

## ORION® HERBICIDE

Date: 7/1/2015  
Replaces: 3/5/2015

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **ORION® HERBICIDE**  
Product No.: A15898A  
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  
Signal Word (OSHA): Warning  
Hazard Statements: Causes skin irritation  
May cause an allergic skin reaction

Hazard Symbols:



Precautionary Statements: Contaminated work clothing must not be allowed out of the workplace.  
If skin irritation or rash occurs: Get medical advice.  
Wash contaminated clothing before reuse.  
Avoid breathing mist, vapors, spray.  
Wash hands and face thoroughly after handling.  
Wear protective gloves, protective clothing, eye protection.  
If on skin: Wash with plenty of soap and water.  
If skin irritation occurs: Get medical advice.  
See Section 4 First Aid Measures.  
Take off contaminated clothing and wash it before reuse.  
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

# ORION® HERBICIDE

Date: 7/1/2015  
Replaces: 3/5/2015

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
1,2-Propanediol	Propylene Glycol	57-55-6	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<57.36%
2',6',8-trifluoro-5-methoxy[1,2,4]triazolo[1,5-c]pyrimidine-2-sulfonanilide	Florasulam	145701-23-1	0.39%
Acetic acid, (4-chloro-2-methylphenoxy)-, 2-ethylhexyl ester	MCPA-2-Ethylhexyl	29450-45-1	42.25%

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:

Skin 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.

## 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:

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.

## ORION® HERBICIDE

Date: 7/1/2015  
 Replaces: 3/5/2015

### 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 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:

Not Applicable

### 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
Propylene Glycol	Not Established	Not Established	10 mg/m <sup>3</sup> TWA	AIHA
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Florasulam	Not Established	Not Established	Not Established	Not Applicable
MCPA-2-Ethylhexyl	Not Established	Not Established	Not Established	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.

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.

## ORION® HERBICIDE

Date: 7/1/2015

Replaces: 3/5/2015

### 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 approved respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Tan white liquid

Odor: Mild

Odor Threshold: Not Available

pH: Not Available

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 212°F (Pensky-Martens CC)

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Florasulam 7.5 x 10<sup>-8</sup> mmHg  
MCPA-2-Ethylhexyl 2 x 10<sup>-6</sup> mmHg @ °64F

Vapor Density: Not Available

Relative Density: 1.034 g/ml

Solubility (ies): Florasulam 6.36 g/l (68°F) (pH 7.0)  
MCPA-2-Ethylhexyl Immiscible with water

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: None known.

Incompatible materials: None known.

Hazardous Decomposition Products: None known.

**ORION® HERBICIDE**

Date: 7/1/2015

Replaces: 3/5/2015

**11. TOXICOLOGICAL INFORMATION**

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Skin irritation, Respiratory irritation

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

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

- Ingestion: Oral (LD50 Female Rat) : 3129 mg/kg body weight
- Dermal: Dermal (LD50 Rabbit) : > 5000 mg/kg body weight
- Inhalation: Inhalation (LC50 Rat) : > 5.64 mg/l air - 4 hours
- Eye Contact: See "Other Toxicity Information", Sec. 11
- Skin Contact: See "Other Toxicity Information", Sec. 11
- Skin Sensitization: Sensitizing (Mouse)

Reproductive/Developmental Effects

- Florasulam: Teratology (Birth Defects): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects to the mother.
- Reproductive Effects: Did not interfere with reproduction in laboratory animal studies.
- Mutagenicity: In-vitro and animal genetic toxicity studies were negative.
- MCPA-2-Ethylhexyl: Caused birth defects in laboratory animals only at doses toxic to the mother. In animal studies, did not interfere with reproduction. In-vitro and animal genetic toxicity studies were negative.

Chronic/Subchronic Toxicity Studies

- Florasulam: In animals, effects have been reported on the following organ: Kidney.
- MCPA-2-Ethylhexyl: Not Available

Carcinogenicity

- Florasulam: Did not cause cancer in laboratory animals.
- MCPA-2-Ethylhexyl: Did not cause cancer in laboratory animals.

Chemical Name	NTP/IARC/OSHA Carcinogen
1,2-Propanediol	No
Other ingredients	No
2',6',8-trifluoro-5-methoxy[1,2,4]triazolo[1,5-c]pyrimidine-2-sulfonamide	No
Acetic acid, (4-chloro-2-methylphenoxy)-, 2-ethylhexyl ester	No

Other Toxicity Information

- Eye: May cause slight eye irritation. Corneal injury is unlikely.
- Skin: Brief contact may cause moderate skin irritation with local redness.

Toxicity of Other Components

**ORION® HERBICIDE**

Date: 7/1/2015

Replaces: 3/5/2015

Other ingredients  
Not Applicable

Propylene Glycol  
Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

Florasulam: Kidney, liver  
MCPA-2-Ethylhexyl: Not Applicable

Inert Ingredients

Other ingredients: Not Applicable  
Propylene Glycol: CNS, kidney, liver

**12. ECOLOGICAL INFORMATION**

Eco-Acute Toxicity

Florasulam:  
Fish (Rainbow Trout) 96-hour LC50 > 100 mg/l  
Invertebrate (Daphnia Magna) 48-hour EC50 > 292 mg/l  
MCPA-2-Ethylhexyl:  
Fish (Rainbow Trout) 96-hour LC50 3.2 mg/l  
Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.29 mg/l  
Algae 72-hour EC50 0.11 mg/l

Environmental Fate

Florasulam:  
The information presented here is for the active ingredient, florasulam.  
Movement & Partitioning: Bioconcentration potential is low (BCF is less than 100 or log Pow less than 3).  
Degradation & Persistence: Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.  
MCPA-2-Ethylhexyl:  
The information presented here is for the active ingredient, MCPA-2-Ethylhexyl.  
Fairly mobile, but rapidly degraded in aerobic soils. Rapidly degraded in aerobic soils (MCPA aerobic half-life = 24 days). The ester has been shown to quickly hydrolyze to the acid. Potential for bioaccumulation is low based on log Pow MCPA (-0.81 @ pH7).

**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

## ORION® HERBICIDE

Date: 7/1/2015

Replaces: 3/5/2015

---

### 14. TRANSPORT INFORMATION

#### DOT Classification

Ground Transport - NAFTA  
Not regulated

#### Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. ([[2-Ethylhexyl(4-Chloro-2-MethylPhenoxy)Acetate], Florasulam), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. ([[2-Ethylhexyl(4-Chloro-2-MethylPhenoxy)Acetate], Florasulam)

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Note: This product is currently not regulated for airfreight within the NAFTA region. However, effective 01/01/2011 the above classification must be used.

---

### 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: Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

#### EPA Registration Number(s):

100-1307

#### EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: None

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

None

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

Not Applicable

#### TSCA Status:

Exempt from TSCA, subject to FIFRA

## ORION® HERBICIDE

Date: 7/1/2015  
Replaces: 3/5/2015

### 16. OTHER INFORMATION

#### NFPA Hazard Ratings

Health: 2  
Flammability: 1  
Instability: 0

#### HMIS Hazard Ratings

Health: 2  
Flammability: 1  
Reactivity: 0

Syngenta Hazard Category: C,S

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

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/10/2007

Revision Date: 7/1/2015

Replaces: 3/5/2015

Section(s) Revised: 2, 4, 7, 11

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.