SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: **Azaka™ Fungicide**
EPA Reg. No. 67760-124

Product use: Fungicide.

Supplier's name and address:

Cheminova Inc.
P.O. Box 110566
One Park Drive, Suite 400
Research Triangle Park, NC 27709
USA
Phone #: (919) 474-6600 (8 AM to 5:00 PM EST, Monday to Friday)

Manufacturer's name and address:

Refer to supplier.

Emergency Telephone #: 1-866-303-6950 (Medical Emergencies)
1-800-424-9300 (24 Hr. Chemtrec Number)

SDS Prepared by: Cheminova Inc.
SDS Preparation date: September 9, 2013

SECTION 2 — HAZARDS IDENTIFICATION

GHS Signal Word:
Warning

Classification:

Health	Environmental	Physical
Not applicable	Aquatic Toxicity – Acute 1 Aquatic Toxicity – Chronic 1	Not applicable

GHS Pictogram:

Hazard Statements:
Very toxic to aquatic life.

Precautionary Statements:
Very toxic to aquatic life with long lasting effects.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (weight)	ACGIH TLV	OSHA PEL
Azoxystrobin (methyl (E)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate))	131860-33-8	23	NE	NE
Inert ingredients:				
Propylene glycol	57-55-6	10	NE	NE
Sodium alkylnaphthalene sulphonate-formaldehyde condensate	577773-56-9	4	NE	NE
Bentonite	1302-78-9	1	NE	NE

NE= None established

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 4 — FIRST AID MEASURES

IF ON SKIN OR CLOTHING:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.
IF SWALLOWED:	Immediately call a poison control center or doctor. Do not induce vomiting unless told to by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
IF IN EYES:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call poison control center or doctor for treatment advice.
IF INHALED:	Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also contact 1-866-303-6950 for emergency medical treatment information.

Most important symptoms and effects, both acute and delayed: Primarily irritation.

Indication of any immediate medical attention and special treatment needed: Immediate medical attention is required in case of ingestion.

Symptoms and effects, acute and delayed: Inhalation may result in difficulty breathing. Ingestion may cause diarrhea. Eye contact may cause irritation.

SECTION 5 — FIRE FIGHTING MEASURES

Flash point (Method): 315° F (157° C)
Flammable limits (% by volume): Not applicable
Explosive properties: Not explosive
Suitable extinguishing media: Small fires: dry chemical, carbon dioxide. Large fires: water spray or foam. Avoid heavy hose streams.
Special fire-fighting procedures/equipment: Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Fire fighters should wear self-contained breathing apparatus and protective clothing.
Special hazards arising from the substance or mixture: The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen cyanide, sulphur dioxide, carbon monoxide and carbon dioxide.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Observe all protection and safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill, this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, protective gloves and rubber boots. See Section 8, Personal Protection. Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Avoid and reduce vapour or mist formation as much as possible.
Environmental precautions: Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.
Spill response/Cleanup: If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Collect contaminated absorbent in suitable containers. Clean area with much water and detergent. Absorb wash liquid onto absorbent as well and transfer to suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and placed in suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Refer to Section 13 for disposal.

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: Avoid contact with eyes, skin or clothing. Avoid breathing vapor or mist. Adequate ventilation or local exhaust ventilation is required. working area. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Storage recommendations: The product is stable under normal conditions of warehouse storage. Store unused product in original container in a cool, dry, secure area. Protect from frost and extreme heat.
Storage temperature: 41 – 86° F (5 – 30° C).

Other information: Store in tightly closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorized persons or children. Do not contaminate water, food or feed by storage or disposal. See Section 13 for disposal.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: If handled indoors, provide mechanical exhaust ventilation to minimize concentrations.
Protective gloves: Wear chemical-resistant gloves: polyvinyl chloride, nitrile rubber, or butyl rubber.
Eye protection: Wear protective eyewear, such as safety glasses or chemical goggles.
Other protective equipment: Wear long-sleeved shirt and long pants, shoes and socks.
Permissible exposure levels: See Section 3.

General hygiene considerations: Follow manufacturer's instructions for cleaning and maintaining PPE. If not such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Exposure limits: See Section 3 – Composition/Information on Ingredients.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light brown liquid
Odor: Weak, ammonia-like
Odor threshold: ND
pH: Undiluted: 7.7 at 20° C
1% solution in water: 6.4 – 6.7 at 20° C
Melting point: ND
Freezing point: ND
Initial boiling point and boiling range: ND
Flash point: 315° F (157° C)
Evaporation rate: ND
Flammability: NA
Upper/lower flammability or explosive limits: NA
Vapor pressure: **Azoxystrobin:** 1.107×10^{-10} Pa @ 20° C
Vapor density: ND
Relative density: ND; Density: 1.10 g/mL
Solubility(ies): **Azoxystrobin:** 6.7 mg/l at pH 7 water
Low solubility in hexane, n-octanol
Moderate solubility in methanol, toluene, acetone
High solubility in ethyl acetate, acetonitrile, dichloromethane
Partition coefficient (n-octanol/water): **Azoxystrobin:** $\log_{Kow} = 2.5$ at 20° C
Auto-ignition temperature: >400° C, if any
Decomposition temperature: ND
Viscosity: Non-newtonian fluid: viscosity is dependent on shear rate.
Shear rate 0.1 /s:> 10000 mPa.s
Shear rate 50/s: > 50 mPa.s
ND: Not determined

NA: Not applicable

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: To our knowledge, the product has no special reactivities. The product is stable during normal handling and storage at ambient temperatures.

Hazardous polymerization: Not known to occur.

Conditions to avoid: Heating of the product will produce harmful and irritant vapors.

Materials to avoid (incompatibles): None known.

Hazardous decomposition products in a fire: The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen cyanide, sulphur dioxide, carbon monoxide and carbon dioxide.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Skin contact, eye contact, inhalation, ingestion.

Acute toxicity: This product is not considered as harmful by ingestion, skin contact or by inhalation. However, since the active ingredient azoxystrobin is toxic by inhalation, this product may become hazardous when a finely divided mist is producted. The acute toxicity of the product is measured as:

Toxicological data:

LC_{50}, inhalation (mg/L/4 hrs) = >2.33 (4-hrs)
LD_{50}, oral, (mg/kg) = >2000
LD_{50}, dermal, (mg/kg) = >2000
Not irritating to eyes
Mildly irritating to skin
Not a skin sensitizer

Carcinogenicity, teratogenicity, mutagenicity, other reproductive effects: No known carcinogenic, teratogenic, mutagenic or reproductive effects.

SECTION 12 — ECOLOGICAL INFORMATION

Environmental hazards: This product is toxic to freshwater and estuarine/marine fish and aquatic invertebrates. Do not apply directly to water except as specified in the label or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate. Azoxystrobin has degradation properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Ecotoxicological information: The ecotoxicity measured on the active ingredient is:

Azoxystrobin:

Fish – 96-hr LC_{50}, Rainbow trout *(Oncorhynchus mykiss)* = 1.91 mg/l
Invertebrates – 48-hr EC_{50}, Daphnids *(Daphnia magna)* = 1.91 mg/l
Algae – 72-hr EC_{50}, Diatoms *(Navicula pelliculosa)* = 3.10 mg/l
Plants – 7-day EC_{50}, Duckweed (*Lemna gibba*) = 15.4 mg/l
Earthworms – 14-day LD_{50}, *Eisenia foetida foetida* = >1000 mg/kg dry soil
Bees – 48-hr LD_{50}, Honey bees (*Apis melliflora*), contact = >432 µg/bee
48-hr LD_{50}, Honey bees (*Apis melliflora*), oral = >519 µg/bee

Mobility: Under normal conditions **azoxystrobin** has low to moderate mobility in soil.

Persistence and degradability: Azoxystrobin does not meet the criteria for being readily biodegradable, but it is degraded in the environment. Degradation

Bioaccumulative potential: Bioaccumulation of **azoxystrobin** is not expected. See Section 9: Physical and Chemical Properties for octanol-water partition coefficient.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: To avoid wastes, use all material by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program.

Methods of disposal: Do not contaminate water, food, or feed by storage or disposal. Refer to product label for specific container disposal instructions.

SECTION 14 — TRANSPORTATION INFORMATION

US DOT 49 CFR information:

This material is not regulated for transport.

INTERNATIONAL:

IMDG/IMO (vessel): UN3082, Environmentally hazardous substance, liquid, n.o.s. (azoxystrobin), 9, PGIII, Marine Pollutant

IATA/ICAO (air): UN3082, Environmentally hazardous substance, liquid, n.o.s. (azoxystrobin), 9, PGIII, Marine Pollutant

SECTION 15 — REGULATORY INFORMATION

FIFRA: 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 on non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION
Harmful if absorbed through skin.
Harmful if swallowed.
Causes moderate eye irritation.
Avoid contact with skin, eyes 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.
This pesticide is toxic to freshwater and estuarine/marine fish and aquatic invertebrates.

EPA/CERCLA Reportable Quantity (RQ): Not applicable

SARA TITLE III:

Sec. 302, Extremely Hazardous Substance Notification: This material is not known to contain any Extremely Hazardous Substances.
Sec. 311/312, Hazard Categories: Immediate (acute) health hazard
Sec. 313, Toxic Chemicals Notification: Not applicable

California Proposition 65: Not applicable

SECTION 16 — OTHER INFORMATION

HMIS Rating: 1 Health; 0 Flammability; 0 Reactivity
NFPA Rating: 1 Health; 0 Flammability; 0 Reactivity
0-minimal 1- slight 2-moderate 3-severe 4-extreme

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