



Material Safety Data Sheet

Vitaflo® - 280 Fungicide

Version: 2.1

Revision Date: 10/08/2010

Print Date: 11/05/2010

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: *Vitaflo® - 280 Fungicide*

Company: Chemtura Canada Co./Cie
25 ERB STREET
Elmira, Ontario
N3B 3A3
Canada

Telephone: 866-430-2775

Emergency telephone number: :
: 866-744-3060
CANUTEC: (24 hours) 613-996-6666 (call collect)

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

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

+011-886-2-2712-5668 MSDSRequest@chemtura.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

CAUTION!

Colour: light pink

Odour: mild sweet

Hazard Summary : May cause eye and skin irritation.
Consumption of alcoholic beverages increases the toxic effects of this chemical (Thiram).
Consumption of alcohol should be avoided before and after exposure.

WHMIS Classification : : This product is registered under the Pest Control Products Act and is therefore exempt from WHMIS supplier labeling and MSDS requirements. Please read entire MSDS and product label for safety precautions.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

| Component | CAS-No. | Weight percent |
|-----------------|-----------|----------------|
| carboxin | 5234-68-4 | 15.59 % |
| thiram | 137-26-8 | 13.25 % |
| Ethylene glycol | 107-21-1 | 10 - 30 % |

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

SECTION 4. FIRST AID MEASURES

First aid procedures

- Inhalation : Remove to fresh air.
Give artificial respiration if not breathing.
Obtain medical attention.
- Skin contact : Wash off with warm water and soap.
Remove contaminated clothing and shoes.
Wash clothing before reuse.
If symptoms persist, call a physician.
- Eye contact : Immediately flush eyes with water and continue washing for at least 15 minutes.
Obtain medical attention.
- Ingestion : If victim is fully conscious, give a cupful of water.
Do not induce vomiting without medical advice.
Get medical attention immediately.
Do not give milk, oily products, fat or alcohol.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

- Flash point : Remarks: no data available
- Ignition temperature : Remarks: not determined
- Lower explosion limit : Remarks: no data available
- Upper explosion limit : Remarks: no data available



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Fire fighting

Suitable extinguishing media : Extinguishing media - large fires
Alcohol-resistant foam
Small fires:
Carbon dioxide (CO₂)
Dry chemical
Water spray

Unsuitable extinguishing media : Water spray jet

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

Protective equipment and precautions for firefighters

Special protective equipment for fire-fighters : Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear suitable protective equipment.
Avoid contact with skin and eyes.

Environmental precautions : Prevent from entering sewer system, surface water or soil.

Methods for containment /
Methods for cleaning up : Absorb on inert material such as sand, earth, vermiculite.
Collect for disposal.
Dam up.
Large spills should be collected mechanically (remove by pumping) for disposal.
Pump excess material into suitable container (metal drums, metal tank, or such).

Observe government regulations.

SECTION 7. HANDLING AND STORAGE

Handling

Handling procedures : Do not eat, drink or smoke when handling.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Wash thoroughly after handling.

Storage

Requirements for storage : Keep in a dry, cool place.



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areas and containers

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Components with workplace control parameters

| Components / CAS-No. | Value / Basis / Update | Control parameters | Further information |
|-----------------------------|----------------------------------|---------------------------------|---------------------|
| thiram 137-26-8 | TWA | 1 mg/m ³ | |
| | CA AB OEL 2007-01-01 | | |
| | TWAEV CA ON OEL 2005-12-17 | 1 mg/m ³ | |
| Ethylene glycol 107-21-1 | TWAEV CA QC OEL 2006-12-29 | 5 mg/m ³ | |
| | CEV CA ON OEL 2005-12-17 | 100 mg/m ³ | |
| | C CA BC OEL 2006-11-29 | 50 ppm | |
| | (c) CA AB OEL 2007-01-01 | 100 mg/m ³ | |
| | C CA BC OEL 2006-11-29 | 100 mg/m ³ | |
| | C CA QC OEL 2006-12-29 | 50 ppm 127 mg/m ³ | |
| | TWA | 10 mg/m ³ | |



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| | | | |
|--|---------------------------------|-----------|--|
| | CA BC OEL 2006-11-29 | | |
| | STEL CA BC OEL 2006-11-29 | 20 mg/m3 | |
| | (c) CA AB OEL 2009-04-30 | 100 mg/m3 | |

Engineering measures

Personal protective equipment

Eye protection : Safety glasses with side-shields

Hand protection : Impervious gloves

Skin and body protection : Preventive skin 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.
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hygiene measures : Do not store near food, feed or fertilizers.
Do not contaminate ponds, lakes, streams, or any source of water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Colour : light pink

Odour : mild
sweet

Safety data



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Flash point : Note: no data available

Ignition temperature : Remarks: not determined

Lower explosion limit : Note: no data available

Upper explosion limit : Note: no data available

pH : ca. 7.8

Melting point/range : -4 °F (-20 °C)

Density : ca.1.117 g/cm³

Water solubility : Note: no data available

Partition coefficient: n-octanol/water : Note: no data available

Viscosity, kinematic : Note: no data available

SECTION 10. STABILITY AND REACTIVITY

Materials to avoid : Remarks: Oxidizing agents
Strong acids and strong bases

Hazardous decomposition products : Note: Carbon oxides
Other hazardous decomposition products may be formed.

Hazardous reactions : Hazardous polymerisation does not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity
carboxin : LD50: 2,900 mg/kg
Species: rat

thiram : LD50: 1,800 mg/kg
Species: rat

Ethylene glycol : LD50: 4,700 mg/kg
Species: rat

Acute inhalation toxicity
carboxin : LC50: > 4.7 mg/l
Exposure time: 4 h



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| | |
|-----------------------------------|--|
| | Species: rat |
| thiram | : LC50: > 5.04 mg/l Exposure time: 4 h Species: rat |
| Acute dermal toxicity carboxin | : LD50: > 4,000 mg/kg Species: rabbit |
| thiram | : LD50: > 2,000 mg/kg Species: rat |
| Ethylene glycol | : LD50: 10,670 mg/kg Species: rabbit |
| Skin irritation carboxin | : Species: rabbit Result: No skin irritation |
| thiram | : Species: rabbit Result: No skin irritation Exposure time: 4 h |
| Eye irritation carboxin | : Species: rabbit Result: No eye irritation |
| thiram | : Species: rabbit Result: Eye irritation |
| Sensitisation carboxin | : Maximisation Test Species: guinea pig Classification: May cause sensitization by skin contact. Method: OECD Test Guideline 406 |
| thiram | : Species: guinea pig Classification: May cause sensitization by skin contact. Result: Causes sensitization. |
| CMR effects carboxin | : Carcinogenicity: Animal testing did not show any carcinogenic effects. Mutagenicity: In vitro tests showed mutagenic effects which were not observed with in vivo test. |



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thiram : Teratogenicity: No effects on or via lactation
Reproductive toxicity: No toxicity to reproduction
: Carcinogenicity: Animal testing did not show any carcinogenic effects.
Mutagenicity: In vitro tests showed mutagenic effects
Reproductive toxicity: No effects on or via lactation

12. ECOLOGICAL INFORMATION

Toxicity to fish
carboxin : LC50: 2.3 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
flow-through test
LC50: 3.6 mg/l
Exposure time: 96 h
thiram : Species: Lepomis macrochirus (Bluegill sunfish)
flow-through test
LC50: 0.13 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates.
carboxin : EC50: > 57 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
flow-through test
thiram : EC50: 0.21 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae
carboxin : EC50: 1.9 mg/l
Exposure time: 96 h
Species: Chlorella vulgaris (Fresh water algae)
Growth inhibition
EC50: 0.48 mg/l
Exposure time: 120 h
thiram : 0.4517 mg/l
Exposure time: 96 h
Species: Chlorella vulgaris (Fresh water algae)



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0.14 mg/l
Exposure time: 96 h
Species: Scenedesmus capricornutum (fresh water algae)

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

thiram : 0.008 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Biodegradability
carboxin : Remarks:
Not readily biodegradable.

Further information on ecology

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of waste material in compliance with all federal, state, and local regulations.
The product should not be allowed to enter drains, water courses or the soil.

SECTION 14. TRANSPORT INFORMATION

TDG

UN number : 3082
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Carboxin, Thiram)
Class : 9
Packing group : III

IATA

UN number : 3082



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Description of the goods : Environmentally hazardous substance, liquid, n.o.s.
(Carboxin, Thiram)

Class : 9

Packing group : III

IMDG

UN number : 3082

Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Carboxin, Thiram)

Class : 9

Packing group : III

EmS Letter 1 : F-A

EmS Letter 2 : S-F

Marine pollutant : yes
Carboxin Thiram

SECTION 15. REGULATORY INFORMATION

WHMIS Classification :

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

REACH On the inventory, or in compliance with the inventory

CH INV Not in compliance with the inventory

TSCA Not On TSCA Inventory



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DSL This product contains the following components that are not on the Canadian DSL nor NDSL lists.

AICS On the inventory, or in compliance with the inventory

NZIoC Not in compliance with the inventory

ENCS Not in compliance with the inventory

ISHL 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

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.
Ce produit a été classé selon les critères de risque du RPC et la FS contient toutes les informations exigées par le RPC.



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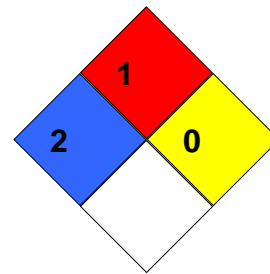
Print Date: 11/05/2010

Ce produit a été classé selon les critères de risque du RPC et la FDS contient toutes les informations exigées par le RPC.

SECTION 16. OTHER INFORMATION

Further information

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



Other Emergency Phone Number

| | | |
|-----------------------|---------------------|---------------------|
| <u>Latin America:</u> | Brazil | +52 113 711 91 44 |
| | All other countries | +44 (0)208 762 8322 |
| <u>Mexico:</u> | | +52 555 004 87 63 |

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.