

**Syngenta Crop Protection, LLC**  
**Post Office Box 18300**  
**Greensboro, NC 27419**

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

<b>1. PRODUCT IDENTIFICATION</b>
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Product Name:	<b>ZEMAX SELECTIVE HERBICIDE</b>	Product No.: A18263D
EPA Signal Word:	Caution	
Active Ingredient(%):	Mesotrione (3.68%)	CAS No.: 104206-82-8
Chemical Name:	2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione	
Chemical Class:	Benzoylcyclohexanedione Herbicide	
Active Ingredient(%):	s-Metolachlor (36.80%)	CAS No.: 87392-12-9
Chemical Name:	Acetamide, 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)-,(S)	
Chemical Class:	Chloroacetanilide Herbicide	
EPA Registration Number(s):	100-1410	<b>Section(s) Revised: 1</b>

<b>2. HAZARDS IDENTIFICATION</b>
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Health and Environmental

Harmful if inhaled. Causes mild eye and skin irritation.

Hazardous Decomposition Products

Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

Physical Properties

Appearance: Greyish brown liquid  
 Odor: Paint

Unusual Fire, Explosion and Reactivity Hazards

Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

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

<b>3. COMPOSITION/INFORMATION ON INGREDIENTS</b>
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Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Attapulgate Clay	Not Established	Not Established	Not Established	IARC 2B
Propylene Glycol	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ****	No
Benoxacor (1.8%)	Not Established	Not Established	1 mg/m <sup>3</sup> TWA ***	No
s-Metolachlor (36.80%)	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ***	No
Mesotrione (3.68%)	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ***	No

\*\*\* Syngenta Occupational Exposure Limit (OEL)

\*\*\*\* Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
Syngenta Hazard Category: B

#### 4. FIRST AID MEASURES

Have the product container, label or Material 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. 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

None known.

#### 5. FIRE FIGHTING MEASURES

##### Fire and Explosion

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

##### Unusual Fire, Explosion and Reactivity Hazards

Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

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

##### 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 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 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

Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, aluminum, brass or cast iron.

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.

## 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.**

- 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.
- Skin Contact: Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.
- Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Greyish brown liquid
- Odor: Paint
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.095 g/cm<sup>3</sup> @ 68°F (20°C)
- pH: 4.5 (1% solution in deionized H<sub>2</sub>O @ 77°F [25°C])

### Solubility in H<sub>2</sub>O

- Mesotrione : 160 mg/l @ 68°F (20°C) (99.7% pure)
- s-Metolachlor: 0.48 g/l @ 77°F (25°C)

### Vapor Pressure

- Mesotrione : < 4.3 x 10<sup>(-8)</sup> mmHg @ 68°F (20°C)
- s-Metolachlor: 2.8 x 10<sup>(-5)</sup> mmHg @ 77°F (25°C)

## 10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: Concentrate should not be stored in galvanized steel, carbon steel or aluminum. Brass and/or cast iron fittings should not be used. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless or fiberglass/plastic.
- Materials to Avoid: See "Conditions to Avoid", Section 10.
- Hazardous Decomposition Products: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

## 11. TOXICOLOGICAL INFORMATION

#### Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	Oral (LD50 Female Rat) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.65 mg/l air - 4 hours
Eye Contact:	Minimally Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

#### Reproductive/Developmental Effects

Mesotrione : Not a reproductive hazard.  
s-Metolachlor: None observed.

#### Chronic/Subchronic Toxicity Studies

Mesotrione : Animal studies showed evidence of reduced bodyweight gain, increased liver and kidney weights, blood effects (polycythemia, reduced white blood cell count) and eye effects (cataract formation, keratitis).  
No known neurotoxic effects based on animal studies.  
s-Metolachlor: None observed.

#### Carcinogenicity

Mesotrione : Not carcinogenic in animal studies. Not mutagenic.  
s-Metolachlor: Benign liver tumors at high dose levels (female rats).

#### Other Toxicity Information

None

#### Toxicity of Other Components

##### Attapulgate Clay

May cause eye irritation.

##### Benoxacor (1.8%)

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

##### Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.  
Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.  
Chronic dietary exposure caused kidney and liver injury in experimental animals.

#### Target Organs

##### Active Ingredients

Mesotrione : Eye  
s-Metolachlor: Liver

##### Inert Ingredients

Attapulgate Clay: Eye  
Benoxacor: Not Applicable  
Propylene Glycol: CNS, kidney, liver

## **12. ECOLOGICAL INFORMATION**

#### Ecotoxicity Effects

s-Metolachlor:

Fish (Rainbow Trout) 96-hour LC50 11.9 ppm  
Green Algae 5-day EC50 0.008 ppm  
Bird (Bobwhite Quail) LD50 Oral > 2510 mg/kg  
Invertebrate (Water Flea) 48-hour EC50 26 ppm

Mesotrione :

Fish (Rainbow Trout) 96-hour LC50 > 114 ppm  
Green Algae 5-day EC50 1.9 ppm  
Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 840 ppm  
Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

#### Environmental Fate

Mesotrione :

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

s-Metolachlor:

The information presented here is for the active ingredient, s-metolachlor.  
Low bioaccumulation potential. Not persistent in soil. Stable in water. 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

### **14. TRANSPORT INFORMATION**

#### DOT Classification

Ground Transport - NAFTA  
Not regulated.

#### Comments

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

### **15. REGULATORY INFORMATION**

#### EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 304 Reportable Quantity (RQ)

Not Applicable

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

**16. OTHER INFORMATION**

NFPA Hazard Ratings

Health: 2  
Flammability: 1  
Instability: 0

HMIS Hazard Ratings

Health: 1  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 5/17/2011

Revision Date: 12/8/2011

Replaces:

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.

End of MSDS