SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : VITAVAX® 200FF SEED TREATMENT
Product code : 000000015732

Manufacturer or supplier's details
Company: Arysta LifeScience Australia Pty Ltd
          c/o Level 7, 435 King William Street
          Adelaide SA
          Australia
          5000
          Telephone : + 61 8 8112 0900

Prepared by sds.request@arysta.com

Further information for the safety data sheet :
          sds.request@arysta.com

1.4 Emergency telephone number
Emergency telephone number: +61 2801 44558, ORICA : 1800 033 111 (24 hr Service)
For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Recommended use of the chemical and restrictions on use
Recommended use : Plant protection agent
                   Fungicide

Restrictions on use : Agriculture
                     For professional users only.
                     APVMA No: 55760

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Specific target organ toxicity - repeated exposure : Category 2

GHS Label element
SAFETY DATA SHEET
VITAVAX® 200FF SEED TREATMENT

Version 1.7 Revision Date: 09.11.2015 MSDS Number: 000000015732 Country: AU Language: EN

Hazard pictograms

Signal word : Warning

Hazard statements : H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : Prevention:
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Response:
P314 Get medical advice/ attention if you feel unwell.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
Hazardous substance
Dangerous goods
Very toxic to aquatic life with long lasting effects.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Carboxin - 200 gm/L
Thiram - 200 gm/L.

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethane-1,2-diol</td>
<td>107-21-1</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td>thiram</td>
<td>137-26-8</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td>carboxin</td>
<td>5234-68-4</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : For advice, contact a Poisons Information Centre (Phone: Australia 131 126 or New Zealand 0800 764 766) or a doctor at once.

If inhaled : Remove to fresh air. Obtain medical attention.

In case of skin contact : Remove contaminated clothing and shoes. Wash off with warm water and soap. If symptoms persist, call a physician.

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

If swallowed:
- Do NOT induce vomiting.
- Rinse mouth with water.
- Obtain medical attention.

Most important symptoms and effects, both acute and delayed:
- Symptoms may be delayed.
- May cause damage to organs through prolonged or repeated exposure if swallowed.

Notes to physician:
- The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing media:
- Water spray jet

Specific hazards during firefighting:
- Burning produces irritant fumes.
- Exposure to decomposition products may be a hazard to health.

Specific extinguishing methods:
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Use water spray to cool unopened containers.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Special protective equipment for firefighters:
- In the event of fire, wear self-contained breathing apparatus.
- Full protective flameproof clothing

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- Wear suitable protective equipment.
- Avoid contact with skin and eyes.
- Keep in properly labelled containers.
- Dispose of rinse water as waste water.

Environmental precautions:
- Should not be released into the environment.

Methods and materials for containment and 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

Advice on safe handling: 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.

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethane-1,2-diol</td>
<td>107-21-1</td>
<td>TWA (particulate)</td>
<td>10 mg/m³</td>
<td>AU OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Vapour)</td>
<td>20 ppm 52 mg/m³</td>
<td>AU OEL</td>
</tr>
<tr>
<td>thiram</td>
<td>137-26-8</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>AU OEL</td>
</tr>
</tbody>
</table>

Further information:
- Skin absorption
- Sensitiser
- In the case of vapour formation use a respirator with an approved filter.

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:
- Respiratory protection
Respirator with a vapour filter (EN 141)

Hand protection

Remarks: Impervious gloves

Eye protection: Safety glasses with side-shields or Safety goggles

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: suspension

Colour: pink

Odour: slight, characteristic

Odour Threshold: No data available

pH: 7 - 9

Freezing point: -22 °C

Boiling point/boiling range: No data available

Flash point: 105 °C
Method: Tag closed cup

Evaporation rate: 0.13

Upper explosion limit: No data available

Lower explosion limit: No data available

Vapour pressure: No data available

Relative vapour density: No data available

Relative density: 1.135 - 1.175 (20 °C)

Density: 1.155 g/cm³ (25 °C)

Solubility(ies)
Water solubility: dispersible
Solubility in other solvents: No data available
Solvent: Organic solvents

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity
Viscosity, dynamic: 70 - 140 mPa.s (20 °C)
Viscosity, kinematic: No data available

Self-Accelerating decomposition temperature (SADT): Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Hazardous polymerisation does not occur.
Conditions to avoid: Extremes of temperature and direct sunlight.
Incompatible materials: Oxidizing agents
Strong acids and strong bases
Hazardous decomposition products: Burning produces noxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:
Acute oral toxicity: LD50 (Rat): 4,500 mg/kg
Acute inhalation toxicity: Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method
Acute dermal toxicity: LD50 (Rat): > 4,000 mg/kg

Components:
ethane-1,2-diol:
Acute oral toxicity : LD50 (Rat, female): 4,700 mg/kg
Acute dermal toxicity : LD50 (Rabbit): 10,670 mg/kg

thiram:
Acute oral toxicity : LD50 (Rat, female): 1,800 mg/kg
Acute inhalation toxicity : LC50 (Rat, female): 3.46 mg/l
   Exposure time: 4 h
   Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

carboxin:
Acute oral toxicity : LD50 (Rat, male): 2,588 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): > 4.7 mg/l
   Exposure time: 4 h
   Assessment: The substance or mixture has no acute inhalation toxicity
   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 : LD50 (Rabbit, male and female): > 4,000 mg/kg

Skin corrosion/irritation

Product:
Species: Rabbit
Result: No skin irritation

Components:
thiram:
Species: Rabbit
Result: No skin irritation
carboxin:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:
Species: Rabbit
Result: No eye irritation

Components:
thiram:
Species: Rabbit
Result: Irritating to eyes.
Assessment: Irritating to eyes.

carboxin:
Species: Rabbit
Result: slight irritation
Assessment: No eye irritation

Respiratory or skin sensitisation

Product:
Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.

Components:
thiram:
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Result: Causes sensitisation.

carboxin:
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Method: Magnusson-Kligmann-Test
Result: positive
GLP: yes

Chronic toxicity

Germ cell mutagenicity

Product:
Germ cell mutagenicity - : negative
Assessment

Components:
thiram:
Genotoxicity in vitro : Species: Salmonella typhimurium
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: positive

: Species: Chinese hamster ovary cells
Result: negative

: Species: Chinese hamster ovary cells
Method: In Vitro mammalian Cell Gene Mutation Test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian bone marrow chromosome aberration test
Species: Mouse
Germ cell mutagenicity - Assessment: negative

carboxin:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation test
Species: Salmonella typhimurium
Result: negative

Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
Species: Chinese hamster ovary cells
Result: Negative without activation, positive with activation

Genotoxicity in vitro: Test Type: In Vitro mammalian Cell Gene Mutation Test
Species: Chinese hamster ovary cells
Result: negative

Genotoxicity in vitro: Test Type: Unscheduled DNA synthesis (UDS)
Species: rat hepatocytes
Result: positive

Carcinogenicity

Product: Carcinogenicity - Assessment: negative

Components:

thiram:
Species: Rat
Application Route: Oral
NOAEL: No observed adverse effect level: 1.5 mg/kg bw/day

Carcinogenicity - Assessment: negative
Carcinogenicity - Assessment: negative

Reproductive toxicity

Product:
Reproductive toxicity - Assessment: negative

Components:
thiram:
Effects on fertility: Species: Rat
   General Toxicity - Parent: No observed adverse effect level: 2.3 mg/kg bw/day
   General Toxicity F1: No observed adverse effect level F1: 9 mg/kg bw/day
   Early Embryonic Development: No observed adverse effect level F2: 3 mg/kg bw/day

Effects on foetal development: Species: Rabbit
   General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day
   Teratogenicity: No observed adverse effect level: 10 mg/kg bw/day

   Species: Rat
   Teratogenicity: No observed adverse effect level: 7.5 mg/kg bw/day

Reproductive toxicity - Assessment: negative

Carboxin:
Effects on fertility: General Toxicity - Parent: No observed adverse effect level: 1 mg/kg bw/day
   General Toxicity F1: No observed adverse effect level F1: 20 mg/kg bw/day
   Early Embryonic Development: No observed adverse effect level F2: 10 mg/kg bw/day

Effects on foetal development: Species: Rat
   General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day
   Teratogenicity: No observed adverse effect level: 90 mg/kg bw/day
Species: Rabbit
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 75 mg/kg bw/day

Reproductive toxicity - Assessment: negative

Repeated dose toxicity

Components:

thiram:
Species: Rat
NOAEL: 2.5 mg/kg
Application Route: Oral
Exposure time: 90 d
Target Organs: Stomach

Species: Rabbit
NOAEL: 300 mg/kg
Application Route: Dermal
Exposure time: 21 d

Species: Dog
NOAEL: 2 mg/kg
Application Route: Oral
Exposure time: 90 d
Target Organs: Liver

carboxin:
Species: Rat, male
NOAEL: 30 mg/kg
Application Route: Dermal
Exposure time: 28 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 5.5 mg/kg
Application Route: Oral
Exposure time: 90 d
GLP: yes
Target Organs: Kidney

Further information

Product:
Remarks: No data available
## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Product:**
- **Toxicity to fish:**
  - Remarks: Information refers to the main component.

**Components:**
- **thiram:**
  - **Toxicity to fish:**
    - LC50 (Oncorhynchus mykiss (rainbow trout)): 0.046 mg/l
    - Exposure time: 96 h
    - Test Type: static test
  - **Toxicity to daphnia and other aquatic invertebrates:**
    - EC50 (Daphnia magna (Water flea)): 0.011 mg/l
    - Exposure time: 48 h
    - Test Type: static test
  - **Toxicity to algae:**
    - EC50 (Pseudokirchneriella subcapitata (green algae)): 0.065 mg/l
    - Exposure time: 120 h
    - Test Type: static test
  - **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**
    - (Daphnia magna (Water flea)): 0.008 mg/l
    - Exposure time: 21 d

- **carboxin:**
  - **Toxicity to fish:**
    - LC50 (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l
    - Exposure time: 96 h
    - Test Type: flow-through test
    - GLP: yes
  - **Toxicity to daphnia and other aquatic invertebrates:**
    - EC50 (Daphnia magna (Water flea)): > 57 mg/l
    - Exposure time: 48 h
    - Test Type: flow-through test
    - GLP: yes
  - **Toxicity to algae:**
    - EC50 (Pseudokirchneriella subcapitata (green algae)): 0.48 mg/l
    - Exposure time: 5 d
    - Test Type: static test
  - **Toxicity to fish (Chronic toxicity):**
    - NOEC (Cyprinus carpio (Carp)): 0.32 mg/l
    - Exposure time: 21 d
    - GLP: yes
  - **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**
    - NOEC (Daphnia magna (Water flea)): 0.32 mg/l
    - Exposure time: 17 d
    - GLP: yes
Persistence and degradability

**Product:**
Biodegradability : Remarks: No data available

**Components:**
**thiram:**
Biodegradability : Result: Not readily biodegradable.

**carboxin:**
Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

**Product:**
Bioaccumulation : Remarks: No data available

**Components:**
**ethane-1,2-diol:**
Partition coefficient: n-octanol/water : log Pow: -1.3

**thiram:**
Partition coefficient: n-octanol/water : log Pow: 2.1

**carboxin:**
Partition coefficient: n-octanol/water : log Pow: 2.3

Mobility in soil

**Product:**
Mobility : Remarks: No data available

Other adverse effects

**Product:**
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.

**Components:**
**thiram:**
Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

**carboxin:**
Results of PBT and vPvB : This substance is not considered to be persistent, bioaccumu-
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (thiram, carboxin)
Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., Environmentally hazardous substance, liquid, n.o.s. (thiram, carboxin)
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 964
Packing instruction (passenger aircraft): 964

IMDG-Code
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (thiram, carboxin)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations
SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

R-phrase(s) : R48/22  Harmful: danger of serious damage to health by prolonged exposure if swallowed.

R50/53  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s) : S24  Avoid contact with skin.

S37  Wear suitable gloves.

S57  Use appropriate container to avoid environmental contamination.

S60  This material and its container must be disposed of as hazardous waste.

Standard for the Uniform Scheduling of Medicines and Poisons : Schedule 6

Prohibition/Licensing Requirements : There is no applicable prohibition or notification/licensing requirements, including for carcinogens under Commonwealth, State or Territory legislation.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations
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.

AU / EN
### Emergency Phone Numbers

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>+64 9929 1483</td>
</tr>
<tr>
<td>China</td>
<td>+86 532 8388 9090</td>
</tr>
<tr>
<td>China Taiwan</td>
<td>+86 10 5100 3039</td>
</tr>
<tr>
<td>Japan</td>
<td>+81 345 789 341</td>
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<tr>
<td>Indonesia</td>
<td>00780 3011 0293</td>
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<tr>
<td>Malaysia</td>
<td>+60 3 6207 4347</td>
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<tr>
<td>Thailand</td>
<td>001800 1 2066 6751</td>
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<tr>
<td>Korea</td>
<td>+65 3158 1285 (or +82 (0)234 798 401)</td>
</tr>
<tr>
<td>Vietnam</td>
<td>+65 3158 1255</td>
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<tr>
<td>India</td>
<td>+65 3158 1198 (or 0800 100 7479)</td>
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<tr>
<td>Pakistan</td>
<td>+65 3158 1329</td>
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<tr>
<td>Philippines</td>
<td>+65 31581203</td>
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<tr>
<td>Sri Lanka</td>
<td>+65 3158 1195</td>
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<tr>
<td>Emergency Phone Number</td>
<td>+65 3158 1200</td>
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<td>Middle East / Africa:</td>
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<tr>
<td>Arabic speaking countries</td>
<td>+44 (0) 1235 239 671</td>
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<tr>
<td>South Africa</td>
<td>+27 21 300 2732</td>
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<tr>
<td>All other countries</td>
<td>+44 (0) 1235 239 670</td>
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<tr>
<td>America</td>
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<tr>
<td>United States of America and Canada</td>
<td>+1866 928 0789 (or +1 215 207 0061)</td>
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<td>Latin America:</td>
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<tr>
<td>Brazil</td>
<td>+55 11 3197 5891</td>
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<td>Mexico</td>
<td>+52 555 004 8763</td>
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<tr>
<td>Chile</td>
<td>+56 225 829 336</td>
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<td>All other countries</td>
<td>+44 (0) 1235 239 670</td>
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</tbody>
</table>