11-7

0.9 - 1.1

---

### 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:** 199 °F 93.3 °C

#### **NEPA 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.

#### **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



STILETTO (TM)

Version: 1.6  
Date of Issue: 06/17/2008  
Date printed: 06/17/2008

**Unusual fire and explosion hazards**

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

---

**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**

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 between -17°C (0°F) and 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	
Ethylene glycol	USA	Ceiling, ACGIH	100 mg/m3	(aerosol)

**PERSONAL PROTECTION**



STILETTO (TM)

Version: 1.6  
Date of Issue: 06/17/2008  
Date printed: 06/17/2008

**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.

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	Alcoholic

**OTHER PROPERTIES**

Melting point	-18 °C 0 °F Melting point
pH	7.0 - 8.5
Specific gravity (H2O=1)	1.06
Density	8.8 Lbs/Gallon
Vapor pressure	Nil
Solubility in water	Miscible
Flash point	199 °F 93.3 °C

---

10. STABILITY AND REACTIVITY

---



STILETTO (TM)

Version: 1.6  
Date of Issue: 06/17/2008  
Date printed: 06/17/2008

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

**Stability - Conditions to avoid:**  
Oxidizing agents.  
Strong acids.  
Strong bases.

**Hazardous combustion products:**  
Irritating fumes.  
Oxides of carbon.  
Oxides of sulfur.

---

11. TOXICOLOGICAL INFORMATION

---

SWALLOWING

Test results

Acute toxicity: LD50  
Result: > 5,050 mg/kg

SKIN ABSORPTION

Test results

Acute toxicity: LD50  
Result: > 5,050 mg/kg

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.

<u>Component ecotoxicology</u> Thiram <u>Acute toxicity fish:</u>	LC50 - Rainbow trout (Oncorhynchus mykiss) Result: 0.046 mg/l Exposure time: 96 h
---	---

<u>Component ecotoxicology</u> Carboxin <u>Acute toxicity fish:</u>	LC50 - Rainbow trout (Oncorhynchus mykiss) Result: 2.3 mg/l Exposure time: 96 h
---	---

<u>Component ecotoxicology</u> Carboxin	LC50 - Bluegill (Lepomis macrochirus) Result: 3.6 mg/l
--	---



STILETTO (TM)

Version: 1.6  
Date of Issue: 06/17/2008  
Date printed: 06/17/2008

<u>Acute toxicity fish:</u>	Exposure time: 96 h
<u>Component ecotoxicology</u> Metalaxyl <u>Acute toxicity fish:</u>	LC50 - Rainbow trout (Oncorhynchus mykiss) Result: > 100 mg/l Exposure time: 96 h
<u>Component ecotoxicology</u> Ethylene glycol <u>Chronic toxicity fish:</u>	EC50 - Rainbow trout (Oncorhynchus mykiss) Result: 41,000 mg/l Exposure time: 4 d
<u>Component ecotoxicology</u> Ethylene glycol <u>Chronic toxicity fish:</u>	Static LC50 - Rainbow trout (Oncorhynchus mykiss) Result: 40,761 mg/l Exposure time: 4 d
<u>Component ecotoxicology</u> Carboxin <u>Aquatic toxicity to plants:</u>	EC50 - Selenastrum capricornutum Result: 0.48 mg/l Exposure time: 120 h
<u>Component ecotoxicology</u> Metalaxyl <u>Aquatic toxicity to plants:</u>	IC50 - Green algae (Scenedesmus subspicatus) Result: 33 mg/l Exposure time: 5 d
<u>Component ecotoxicology</u> Ethylene glycol <u>Microorganisms:</u>	EC50 - Selenastrum capricornutum Result: 1,300 - 6,500 mg/l Exposure time: 96 h
<u>Component ecotoxicology</u> Ethylene glycol <u>Microorganisms:</u>	EC50 - Photobacterium phosphoreum: Result: 620 mg/l Exposure time: 0.5 h
<u>Component ecotoxicology</u> Thiram <u>Acute toxicity to aquatic invertebrates:</u>	EC50 - Water flea (Daphnia magna) Result: 0.011 mg/l Exposure time: 48 h
<u>Component ecotoxicology</u> Carboxin <u>Acute toxicity to aquatic invertebrates:</u>	EC50 - Water flea (Daphnia magna) Result: > 57 mg/l Exposure time: 48 h
<u>Component ecotoxicology</u> Metalaxyl <u>Acute toxicity to aquatic invertebrates:</u>	EC50 - Result: > 28 mg/l 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**



# MATERIAL SAFETY DATA SHEET

## STILETTO (TM)

Version: 1.6  
Date of Issue: 06/17/2008  
Date printed: 06/17/2008

### DOT Classification

**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carboxin / 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 450 liters.

### IMDG Classification

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

### ICAO/IATA Classification

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

Only regulated by air Into, Out of or Within the United States in containers 881.8 lbs (400 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	10.00
Carboxin	5234-68-4	10.00

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	10.00
Carboxin	5234-68-4	10.00
Ethylene glycol	107-21-1	10.00 - 20.00

Massachusetts Right-To-Know Substance List (MSL)--Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

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	10.00
Carboxin	5234-68-4	10.00
Ethylene glycol	107-21-1	10.00 - 20.00

Pennsylvania Right-To-Know Hazardous Substance List--Hazardous Substances and Special Hazardous Substances on the list must be identified when present in products.

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	10.00
Carboxin	5234-68-4	10.00
Ethylene glycol	107-21-1	10.00 - 20.00



# MATERIAL SAFETY DATA SHEET

## STILETTO (TM)

**Version:** 1.6  
**Date of Issue:** 06/17/2008  
**Date printed:** 06/17/2008

Thiram	137-26-8	10.00
Carboxin	5234-68-4	10.00
Ethylene glycol	107-21-1	10.00 - 20.00

### New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

Chemical name	CAS#	New Jersey TS Number
Thiram	137-26-8	
Carboxin	5234-68-4	
Metalaxyl	57837-19-1	
Ethylene glycol	107-21-1	
Magnesium aluminium silicate	12174-11-7	

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

## 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.

### Emergency Telephone Numbers

Latin America:	Brazil	+55 113 711 91 44
	All other countries	+44 (0)208 762 8322
Mexico		+52 555 004 87 63

### HMIS RATING

<b>Health: 1</b>	<b>Flammability: 1</b>	<b>Reactivity: 1</b>	<b>PPI: X</b>
------------------	------------------------	----------------------	---------------

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

**STILETTO (TM) is a trademark of Bayer CropScience.**

Copyright 2008 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.