

## AXIAL® STAR HERBICIDE

Date: 7/15/2015  
Replaces: 3/4/2015

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **AXIAL® STAR HERBICIDE**

Product No.: A17712C

Use: Herbicide

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: Skin Corrosion/Irritation: Category 2  
Skin Sensitizer: Category 1B  
Reproductive Toxicity: Category 2  
Specific Target Organ Toxicity: Repeated Category 2  
Specific Target Organ Toxicity: Respiratory Irritation Category 3  
Aspiration Hazard: Category 1  
Flammable Liquid: Category 4  
Eye Damage/Irritation: Category 2B

Signal Word (OSHA): Danger

Hazard Statements: Combustible liquid  
May be fatal if swallowed and enters airways  
Causes skin irritation  
May cause an allergic skin reaction  
Causes eye irritation  
May cause respiratory irritation  
Suspected of damaging fertility or the unborn child (state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)  
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



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Precautionary Statements: Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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.

Do not breathe mist, vapors, spray.

Wash hands and face thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection.

If swallowed: Immediately call a poison center, doctor or Syngenta.

If on skin: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Call a poison center, doctor or Syngenta if you feel unwell.

See Section 4 First Aid Measures.

Do NOT induce vomiting.

Take off contaminated clothing and wash it before reuse.

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.

Other Hazard Statements: None

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	Common Name	CAS Number	Concentration
Tetrahydrofurfuryl Alcohol	Tetrahydrofurfuryl Alcohol	97-99-4	Trade Secret
Petroleum Solvent	Petroleum Solvent	68477-31-6	Trade Secret
Cloquintocet-Mexyl	Cloquintocet-Mexyl	99607-70-2	<2.0%
Other ingredients	Other ingredients	Trade Secret	80.7%
Propanoic acid, 2,2-dimethyl-8-(2,6-diethyl-4-methylphenyl)-1,2,4,5-tetrahydro-7-oxo-7H-pyrazolo[1,2-d][1,4,5]oxadiazepin-9-yl ester	Pinoxaden	243973-20-8	4.9%
4-Amino-3,5-Dichloro-6-Fluoro-2-Pyridyloxyacetic Acid	Fluroxypyr	69377-81-7	12.4%

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

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### 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
- Skin irritation
- Allergic skin reaction
- Respiratory irritation

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

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### 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 outlined in Section 8. Cover

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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	Not Established	Not Established	0.5 ppm TWA	AIHA
Petroleum Solvent	Not Established	Not Established	100 mg/m <sup>3</sup> (17 ppm)	Manufacturer
Cloquintocet-Mexyl	Not Established	Not Established	5 mg/m <sup>3</sup> TWA	Syngenta
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Pinoxaden	Not Established	Not Established	0.1 mg/m <sup>3</sup> (ceiling)	Syngenta
Fluroxypyr	Not Established	Not Established	Not Established	Not Applicable

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 or Viton), coveralls, socks and chemical-resistant footwear.

**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 certified respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

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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: Light gold liquid  
Odor: Aromatic  
Odor Threshold: Not Available  
pH: 6.1 (1% solution in deionized H<sub>2</sub>O @ 77°F [25°C])  
Melting point/freezing point: Not Available  
Initial boiling point and boiling range: Not Available  
Flash Point (Test Method): 183°F (Pensky-Martens CC)  
Flammable Limits (% in Air): Not Available  
Flammability: Combustible liquid  
Vapor Pressure: Fluroxypyr 2.8 x 10<sup>-11</sup> mmHg @ 68°F (20°C)  
Pinoxaden 3.5 x 10<sup>-9</sup> mmHg @ 77°F (25°C)  
Vapor Density: Not Available  
Relative Density: 1.014 g/cm<sup>3</sup> @ 68°F (20°C)  
Solubility (ies): Fluroxypyr 91 mg/l  
Pinoxaden 200 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: Not Available  
Incompatible materials: None known.  
Hazardous Decomposition Products: Not Available

### 11. TOXICOLOGICAL INFORMATION

#### Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Skin irritation, Respiratory irritation

Delayed, immediate and chronic effects of exposure: Eye irritation, Skin irritation, Allergic skin reaction, Respiratory irritation

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

Ingestion: Oral (LD50 Female Rat) : > 5000 mg/kg body weight  
Dermal: Dermal (LD50 Rat) : > 5000 mg/kg body weight  
Inhalation: Inhalation (LC50 Rat) : > 2.54 mg/l air - 4 hours  
Eye Contact: Moderately Irritating (Rabbit)  
Skin Contact: Moderately Irritating (Rabbit)  
Skin Sensitization: Sensitizing (Guinea Pig)

Reproductive/Developmental Effects

Fluroxypyr: In animal studies, has been shown not to interfere with reproduction.  
Teratology (Birth Defects): Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.  
Pinoxaden: Teratogenicity: Not teratogenic in rats or rabbits.  
Reproduction: No reproductive effects observed.

Chronic/Subchronic Toxicity Studies

Fluroxypyr: Not Available  
Pinoxaden: Subchronic: Predominantly kidney and liver effects at high doses.  
Chronic: Predominantly kidney and liver effects at high doses.  
Neurotoxicity: No neurotoxic effects (acute or subchronic).

Carcinogenicity

Fluroxypyr: No indication of carcinogenicity, teratogenicity or mutagenicity.  
Pinoxaden: No compound-related tumors in rats or mice.

Chemical Name	NTP/IARC/OSHA Carcinogen
Tetrahydrofurfuryl Alcohol	No
Petroleum Solvent	No
Cloquintocet-Mexyl	No
Other ingredients	No
Propanoic acid, 2,2-dimethyl-8-(2,6-diethyl-4-methylphenyl)-1,2,4,5-tetrahydro-7-oxo-7H-pyrazolo[1,2-d][1,4,5]oxadiazepin-9-yl ester	No
4-Amino-3,5-Dichloro-6-Fluoro-2-Pyridyloxyacetic Acid	No

Other Toxicity Information

None

Toxicity of Other Components

Cloquintocet-Mexyl  
Causes mild eye and skin irritation. Toxic if inhaled or swallowed. May cause sensitization by skin contact.  
Other ingredients  
Not Applicable

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### Petroleum Solvent

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat and lungs. May cause central nervous system depression.

### Tetrahydrofurfuryl Alcohol

Acute exposure causes slight irritation of the skin. Prolonged exposure may cause mild nervous system effects, liver and kidney damage.

### Target Organs

#### Active Ingredients

Fluroxypyr: Not Available

Pinoxaden: Kidney

#### Inert Ingredients

Cloquintocet-Mexyl: Eye, skin, lung, digestive tract

Other ingredients: Not Applicable

Petroleum Solvent: Skin, eye, respiratory tract, CNS

Tetrahydrofurfuryl Alcohol: Skin, central nervous system, liver, kidney

## 12. ECOLOGICAL INFORMATION

### Eco-Acute Toxicity

#### Pinoxaden:

Fish (Rainbow Trout) 96-hour LC50 10.3 mg/l (Dynamic conditions)

Green Algae 72-hour ErC50 41 mg/l

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 52 mg/l

#### Fluroxypyr:

Bird (Bobwhite Quail) LD50 Oral > 2000 mg/kg

Invertebrate (Water Flea) Daphnia Magna EC50 0.499 mg/l

Fish (Rainbow Trout) LC50 Result is above water solubility

Green Algae EC50 Result is above water solubility

### Environmental Fate

#### Fluroxypyr:

The information presented here is for the active ingredient, fluroxypyr.

In soil, fluroxypyr is rapidly degraded by micro-organisms in aerobic conditions to 4-amino-3,5-dichloro-6-fluoropyridin-2-ol, 4-amino-3,5-dichloro-6-fluoro-2-methoxypyridine, and CO<sub>2</sub>. Laboratory soil studies and field studies demonstrate there is no evidence of any significant leaching.

#### Pinoxaden:

The information presented here is for the active ingredient, pinoxaden.

Compound degrades rapidly in the environment with a DT50 of less than 5 days in field and laboratory studies.

## 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  
Non-bulk containers: Not regulated  
Bulk containers: > 119 gal.  
Proper Shipping Name: Compounds, Weed Killing, Liquid, (Fluroxypyr, Petroleum Solvent)  
Hazard Class: Class 3  
Identification Number: NA 1993  
Packing Group: PG III

#### Comments

Water Transport - International  
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluroxypyr)  
Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

#### Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluroxypyr)  
Hazard Class: Class 9  
Identification Number: UN 3082  
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: Contains petroleum distillate. Avoid contact with skin or clothing. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear long-sleeved shirt and long pants, socks, shoes, and gloves. Avoid contact with eyes or clothing. Wear protective eyewear. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### EPA Registration Number(s):

100-1389

#### EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: None

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

None

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

Not Applicable

#### TSCA Status:

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Exempt from TSCA, subject to FIFRA

### 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: 8/9/2010

Revision Date: 7/15/2015

Replaces: 3/4/2015

Section(s) Revised: 2

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.