

## HEADWAY®

Date: 6/25/2015  
Replaces: 11/4/2014

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **HEADWAY®**  
Product No.: A14212C  
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: Flammable Liquid: Category 4  
Eye Damage/Irritation: Category 2B  
Reproductive Toxicity: Category 1B

Signal Word (OSHA): Warning

Hazard Statements: Combustible liquid  
Causes eye irritation  
May damage fertility or the unborn child

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Wash hands and face thoroughly after handling.  
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.  
If eye irritation persists: Get medical advice.  
Keep away from heat, sparks, open flames, hot surfaces. No smoking.  
Wear protective gloves, protective clothing, eye protection.  
In case of fire: Use dry chemical, foam or CO2 for extinction.  
Store in a well-ventilated place. Keep cool.  
Store locked up.  
Dispose of contents and container in accordance with local regulations.

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Other Hazard Statements: None

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	Common Name	CAS Number	Concentration
Tetrahydrofurfuryl Alcohol (THFA)	Tetrahydrofurfuryl Alcohol (THFA)	97-99-4	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<84.73%
Methyl (E)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate	Azoxystrobin	131860-33-8	5.73%
1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole	Propiconazole	60207-90-1	9.54%

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:

Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back.

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

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 in Protective Equipment Section. 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

Precautions for safe handling:

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
Tetrahydrofurfuryl Alcohol (THFA)	Not Established	Not Established	0.5 ppm TWA	AIHA
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Azoxystrobin	Not Established	Not Established	4 mg/m <sup>3</sup> TWA	Syngenta
Propiconazole	Not Established	Not Established	5 mg/m <sup>3</sup> TWA	Syngenta

#### Appropriate engineering controls:

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

#### Individual protection measures:

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 gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC) or Viton), coveralls, socks and chemical-resistant footwear.

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**Inhalation:**

A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any 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.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Amber liquid  
Odor: Ether  
Odor Threshold: Not Available  
pH: 6.0 @ 77°F (25°C)  
Melting point/freezing point: Not Available  
Initial boiling point and boiling range: Not Available  
Flash Point (Test Method): ~172°F  
Flammable Limits (% in Air): Not Available  
Flammability: Combustible liquid  
Vapor Pressure: Azoxystrobin 8.25 x 10<sup>-13</sup> mmHg @ 68°F (20°C)  
Propiconazole 4.2 x 10<sup>-7</sup> mmHg @ 77°F (25°C)  
Vapor Density: Not Available  
Relative Density: 9.09 lbs/gal @ 68°F (20°C)  
Solubility (ies): Azoxystrobin 6 mg/l in water @ 68°F (20°C)  
Propiconazole 0.1 g/l @ 68°F (20°C)  
Partition coefficient: n-octanol/water: Not Available  
Autoignition Temperature: ~509°F  
Decomposition Temperature: Not Available  
Viscosity: Not Available  
Other: None

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**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.  
Incompatible materials: None known.  
Hazardous Decomposition Products: Not Available

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**11. TOXICOLOGICAL INFORMATION**

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation

Delayed, immediate and chronic effects of exposure: Eye irritation

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

Ingestion:	Oral (LD50 Rat) :	Not Available
Dermal:	Dermal (LD50 Rat) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.68 mg/l air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)	
Skin Contact:	Non-Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Azoxystrobin : Did not show reproductive toxicity effects in animal experiments.

Propiconazole: None observed.

Chronic/Subchronic Toxicity Studies

Azoxystrobin : No adverse effect has been observed in chronic toxicity tests.

Propiconazole: None observed.

Carcinogenicity

Azoxystrobin : Did not show carcinogenic effects in animal experiments.

Propiconazole: Increased hepatocellular adenomas, combined adenomas/carcinomas, and hepatocellular carcinomas observed in male mice in a chronic oral feeding study. However, animals in the high dose group for this study showed excessive toxicity; furthermore, the high dose exceeded the Maximum Tolerated Dose determined in the 90-day range finding study. No treatment-related tumors were seen in female mice in this mouse chronic feeding study. No tumors were noted in a chronic rat study.

Chemical Name	NTP/IARC/OSHA Carcinogen
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Tetrahydrofurfuryl Alcohol (THFA)	No
Other ingredients	No
Methyl (E)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate	No
1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole	No

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients  
 Not Applicable

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### Tetrahydrofurfuryl Alcohol (THFA)

May be harmful if swallowed. Causes respiratory tract irritation. Causes skin irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

### Target Organs

#### Active Ingredients

Azoxystrobin : Liver  
 Propiconazole: Liver

#### Inert Ingredients

Other ingredients: Not Applicable  
 Tetrahydrofurfuryl Alcohol (THFA): Digestive tract, respiratory tract, skin, eye, CNS, kidney

## 12. ECOLOGICAL INFORMATION

### Eco-Acute Toxicity

#### Azoxystrobin :

Fish (Rainbow Trout) 96-hour LC50 470 ppb  
 Green Algae 5-day EC50 106 ppb  
 Invertebrate (Water Flea) 48-hour EC50 259 ppb  
 Bird (Mallard Duck) 14-day LD50 > 250 mg/kg

#### Propiconazole:

Fish (Rainbow Trout) 96-hour LC50 0.83 ppm  
 Invertebrate (Water Flea) 48-hour EC50 3.2 ppm  
 Green Algae 9-day EC50 0.72 ppm  
 Bird (Mallard Duck) 14-day LD50 2510 mg/kg

### Environmental Fate

#### Azoxystrobin :

The information presented here is for the active ingredient, azoxystrobin.  
 Low bioaccumulation potential. Not persistent in soil. Stable in water. Moderate mobility in soil. Sinks in water (after 24 h).

#### Propiconazole:

The information presented here is for the active ingredient, propiconazole.  
 Low bioaccumulation potential. Not 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

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### 14. TRANSPORT INFORMATION

#### DOT Classification

Ground Transport - NAFTA  
Not regulated

#### Comments

Water Transport - International  
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Azoxystrobin/Propiconazole), Marine Pollutant

Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

#### Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Azoxystrobin/Propiconazole)

Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

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### 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 swallowed. Harmful if absorbed through skin. Harmful if inhaled. 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.

#### EPA Registration Number(s):

100-1216

#### EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: Propiconazole 9.54% (CAS No. 60207-90-1)

#### California Proposition 65:

This product does not contain chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

#### CERCLA/SARA 304 Reportable Quantity (RQ):

None

#### RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

#### TSCA Status:

Exempt from TSCA, subject to FIFRA

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### 16. OTHER INFORMATION

#### NFPA Hazard Ratings

Health: 2  
Flammability: 2  
Instability: 0

#### HMIS Hazard Ratings

Health: 2  
Flammability: 2  
Reactivity: 0

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

Syngenta Hazard Category: D,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 11/9/2004

Revision Date: 6/25/2015

Replaces: 11/4/2014

Section(s) Revised: 2, 4, 11, 16

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.