



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Vitaflo™ -280 Flowable Fungicide

Product Use Description: Fungicide

Company: Chemtura Corporation  
199 Benson Road  
Middlebury, CT  
06749  
United States of America

Telephone: (US) +1 866-430-2775

Emergency telephone number: CHEMTREC: (24 hours) 800-424-9300

: Chemtura Corporation Emergency Response: CHEMTURA : 800-292-5898

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

Prepared by: Product Safety Department  
(US) +1 866-430-2775

12/03/2013

MSDSRequest@chemtura.com

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### **WARNING!**

Form: liquid      Colour: opaque pink red      Odour: vinegar-like Do not attempt to smell the product as it is hazardous.

Hazard Summary : Harmful by inhalation.  
May cause eye and skin irritation.  
May cause sensitization by skin contact.

OSHA Hazards : THIS MATERIAL IS HAZARDOUS UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29CFR 1910.1200.

#### Potential Health Effects

Symptoms of Overexposure : No information available.



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

Carcinogenicity:

**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**ACGIH**

Suspected human carcinogen

Distillates (petroleum), 64742-65-0  
solvent-dewaxed heavy  
paraffinic

Confirmed animal carcinogen with unknown relevance to humans

Solvent naphtha (petroleum), 64742-94-5  
heavy arom.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous components

Component / CAS-No.	Weight percent
Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0	>= 10 - < 30 %
Thiram 137-26-8	13.1908 %
carboxin 5234-68-4	15.4521 %
Solvent naphtha (petroleum), heavy arom. 64742-94-5	>= 0.1 - < 1 %

### SECTION 4. FIRST AID MEASURES

#### First aid procedures

- Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
If not breathing, give artificial respiration.  
Call a physician or poison control centre immediately.  
If breathing is difficult, give oxygen.  
Keep respiratory tract clear.
- Skin contact : Wash off with soap and plenty of water.  
If symptoms persist, call a physician.  
Take off contaminated clothing and wash before reuse.
- Eye contact : If eye irritation persists, consult a specialist.
- Ingestion : Rinse mouth with water.  
If victim is fully conscious, give a cupful of water.



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

DO NOT induce vomiting unless directed to do so by a physician or poison control center.  
Never give anything by mouth to an unconscious person.  
Do not give milk or alcoholic beverages.  
Obtain medical attention.

### Notes to physician

Symptoms : No information available.  
Risks : No information available.  
Treatment : No information available.

## SECTION 5. FIREFIGHTING MEASURES

### Flammable properties

Flash point : Remarks: Not available

### Fire fighting

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### Protective equipment and precautions for firefighters

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.  
Burning produces irritant fumes.  
Burning produces noxious and toxic fumes.

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.

Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for containment / Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

### SECTION 7. HANDLING AND STORAGE

#### Handling

Handling procedures : Avoid exceeding of the given occupational exposure limits (see section 8).  
For personal protection see section 8.  
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

#### Storage

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Other data : No decomposition if stored and applied as directed.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

#### Components with workplace control parameters

Components / CAS-No.	Value / Basis / Update	Control parameters	Further information
Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0	TWA	5 mg/m <sup>3</sup>	
	OSHA Z-1		
	2011-07-01		
	TWA	5 mg/m <sup>3</sup>	
	ACGIH		
	2010-03-01		
	TWA	5 mg/m <sup>3</sup>	
	OSHA P0		
	1989-01-19		
	TWA	5 mg/m <sup>3</sup>	
	NIOSH REL		
	2005-09-01		
	ST	10 mg/m <sup>3</sup>	
	NIOSH REL		
	2005-09-01		
Thiram	TWA	0.05 mg/m <sup>3</sup>	



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

137-26-8	ACGIH 2008-01-01		
	TWA OSHA Z-1 1997-08-04	5 mg/m3	
	TWA OSHA P0 1989-01-19	5 mg/m3	
	TWA NIOSH REL 2005-09-01	5 mg/m3	
Solvent naphtha (petroleum), heavy arom. 64742-94-5	TWA OSHA Z-1 2007-01-01	500 ppm 2,000 mg/m3	
	TWA ACGIH 2010-03-01	200 mg/m3	
	TWA OSHA P0 1989-01-19	400 ppm 1,600 mg/m3	

### Engineering measures

### Personal protective equipment

Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles

Hand protection : Polyvinyl alcohol or nitrile- butyl-rubber gloves  
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.  
Before removing gloves clean them with soap and water.

Skin and body protection : impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Form : liquid  
Colour : opaque  
pink  
red

Odour : vinegar-like  
Do not attempt to smell the product as it is hazardous.

#### Safety data

Flash point : Note: Not available  
pH : 6.3  
Melting point/freezing point : Note: not determined  
Boiling point/boiling range : Note: No information available.  
Vapour pressure : no data available  
Specific Gravity : 1.102 at 20 °C  
Viscosity, kinematic : Note: no data available

### SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Remarks: no data available  
Materials to avoid : Remarks: Strong acids and strong bases  
Hazardous decomposition products : Note: No hazardous decomposition products are known.

### SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity  
Thiram : LD50: 1,800 mg/kg  
Species: rat  
carboxin : LD50: 2,588 mg/kg  
Species: rat



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

### Acute inhalation toxicity

Thiram : LC50: 3.46 mg/l  
Exposure time: 4 h  
Species: rat

carboxin : LC50: > 4.7 mg/l  
Exposure time: 4 h  
Species: rat  
Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

### Acute dermal toxicity

Thiram : LD50: > 2,000 mg/kg  
Species: rabbit

carboxin : LD50: > 4,000 mg/kg  
Species: rabbit

### Skin irritation

Thiram : Species: rabbit  
Result: No skin irritation

carboxin : Species: rabbit  
Result: No skin irritation

### Eye irritation

Thiram : Species: rabbit  
Result: Irritating to eyes.  
Classification: Irritating to eyes.

carboxin : Species: rabbit  
Result: slight irritation  
Classification: No eye irritation

Sensitisation : Remarks: Causes sensitization.

### Repeated dose toxicity

Thiram : Species: rat  
Application Route: Oral  
Exposure time: (90 d)  
NOEL: 2.5 mg/kg  
  
Species: rabbit  
Application Route: Dermal  
Exposure time: (21 d)  
NOEL: 300 mg/kg  
  
Species: dog  
Application Route: Oral



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

carboxin : Exposure time: (90 d)  
NOEL: 2 mg/kg

carboxin : Species: rat, male  
Application Route: Dermal  
Exposure time: (28 d)  
NOEL: 30 mg/kg

carboxin : Species: rat, male  
Application Route: Oral  
Exposure time: (90 d)  
NOEL: 5.5 mg/kg

Carcinogenicity  
Thiram : Species: rat

carboxin : Species: rat

CMR effects  
Thiram : Carcinogenicity: negative  
Mutagenicity: negative  
Teratogenicity: negative  
Reproductive toxicity: negative

carboxin : Carcinogenicity: negative  
Mutagenicity: negative  
Teratogenicity: negative  
Reproductive toxicity: negative

Further information : no data available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

Toxicity to fish  
Thiram : LC50: 0.046 mg/l  
Exposure time: 96 h

carboxin : Species: Oncorhynchus mykiss (rainbow trout)  
static test  
: LC50: 2.3 mg/l  
Exposure time: 96 h

carboxin : Species: Oncorhynchus mykiss (rainbow trout)  
flow-through test

Toxicity to daphnia and other aquatic invertebrates  
Thiram : EC50: 0.011 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)





# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

carboxin : static test  
: EC50: > 57 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
flow-through test

Toxicity to algae  
Thiram : EC50: 0.065 mg/l  
Exposure time: 120 h  
Species: Pseudokirchneriella subcapitata (green algae)  
static test

carboxin : EC50: 0.48 mg/l  
Exposure time: 5 d  
Species: Pseudokirchneriella subcapitata (green algae)  
static test

Toxicity to fish (Chronic toxicity)  
carboxin : NOEC: 0.32 mg/l  
Exposure time: 21 d  
Species: Cyprinus carpio (Carp)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)  
Thiram : 0.008 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

carboxin : NOEC: 0.32 mg/l  
Exposure time: 17 d  
Species: Daphnia magna (Water flea)

### Elimination information (persistence and degradability)

Bioaccumulation : Remarks:  
no data available

Mobility : Remarks:  
no data available

Biodegradability : Remarks:  
no data available

### Further information on ecology

#### Ecotoxicology Assessment

Results of PBT assessment  
no data available

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

### SECTION 13. DISPOSAL CONSIDERATIONS

- Further information : Dispose of wastes in an approved waste disposal facility.  
The product should not be allowed to enter drains, water courses or the soil.  
In accordance with local and national regulations.  
Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.
- Contaminated packaging : Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### DOT

- UN number : 3082  
Description of the goods : Environmentally hazardous substances, liquid, n.o.s.  
(carboxin, thiram)  
Class : 9  
Packing group : III  
ERG Code : 171

#### IATA

- UN number : 3082  
Description of the goods : Environmentally hazardous substance, liquid, n.o.s.  
(carboxin, thiram)  
Class : 9  
Packing group : III  
Labels : 9  
Environmentally hazardous : yes

#### IMDG

- UN number : 3082  
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(carboxin, thiram)  
Class : 9  
Packing group : III  
EmS Number 1 : F-A  
EmS Number 2 : S-F  
Marine pollutant : yes  
carboxinthiram  
Environmentally hazardous : yes  
carboxin thiram



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

### SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

**CERCLA Reportable Quantity** : 76 lbs  
thiram (Dust) 137-26-8 10 lbs

**SARA 302 Reportable Quantity** :

**SARA 311/312 Hazards** : Acute Health Hazard

### EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

**SARA 302 Reportable Quantity** :

**SARA 304 Components** : Calculated RQ exceeds reasonably attainable upper limit.  
ethylene oxide (Vapour and gas) 10 lbs  
75-21-8

**SARA 313 Components** : carboxin 5234-68-4  
Thiram 137-26-8

**California Prop. 65 Components** : WARNING! This product contains a chemical known to the State of California to cause cancer.

quartz (SiO <sub>2</sub> )	14808-60-7 quartz (SiO <sub>2</sub> )
naphthalene	91-20-3 naphthalene (Vapour and gas)
Oxirane	75-21-8 ethylene oxide (Vapour and gas)
acetaldehyde	75-07-0 acetaldehyde
1,4-Dioxane	123-91-1 1,4-dioxane (Technical grade)

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Oxirane	75-21-8 ethylene oxide (Vapour and gas)
---------	---

The components of this product are reported in the following inventories:



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

**US.TSCA**

Not On TSCA Inventory

**DSL**

This product contains one or several components that are not on the Canadian DSL nor NDSL lists.

**AICS**

Not in compliance with the inventory

**NZIoC**

Not in compliance with the inventory

**ENCS**

Not in compliance with the inventory

**KECI**

Not in compliance with the inventory

**PICCS**

Not in compliance with the inventory

**IECSC**

Not in compliance with the inventory

**TSCA list Information**

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)  
ZUS T12B

Not relevant

### SECTION 16. OTHER INFORMATION

**Further information**



# Material Safety Data Sheet

## Vitaflo™ -280 Flowable Fungicide

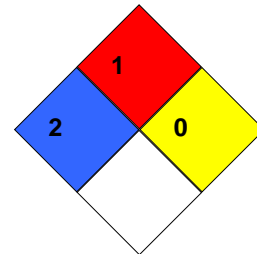
Version: 1.1

Revision Date: 12/03/2013

Print Date: 02/03/2014

**HMIS Classification** : Health hazard: 2  
Flammability: 1  
Physical hazards: 0  
PPI: Ask supervisor or safety specialist for handling instructions

**NFPA Classification** : Health hazard: 2  
Fire Hazard: 1  
Reactivity Hazard: 0



### Other Emergency Phone Number

<u>Latin America:</u>	Brazil	+55 113 711 9144
	All other countries	+44 (0) 1235 239 670
<u>Mexico:</u>		+52 555 004 8763

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.