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**In Case of Emergency, Call  
1-800-327-8633 (FAST MED)**

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MSDS prepared by:  
Department of Regulatory & Biology Assessment  
Syngenta Canada Inc.

**For further information contact:**  
1-87-SYNGENTA (1-877-964-3682)

## SECTION – 1: PRODUCT IDENTIFICATION

**Product Identifier:** VANGARD® 75WG Fungicide Agricultural  
**Registration Number:** 25509 (Pest Control Products Act)  
**Chemical Class:** A pyrimidine derivative fungicide.

Formulation No.: A8779A

**Active Ingredient (%):** Cyprodinil (75.0%)  
**Chemical Name:** 4-Cyclopropyl-6-methyl-N-phenylpyrimidiamine.

CAS No.: 121552-61-2

**Product Use:** A water dispersible granule fungicide to be mixed with water and used for control of fungal diseases in stone fruit and grapes. Please refer to product label for further details.

## SECTION – 2: COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Kaolin Clay (CAS # 1332-58-7)	15 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)	2 mg/m <sup>3</sup> TWA (respirable)	10 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)**	No	Not Established
Cyprodinil	Not Established	Not Established	7 mg/m <sup>3</sup> TWA***	No	Not Established

\*\* Recommended by NIOSH

\*\*\* Syngenta Occupational Exposure Limit (OEL)

† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
Syngenta Hazard Category: B

## SECTION – 3: HAZARDS IDENTIFICATION

### Symptoms of Acute Exposure

Causes minimal eye and skin irritation.

### Hazardous Decomposition Products

Combustible powder. May form flammable dust-air mixture. Can decompose at high temperatures forming toxic gases.

### Physical Properties

Appearance: Beige granules.

Odour: Weak.

### Unusual Fire, Explosion and Reactivity Hazards

This product is a granular solid that can generate dust if not handled with care. Mixtures of dust in air should be

avoided. This product has a minimum ignition energy between 10 and 30 millijoules. Static electricity, mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material.

**See also Section 7.**

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

### **Potential Health Effects**

**Relevant routes of exposure:** Skin, eyes, mouth, lungs.

## **SECTION – 4: FIRST AID MEASURES**

**IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital.** Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

**EYE CONTACT:** Flush eyes with clean water, holding eyelids apart for a minimum of 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

**SKIN CONTACT:** Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with plenty of water for 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.

**INHALATION:** Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

**INGESTION:** If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

### **NOTES TO PHYSICIAN:**

There is no specific antidote. Treat symptomatically.

### **MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:**

Asthma or other respiratory conditions may be aggravated by chemical irritants.

## **SECTION – 5: FIRE FIGHTING MEASURES**

**Flash point and method:** Not applicable.

**Upper and lower flammable (explosive) limits in air:** Not applicable.

**Auto-ignition temperature:** Not applicable.

**Flammability:** Combustible powder.

**Hazardous combustion products:** This product is a combustible powder and like all combustible powders can ignite, burn and form explosive mixtures with air if not handled correctly. Mixtures of powder in air with flammable solvent vapours should be avoided. This product has a minimum ignition energy between 10 and 30 millijoules. Static electricity, mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**Conditions under which flammability could occur:** See “**Hazardous combustion products:**” above. Keep fire exposed containers cool by spraying with water.

**Extinguishing media:** Use appropriate extinguishing media for combustibles in the area. Use water fog or mist, (avoid use of water jet), foam, carbon dioxide, dry powder or halon extinguishant. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

**Sensitivity to explosion by mechanical impact:** See “**Hazardous combustion products:**” above.  
**Sensitivity to explosion by static discharge:** See “**Hazardous combustion products:**” above.

## SECTION – 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Use adequate ventilation and equipment and wear clothing as described in Section 8 and/or the product label.

**Procedures for dealing with release or spill:** See “**Hazardous combustion products:**” above. Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Scoop or sweep up material and place into a disposable container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory authority.

## SECTION – 7: HANDLING AND STORAGE

**Handling practices:** This material is capable of forming flammable dust clouds in air, which, if ignited, can produce a dust cloud explosion. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.

Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form. Bulk bags (FIBC) used to contain this material should be either type B or type C. If type C bags are used make sure they are electrically grounded before powder is charged into the bag or discharged from the bag.

**KEEP OUT OF REACH OF CHILDREN.** Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.

**Appropriate storage practices/requirements:** Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

**National Fire Code classification:** Not applicable.

## SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Applicable control measures, including engineering controls:** This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**CONSULT THE PRODUCT LABEL FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS.**

**Personal protective equipment for each exposure route:**

General: Avoid breathing dust, vapour or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics or handling tobacco.

**INGESTION:** Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

**EYES:** Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material

should be equipped with an eyewash facility and a safety shower.

**SKIN:** Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

**INHALATION:** A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits. In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

## SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Beige granules.  
**Formulation Type:** Water dispersible granule.  
**Odour:** Weak.  
**pH:** 8 – 10 (1% aqueous solution @ 25 °C).  
**Vapour pressure and reference temperature:**  $3.8 \times 10^{-6}$  mmHg @ 25 °C (Cyprodinil Technical).  
**Vapour density:** Not available.  
**Boiling point:** Not applicable.  
**Melting point:** 71 - 76 °C.  
**Freezing point:** Not applicable.  
**Specific gravity or density:** 0.47 g/cm<sup>3</sup>.  
**Evaporation Rate:** Not available.  
**Water/oil partition coefficient:** log Kow = 4.0 (cyprodinil)  
**Odour threshold:** Not available.  
**Viscosity:** Not applicable.  
**Solubility in Water:** 12 mg/L @ 20 °C (Cyprodinil Technical).

## SECTION – 10: STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal use and storage conditions.  
**Conditions to avoid:** Static electricity, mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material.  
**Incompatibility with other materials:** Strong acids, strong alkalis, strong oxidizing agents, aluminium powder.  
**Hazardous decomposition products:** Can decompose at high temperatures forming toxic gases.  
**Hazardous polymerization:** Will not occur.

## SECTION – 11: TOXICOLOGICAL INFORMATION

### Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Rabbit):	> 5,000 mg/kg body weight
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rat):	> 2,000 mg/kg body weight
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat):	> 2.5 mg/L air - 4 hours
Eye Contact:	<u>Minimally Irritating (Rabbit)</u>	
Skin Contact:	<u>Minimally Irritating (Rabbit)</u>	
Skin Sensitization:	<u>Not a Sensitizer (Guinea Pig)</u>	

### Reproductive/Developmental Effects

Cyprodinil: No teratogenic potential was detected with cyprodinil in tests with rats and rabbits. No effects on reproductive performance of rats were detected..

### Chronic/Subchronic Toxicity Studies

Cyprodinil: Liver, kidneys and thyroid effects at high doses.

### Carcinogenicity

Cyprodinil: Not carcinogenic in studies with rats and mice. Designated as class E "not likely" for human carcinogenicity (1998 USEPA "Pesticide Fact Sheet").

### Other Toxicity Information:

None.

### Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the "other components" in the formulation.

Kaolin Clay

May cause eye and respiratory tract irritation.

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs.

Continued long-term exposure may affect respiratory function in some individuals.

**Other materials that show synergistic toxic effects together with the product:** None known.

### Target Organs

#### Active Ingredient

Cyprodinil: Liver, kidney, thyroid

#### Inert Ingredients

Kaolin Clay Eye, skin, respiratory tract, digestive tract.

## SECTION – 12: ECOLOGICAL INFORMATION

### Summary of Effects

The active ingredient, cyprodinil, is practically nontoxic to plants, algae, mammals, birds and insects, but is highly toxic to fish, and aquatic invertebrates (water flea).

### Eco-Acute Toxicity

Cyprodinil:

Algae (Blue-green) 120-hour EC <sub>50</sub>	2.25 ppm
Invertebrates (Water Flea) 48-hour EC <sub>50</sub>	32 ppb
Fish (Trout) 96-hour LC <sub>50</sub> /EC <sub>50</sub>	2.4 ppm
Bird (Mallard Duck) 14-day LD <sub>50</sub>	> 500 mg/kg bw

### Environmental Fate

The active ingredient cyprodinil has a low bioaccumulation potential and low mobility in soil. The dissipation half-life in soil is 31 - 80 days and in water it is 16.3 days. The main route of degradation is by microbial degradation and formation of bound residues.

## SECTION – 13: DISPOSAL CONSIDERATIONS

**Waste disposal information:** Do not reuse empty containers unless they are specifically designed to be refillable. Empty container retains product residue. Triple rinse, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

## SECTION – 14 : TRANSPORT INFORMATION

### Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL  
Not Regulated.

## SECTION – 15: REGULATORY INFORMATION

### WHMIS classification for product: Exempt

**A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.**

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 25509

## SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

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