SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name:  

VITAVAX® 200FF  
EPA REG. NO 400-112

Product Use Description:  
Plant protection agent

Synonyms:  

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

Telephone:  866-430-2775

Emergency telephone:  
CHEMTREC: (24 hours) 800-424-9300
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  
+011-886-2-2712-5668  
MSDSRequest@chemtura.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

CAUTION!

Form: liquid  
Colour: pink  
Odour: slight characteristic

Hazard Summary:  
May be harmful if inhaled, swallowed, or absorbed through skin. Consumption of alcoholic beverages increases the toxic effects of this chemical (Thiram). May cause allergic skin reaction. Irritating to eyes. Very toxic to aquatic organisms.

**Potential Health Effects**

<table>
<thead>
<tr>
<th>Primary Routes of Entry</th>
<th>Skin Absorption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Ingestion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aggravated Medical Condition</th>
<th>Dermatitis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skin disorders</td>
</tr>
<tr>
<td></td>
<td>Allergies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Organs</th>
<th>Skin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immune system</td>
</tr>
<tr>
<td></td>
<td>Kidney</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>May be harmful if inhaled.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dust may cause irritation of the respiratory tract.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin</th>
<th>May be harmful if absorbed through skin.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>May cause allergic skin reaction.</td>
</tr>
<tr>
<td></td>
<td>Prolonged or repeated exposure increases the risk.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Irritating to eyes.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>May be harmful if swallowed.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Chronic Exposure</th>
<th>Harmful: danger of serious damage to health by prolonged exposure if swallowed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptoms of Overexposure</th>
<th>Sweating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dizziness</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Vomiting</td>
</tr>
<tr>
<td></td>
<td>Diarrhoea</td>
</tr>
<tr>
<td></td>
<td>More severe effects if alcohol is consumed.</td>
</tr>
</tbody>
</table>

**Environmental Effects**
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>20 - 25 %</td>
</tr>
<tr>
<td>thiram</td>
<td>137-26-8</td>
<td>17 - 18 %</td>
</tr>
<tr>
<td>carboxin</td>
<td>5234-68-4</td>
<td>17 - 18 %</td>
</tr>
<tr>
<td>9-(2-carboxyphenyl)-3,6-bis(diethylamino)xanthylum chloride</td>
<td>81-88-9</td>
<td>&lt; 1 %</td>
</tr>
</tbody>
</table>

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

SECTION 4. FIRST AID MEASURES

First aid procedures

Inhalation : Remove to fresh air. Obtain medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash off with warm water and soap. If symptoms persist, call a physician. Wash contaminated clothing before re-use. Destroy contaminated shoes.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Ingestion : Do NOT induce vomiting. Rinse mouth with water. Obtain medical attention.

Notes to physician

Symptoms : Sweating Dizziness Headache Nausea Vomiting Diarrhoea More severe effects if alcohol is consumed.
SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties
Flash point : 221 °F (105 °C)
   Method: Tag closed cup
Ignition temperature : > 770 °F (410 °C)

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 : Fight fires from a safe distance.
   Move containers from fire area if possible.
   Use water spray to cool unopened containers.
   Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Protective equipment and precautions for firefighters
Specific hazards during fire fighting : Burning produces irritant fumes.
   Exposure to decomposition products may be a hazard to health.

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 : Should not be released into the environment.
   Do not flush into surface water or sanitary sewer system.
   Avoid subsoil penetration.

Methods for containment / Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
   Large spills should be collected mechanically (remove by pumping) for disposal.
   Keep in suitable, closed containers for disposal.
SECTION 7. HANDLING AND STORAGE

Handling
Handling procedures: Use plant protection products safely. Always read the label and product information before use. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not breathe vapours or spray mist. Use only in area provided with appropriate exhaust ventilation. Handle and open container with care. Wash thoroughly after handling.

Storage
Requirements for storage areas and containers: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container.

Other data: Stable at normal ambient temperature and pressure.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components / CAS-No.</th>
<th>Value / Basis / Update</th>
<th>Control parameters</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol 107-21-1</td>
<td>C OSHA P0 1989-01-19</td>
<td>50 ppm 125 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Thiram 137-26-8</td>
<td>TWA ACGIH 2008-01-01</td>
<td>0.05 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA 5 mg/m3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Engineering measures
Engineering measures     : Use mechanical ventilation for general area control.
                        Ensure that extracted air cannot be returned to the workplace through the ventilation system.
                        Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment
Eye protection          : Safety glasses with side-shields
                        or
                        Safety goggles
Hand protection         : Impervious gloves
Skin and body protection: impervious clothing
                        Long sleeved clothing
                        To protect against splashes from pouring:
                        Rubber or plastic boots
                        Rubber or plastic apron
                        Remove and wash contaminated clothing before re-use.
                        Discard contaminated shoes.
Respiratory protection  : In the case of vapour formation use a respirator with an approved filter.
                        Respirator with a vapour filter (EN 141)
Hygiene measures        : Handle in accordance with good industrial hygiene and safety practice.
                        Ensure adequate ventilation, especially in confined areas.
                        Avoid contact with skin, eyes and clothing.
                        Do not inhale aerosol.
                        Wear suitable gloves and eye/face protection.
                        When using do not eat, drink or smoke.
                        Wash thoroughly after handling.
                        Keep working clothes separately.
                        Remove and wash contaminated clothing before re-use.
                        Contaminated work clothing should not be allowed out of the workplace.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form : liquid
Colour : pink
Odour : slight characteristic

Safety data
Flash point : 221 °F (105 °C)
Method: Tag closed cup
Ignition temperature : > 770 °F (410 °C)
pH : 7 - 9
Freezing point : -8 °F (-22 °C)
Boiling point/boiling range : 220.1 °F (104.5 °C)
Density : 1.158 g/cm3 at 68 °F (20 °C)
Water solubility : Note: dispersible
Solubility in other solvents : Medium: Organic solvents
Note: no data available
Viscosity, dynamic : 70 - 140 mPa.s at 68 °F (20 °C)
Evaporation rate : 0.13
Note: (Butyl acetate = 1)

SECTION 10. STABILITY AND REACTIVITY

Materials to avoid : Remarks: Oxidizing agents
Strong acids and strong bases
Hazardous decomposition products : Note: Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides
Hazardous reactions : Hazardous polymerisation does not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

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

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

carboxin : LD50: 2,900 mg/kg
Species: rat

Acute inhalation toxicity
thiram : LC50: > 0.1 mg/l
Exposure time: 4 h
Species: rat

LC50: > 5.04 mg/l
Exposure time: 4 h
Species: rat

carboxin : LC50: > 4.7 mg/l
Exposure time: 4 h
Species: rat

Acute dermal toxicity
Ethylene glycol : LD50: 10,670 mg/kg
Species: rabbit

thiram : LD50: > 2,000 mg/kg
Species: rat

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

Skin irritation
thiram : Species: rabbit
Result: No skin irritation
Exposure time: 4 h

carboxin : Species: rabbit
Result: No skin irritation
Eye irritation

thiram : Species: rabbit
Result: Eye irritation

carboxin : Species: rabbit
Result: No eye irritation

Sensitisation

thiram : Species: guinea pig
Classification: May cause sensitization by skin contact.
Result: Causes sensitization.

carboxin : Maximisation Test
Species: guinea pig
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 406

CMR effects

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

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.
Teratogenicity: No effects on or via lactation
Reproductive toxicity: No toxicity to reproduction

9-(2-carboxyphenyl)-3,6-bis(diethylamino)xanthylium chloride : Carcinogenicity: IARC Class 3, not classifiable as to carcinogenicity to humans

12. ECOLOGICAL INFORMATION

Toxicity to fish

thiram : LC50: 0.13 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

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

Toxicity to daphnia and other aquatic invertebrates.
thiram: EC50: 0.21 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

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

Toxicity to algae
thiram: 0.4517 mg/l
Exposure time: 96 h
Species: Chlorella vulgaris (Fresh water algae)

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

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)

Biodegradability

carboxin: Remarks:
Not readily biodegradable.
SECTION 13. DISPOSAL CONSIDERATIONS

Further information on ecology

Further information: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.

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

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

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

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

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

- palygorskite 12174-11-7
- Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride 81-88-9

The components of this product are reported in the following inventories:
REACH On the inventory, or in compliance with the inventory

TSCA Note: FIFRA (Federal Insecticide, Fungicide, Rodenticide Act): This product is a registered pesticide.

DSL Note: 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.

AICS On the inventory, or in compliance with the inventory
NZIoC On the inventory, or in compliance with the inventory
KECI Not in compliance with the inventory
PICCS Not in compliance with the inventory
SECTION 16. OTHER INFORMATION

Further information

HMIS Classification:
- Health hazard: 2
- Chronic Health Hazard: *
- Flammability: 1
- Reactivity: 0

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

Other Emergency Phone Number

<table>
<thead>
<tr>
<th>Latin America:</th>
<th>Brazil</th>
<th>+52 113 711 91 44</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All other countries</td>
<td>+44 (0)208 762 8322</td>
</tr>
<tr>
<td>Mexico:</td>
<td></td>
<td>+52 555 004 87 63</td>
</tr>
</tbody>
</table>

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