MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **HERITAGE FUNGICIDE** Product No.: A12704A

EPA Signal Word: Caution

Active Ingredient(%): Azoxystrobin Technical (50.0%) CAS No.: 131860-33-8

Chemical Name: Methyl (E)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate

Chemical Class: A beta-methyoxyacrylate fungicide

EPA Registration Number(s): 100-1093 (formerly 10182-408) **Section(s) Revised: 3, 5, 7, 16**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Crystalline Silica, Quartz	10 mg/m³/(%SiO2+2) (respirable dust)	0.1 mg/m³ (respirable silica)	Not Established	IARC Group 2A
Kaolin Clay	15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable dust)	2 mg/m³ TWA (respirable dust)	10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable dust**	No
Azoxystrobin Technical (50.0%)	Not Established	Not Established	2 mg/m³ TWA ***	No

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

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

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Causes moderate eye irritation. Dust may be irritating to nose and throat.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Beige to brown granules

Odor: No characteristic odor

Unusual Fire, Explosion and Reactivity Hazards

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 vapors should be avoided. This product has a minimum ignition energy between 3 and 10 millijoules. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 707°F [375°C]) can serve as ignition sources for this material.

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

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison contol 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. Have the person sip a glass of water if able to swallow. 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.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

Asthma or other respiratory conditions aggravated by chemical irritants.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method):	Not Applicable	
Flammable Limits (% in Air):	Lower: % Not Applicable	Upper: % Not Applicable
Autoignition Temperature:	Not Available	
Flammability:	Not flammable	

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In Case of Fire

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

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into 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

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.

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 discharged from the bag.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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

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 chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Skin Contact:	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:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Beige to brown granules
Odor:	No characteristic odor
Melting Point:	237.2 - 240.8°F
Boiling Point:	Not Available
Specific Gravity/Density:	31.2 - 43.7 lbs./cu.ft.
pH:	5 - 8

Solubility in H2O

Azoxystrobin Technical:	6 mg/l in water @ 68°F (20°C)

Vapor Pressure

Azoxystrobin Technical:	8.25 x 10(-13) mmHg @ 68°F(20°C)

10. STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	See "Unusual Fire, Explosion and Reactivity Hazards" statement, Section 5.
Materials to Avoid:	Oxidizing agents.
Hazardous Decomposition Products:	Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	Practically Non-Toxic	
	Oral (LD50 Rat) :	> 5,000 mg/kg body weight
Dermal:	Slightly Toxic	
	Dermal (LD50 Rat) :	> 2,000 mg/kg body weight
Inhalation:	Moderately Toxic	

	Inhalation (LC50 Rat) : > 4.67 mg/l air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)
Skin Contact:	Slightly Irritating (Rabbit)
Skin Sensitization:	Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

Azoxystrobin Technical: Shows weak chromosomal damage in mammalian cells at cytotoxic levels. Negative in whole animal assays for chromosomal and DNA damage at high dosages (> or = 2,000 mg/kg). In rabbits, no effect was observed up to the highest dose level (500 mg/kg/day). In rats, developmental effects were seen only at maternally toxic doses (100 mg/kg/day).

Chronic/Subchronic Toxicity Studies

Azoxystrobin Technical: In a rat 90-day feeding study, liver toxicity was observed at 2,000 ppm. This was manifest as gross distension of the bile duct, increased numbers of lining cells and inflammation of the duct. No toxicologically significant effects were seen in repeat dose dog studies.
Data reviews do not indicate any potential for endocrine disruption.
There is no evidence of neurotoxicity in any of the studies conducted with azoxystrobin.

Carcinogenicity

Azoxystrobin Technical: No carcinogenic effects observed in rats or mice at doses up to the maximum tolerated dose.

Other Toxicity Information

The active ingredient in this formulation is Azoxystrobin Technical. Azoxystrobin Technical administered to pregnant rats even at doses which induced maternal toxicity did not induce birth defects. A study in rabbits using repeated doses showed no effects on the fetus despite the induction of maternal toxicity. The no-observed effect for developmental effects in the rabbit was 500 mg/kg/day, and 100 mg/kg/day in the rat. A multi-generation reproductive performance study in rats with Azoxystrobin Technical showed no-observed effect at 300 ppm in the diet. This equates to a dose level of 33 mg/kg/day.

Toxicity of Other Components

Crystalline Silica, Quartz

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.

Kaolin Clay

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

Target Organs

Active Ingredients

Azoxystrobin Technical:	Liver

Inert Ingredients

Crystalline Silica, Quartz:	Respiratory tract
Kaolin Clay:	Lung

12. ECOLOGICAL INFORMATION

Summary of Effects

Azoxystrobin Technical:

Toxic to fish.

Eco-Acute Toxicity

Azoxystrobin Technical: Daphnia magna EC50 259 ppb
Bluegill Sunfish LC50 1.1 ppm

Eco-Chronic Toxicity

Azoxystrobin Technical: Not Available

Environmental Fate

Azoxystrobin Technical:

No data available for the formulation. The information presented here is for the active ingredient, azoxystrobin. A thorough review of environmental information is not possible in this document.
Typical DT50 (lab.) 8-12 w. In soil, in the dark, six identified metabolites were formed; over 1 y. 45% of applied radiolabel is evolved as CO2. Dissipation in the field is faster, DT50 1-8 w. On soil, photolysis DT50 11 d. Azoxystrobin and its degradates have low to moderate mobility in soil; typical Koc for azoxystrobin c. 500. Field dissipation studies showed that neither azoxystrobin nor its major degradates were typically found in soil below the top 15 cm.

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

Not regulated by DOT.

B/L Freight Classification

Fungicides, NOI, O/T Toxic

Comments

International Transportation:
Environmentally Hazardous Substance, Solid, N.O.S. (azoxystrobin), Class 9, UN3077, PGIII, Marine Pollutant

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 302 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		HMIS Hazard Ratings	
Health:	1	Health:	1
Flammability:	3	Flammability:	3
Instability:	0	Reactivity:	0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : SCP-955-00332D

End of MSDS