1. IDENTIFICATION

Product name:	**MANA Azoxystrobin 250 (PCP Reg. No.: 30489)**
Chemical name of active ingredient(s):	Azoxystrobin: Methyl (*E*)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate
Manufacturer:	Makhteshim Agan of North America, Inc. 3120 Highwoods Boulevard, Suite 100 Raleigh, NC 27604 Phone: 1-919-256-9300
For fire, spill, and/or leak emergencies, contact Infotrac:	Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA/PEL	ACIGH/TLV	OTHER	NTP/IARC/OSHA (Carcinogenicity)
Azoxystrobin	131860-33-8	22.9	NA	NA	NA	NA
Propylene Glycol	57-55-6		NE	NE	NE	NA
Bentonite			15 mg/m^3 (TWA)(total) 5 mg/m^3 (TWA) (respirable)	10 mg/m^3 TWA (total); 3 mg/mg^3 TWA (respirable)	NE	NA

NA=Not applicable; NE: Not Established

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES:

Appearance: Off-white to yellow-orange suspension
Odor: Not determined

EMERGENCY OVERVIEW: Keep out of reach of children. May irritate eyes. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Wash with soap and water after handling, and before eating, drinking or smoking. Wash contaminated clothing, separately from household laundry, before re-use. Do not wear contaminated shoes.

SYMPTOMS OF ACUTE EXPOSURE: May cause eye irritation.

HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED: None known.

4. FIRST AID MEASURES

FIRST AID

IN CASE OF POISONING, contact a physician or a poison control centre immediately. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed: Call a poison control centre or doctor IMMEDIATELY for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin IMMEDIATELY with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

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 a poison control centre or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to mouth, if possible. Call a poison control centre or doctor for further treatment advice.

TOXICOLOGICAL INFORMATION: No specific symptoms of poisoning are known for this product. If ingested, nausea, vomiting, diarrhea and abdominal pain may occur. Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable.
FLAMMABLE LIMITS: LFL/UFL: Not applicable.
EXTINGUISHING MEDIA: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet).

FIRE & EXPLOSION HAZARDS: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion, including carbon monoxide and carbon dioxide.

FIRE-FIGHTING PROCEDURES: 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.

HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear appropriate protective equipment (gloves, glasses, apron) when attempting to clean up the spill. If the container is leaking, secure leak and place the container into a drum or heavy gauge plastic bag.

PROCEDURES FOR DEALING WITH RELEASE OR SPILL: For spills and leaks - contain the liquid with dikes of inert material (soil, clay, kitty litter, etc.). Absorb the spill onto inert material and shovel into a sealable waste container. On hard surfaces - sprinkle spill area with detergent and scrub in a small quantity of water with a coarse broom. Let stand 10 minutes then absorb onto an inert material and shovel into the waste container. On soil - remove the top 15 cm of soil in the spill area and replace with fresh soil. Dispose of all waste including scrub brush in accordance with provincial requirements.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours or spray mist. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics 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.

PRECAUTIONS TO BE TAKEN IN STORAGE: 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.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperature.

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.

EYE PROTECTION: Protective eyewear. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

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

HAND PROTECTION: Chemical-resistant gloves, such as barrier laminate, nitrile rubber, neoprene rubber, or Viton.

RESPIRATOR REQUIREMENTS: 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.

ADDITIONAL PROTECTIVE MEASURES: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.
ENGINEERING CONTROLS: Use adequate ventilation to minimize airborne concentrations of this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off-white to yellow-orange suspension.
FORMULATION TYPE: Suspension concentrate.
ODOUR: Not determined.
pH: 7.
VAPOUR PRESSURE AND REFERENCE TEMPERATURE: 8.25×10^{-13} mmHg @ 20ºC (Azoxystrobin Technical).
VAPOUR DENSITY: Not available.
BOILING POINT: Not available.
MELTING POINT: Not applicable.
FREEZING POINT: -7 ºC.
SPECIFIC GRAVITY OR DENSITY: 1.096 g/mL.
EVAPORATION RATE: Not available.
WATER/OIL PARTITION COEFFICIENT: log Kow = 2.5 (Azoxystrobin Technical).
VISCOSITY: 1444 mPas (or cps) @ RT.
SOLUBILITY IN WATER: 6 mg/L @ 20ºC (Azoxystrobin Technical).

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and storage conditions.
CONDITIONS TO AVOID: None known.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD50 (Rat): > 5,000 mg/kg
Acute Dermal LD50 (Rabbit): > 4,000 mg/kg
Acute Inhalation LC50 (Rat): > 6.32 mg/L (4 hrs.)
Eye Irritation (Rabbit): Mildly irritating
Skin Irritation (Rabbit): Non-irritating
Dermal Sensitization (Guinea Pig): Not a contact sensitizer

Reproductive/Developmental Effects:

Azoxystrobin: Shows weak chromosomal damage in mammalian cells at cytotoxic levels. Negative in whole animal assays for chromosomal and DNA damage at high dosages (≥ 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: In a rat 90-day feeding study, liver toxicity was observed at 2,000 ppm. This was manifest asgross 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: No carcinogenic effects observed in rats or mice at doses up to the maximum tolerated dose.

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.

Bentonite:

Test results reported in Section 11 for the final product take into account any acute hazards related to the bentonite in the formulation.

Propylene Glycol:

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Chronic dietary exposure caused kidney and liver injury in experimental animals.

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

Target Organs:

Active Ingredient:
Azoxystrobin: Liver.

Inert Ingredients:
Bentonite: Not applicable.
Propylene Glycol: CNS. Kidney, liver.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: The active ingredient, azoxystrobin, is practically nontoxic to insects and birds, but is highly toxic to moderately to highly toxic to fish and aquatic invertebrates.

ECO-ACUTE TOXICITY:
Azoxystrobin:
Green Algae 5-day EC_{50} : 106 ppb
Invertebrates (*Daphnia magna*) 48-hour $EC_{50:}$ 259 ppb
Fish (Rainbow Trout) 96-hour LC_{50}: 470 ppb
Birds (Mallard Duck) 14-day LC_{50}: > 250 mg/kg body weight

ENVIRONMENTAL FATE: The active ingredient, azoxystrobin, has a low bioaccumulation potential, low to moderate mobility in soil, but is moderately persistent to persistent in soil or water. The dissipation half-life in soil is 54 - 135 days and in water it is 187 - 239 days. Under field conditions the half-life in soil is 14 days. The main routes of degradation are by microbial degradation, hydrolysis, and formation of bound residues.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

CONTAINER DISPOSAL: Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site: triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank. Make the empty, rinsed container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

14. TRANSPORT INFORMATION

Shipping information such as shipping classification:
TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated.

15. REGULATORY INFORMATION

CANADIAN REGULATIONS:
This product is exempt from the requirements of WHMIS and is registered under the *Pest Control Product Act*. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SARA TITLE III CLASSIFICATION:
Section 302: Not applicable.
Section 311/312: Acute health hazard (immediate)
Section 313: Not applicable

CA PROPOSITION 65: Not applicable
CERCLA RQ: Not applicable
RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	1	1	0	MINIMAL
FLAMMABILITY:	1	1	1	SLIGHT
REACTIVITY:	0	0	2	MODERATE
			3	HIGH
			4	SEVERE

MSDS DATE: 4-10-12

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.