

GRADUATE®

Date: 3/20/2015
Replaces: 5/22/2012

1. PRODUCT IDENTIFICATION

Product identifier on label: **GRADUATE®**
Product No.: A7850D
Use: Fungicide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Eye Damage/Irritation: Category 2B
Carcinogenicity: Category 1A
Specific Target Organ Toxicity: Repeated Category 1

Signal Word (OSHA): Danger

Hazard Statements: Causes eye irritation
May cause cancer
Causes damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing, eye protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If exposed or concerned: Get medical advice/attention.
Get medical advice if you feel unwell.
If eye irritation persists: Get medical advice.
Store locked up.
Dispose of contents and container in accordance with local regulations.

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Other Hazard Statements: May form combustible dust concentrations in air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Crystalline Silica, Quartz and Cristobalite	Crystalline Silica, Quartz and Cristobalite	14808-60-7	Trade Secret
Talc	Talc	14807-96-6	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<50%
4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile	Fludioxonil	131341-86-1	50%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Eye irritation

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

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

See also Sec. 7.

Special protective equipment and precautions for firefighters:

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.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:
 Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

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 Section 8. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

This material would not normally become readily charged.

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.

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Crystalline Silica, Quartz and Cristobalite	10 mg/m ³ /(%SiO ₂ +2) (respirable dust)	0.025 mg/m ³ (respirable silica)	0.05 mg/m ³ (respirable dust)	NIOSH
Talc	20 mppcf (containing <1% quartz) TWA	2 mg/m ³ (respirable; <1% crystalline silica) TWA	2 mg/m ³ (respirable; <1% quartz) TWA	NIOSH
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fludioxonil	Not Established	Not Established	5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

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Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use dust-proof chemical goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use NIOSH certified 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-white powder

Odor: Sweet, soap-like

Odor Threshold: Not Available

pH: 8 - 9 (1% solution in H₂O @ 77°F (25°C))

Melting point/freezing point: 392 °F

Initial boiling point and boiling range: Not Applicable

Flash Point (Test Method): Not Applicable

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Fludioxonil 2.9 x 10⁽⁻⁹⁾ mmHg @ 77°F (25°C)

Vapor Density: Not Available

Relative Density: 0.37 g/cm³

Solubility (ies): Fludioxonil 1.8 mg/l @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: None known.

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Incompatible materials: None known.

Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Eye irritation

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Rat) :	> 5050 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) :	> 2020 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 6.5 mg/l air - 4 hours
Eye Contact:	Slightly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Fludioxonil: Delayed development at doses causing maternal toxicity.

Chronic/Subchronic Toxicity Studies

Fludioxonil: Liver and kidney toxicity at high dose levels.

Carcinogenicity

Fludioxonil: Marginal increase (7%) of liver tumors (female, rats: 3,000 ppm); Within historical control range (1 to 10%).

Chemical Name	NTP/IARC/OSHA Carcinogen
Crystalline Silica, Quartz and Cristobalite	IARC 1; ACGIH A2
Talc	IARC Group 3
Other ingredients	No
4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile	No

Other Toxicity Information

None

Toxicity of Other Components

Crystalline Silica, Quartz and Cristobalite

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Other ingredients

Not Applicable

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Talc
 Limited potential for respiratory disease.

Target Organs

Active Ingredients

Fludioxonil: Liver, kidney

Inert Ingredients

Crystalline Silica, Quartz and Respiratory tract
 Cristobalite:

Other ingredients: Not Applicable

Talc: Respiratory tract

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Fludioxonil:

Fish (Rainbow Trout) 96-hour LC50 0.47 ppm
 Green Algae 5-day EC50 0.087 ppm
 Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.9 ppm
 Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

Environmental Fate

Fludioxonil:

The information presented here is for the active ingredient, fludioxonil.
 Does not bioaccumulate. Persistent in soil. Stable in water. Low mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
 Not regulated

Comments

Water Transport - International
 Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Fludioxonil), Marine Pollutant
 Hazard Class: Class 9
 Identification Number: UN 3077
 Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Fludioxonil)
 Hazard Class: Class 9

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Identification Number: UN 3077
Packing Group: PG III

15. REGULATORY INFORMATION

Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

EPA Registration Number(s):
100-969

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: None

CERCLA/SARA 304 Reportable Quantity (RQ):
None

RCRA Hazardous Waste Classification (40 CFR 261):
Not Applicable

TSCA Status:
Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 1
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2*
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: B,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 3/30/2004
Revision Date: 3/20/2015
Section(s) Revised: 1-16

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