

FLEXSTAR® GT 3.5

Date: 7/15/2015
 Replaces: 3/9/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **FLEXSTAR® GT 3.5**
 Product No.: A17898A
 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: Eye Damage/Irritation: Category 2B
 Signal Word (OSHA): Warning
 Hazard Statements: Causes eye irritation

Hazard Symbols:

Precautionary Statements: 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 eye irritation persists: Get medical advice.

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

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	<71.72%
Glyphosate, N-(phosphonomethyl) glycine	Glyphosate Acid	1071-83-6	22.40%
5-[2-chloro-4-(trifluoromethyl)phenoxy]-N-(methylsulfonyl)-2-nitrobenzamide, sodium salt	Fomesafen Sodium Salt	108731-70-0	5.88%

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

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:

This product may form flammable and explosive hydrogen gas when in contact with galvanized or unlined steel.

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.

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.

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7. HANDLING AND STORAGE

Precautions for safe handling:

Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass containers. Concentrate should not be stored in galvanized steel, carbon steel, aluminum or unlined steel containers.

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 ³ TWA	AIHA
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Glyphosate Acid	Not Established	Not Established	5 mg/m ³ TWA	Syngenta
Fomesafen Sodium Salt	Not Established	Not Established	2 mg/m ³ TWA (based on Fomesafen Technical)	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.

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.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid
Odor: Weak ammonia-weak
Odor Threshold: Not Available
pH: 6.0 (1% solution in deionized H₂O @ 77°F [25°C])
Melting point/freezing point: Not Applicable
Initial boiling point and boiling range: Not Available
Flash Point (Test Method): Not Available
Flammable Limits (% in Air): Not Available
Flammability: Not Available
Vapor Pressure: Fomesafen Sodium Salt Not Available
Glyphosate Acid < 1.8 x 10⁻⁷ mmHg @ 77°F (25°C)
Vapor Density: Not Available
Relative Density: 1.210 g/cm³ @ 68°F (20°C)
Solubility (ies): Fomesafen Sodium Salt Not Applicable
Glyphosate Acid 0.91 g/100ml @ 68°F (20°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: Concentrate should not be stored in galvanized steel, carbon steel, aluminum or unlined steel containers. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
Incompatible materials: None known.
Hazardous Decomposition Products: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation

Delayed, immediate and chronic effects of exposure: Eye 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) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.69 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

Fomesafen Sodium Salt: Non-genotoxic in in vitro and in vivo assays.

Hepatic changes and a small effect on reproductive performance seen in a 3-generation rat study at the 1000 ppm dose level. (based on Fomesafen Technical).

Glyphosate Acid: No developmental effects seen in animal studies.

Chronic/Subchronic Toxicity Studies

Fomesafen Sodium Salt: Liver effects seen at 10 ppm and 100 ppm in 90-day rat feeding studies and in 6-month dog studies at 25 mg/kg/d. (based on Fomesafen Technical).

No evidence of neurotoxicity from subacute or longer-term studies in mammals. (based on Fomesafen Technical)

Glyphosate Acid: Rat subchronic 90-day study - NOEL of 5000 ppm (410 - 440 mg/kg). Body weight reduction, clinical chemistry changes.

No evidence of neurotoxic effects in acute and subchronic rat studies (NOEL both studies 2000 mg/kg). No evidence of delayed neurotoxic effects in hens (NOEL 2000 mg/kg).

Carcinogenicity

Fomesafen Sodium Salt: Increased rates of malignant liver tumors in a 2-yr mouse feeding study (1000 ppm), but the results are not considered relevant to man. (based on Fomesafen Technical).

Glyphosate Acid: Not genotoxic in Ames, mouse lymphoma, human lymphocyte and mouse micronucleus tests.

No mutagenic effects seen in animal studies.

Chemical Name	NTP/IARC/OSHA Carcinogen
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1,2-Propanediol	No
Other ingredients	No
Glyphosate, N-(phosphonomethyl) glycine	No
5-[2-chloro-4-(trifluoromethyl)phenoxy]-N-(methylsulfonyl)-2-nitrobenzamide, sodium salt	No

Other Toxicity Information

None

Toxicity of Other Components

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.

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Target Organs

Active Ingredients

Fomesafen Sodium Salt: Liver (based on Fomesafen Technical)
 Glyphosate Acid: Skin, eye

Inert Ingredients

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

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Glyphosate Acid:

Fish (Bluegill Sunfish) 96-hour LC50 45 ppm
 Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 134 ppm
 Green Algae 4-day EC50 12.54 ppm
 Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

Fomesafen Sodium Salt:

Fish (Rainbow Trout) 96-hour LC50 680 ppm
 Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 294 ppm
 Bird (Mallard Duck) 14-day LD50 > 5000 mg/kg

The above ecotoxicity data are based on Fomesafen Technical, not Fomesafen Sodium Salt

Environmental Fate

Fomesafen Sodium Salt:

The information presented here is for the active ingredient, fomesafen.
 Persistent in soil. Stable in water. Highly mobile in soil. Will leach. Sinks in water (after 24 h).

Glyphosate Acid:

The information presented here is for the active ingredient, glyphosate.
 Not persistent in soil. Immobile 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

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
 Not regulated

Comments

Water Transport - International

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Not regulated.

Air Transport
 Not regulated.

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. Avoid contact with 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):
 100-1385

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Fomesafen Sodium Salt 5.88% (CAS No. 108731-70-0)

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: 1
 Flammability: 1
 Instability: 0

HMIS Hazard Ratings

Health: 1
 Flammability: 1
 Reactivity: 0

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

Syngenta Hazard Category: A,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/13/2010
 Revision Date: 7/15/2015
 Section(s) Revised: 2, 16

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