

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

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

1. PRODUCT IDENTIFICATION

Product Name:	FLEXSTAR GT 3.5	Product No.:	A17898A
EPA Signal Word:	Caution		
Active Ingredient(%):	Fomesafen Sodium Salt (5.88%)	CAS No.:	108731-70-0
Chemical Name:	5-[2-chloro-4-(trifluoromethyl)phenoxy]-N-(methylsulfonyl)-2-nitrobenzamide, sodium salt		
Chemical Class:	Contact Broadleaf Herbicide		
Active Ingredient(%):	Glyphosate Acid (22.40%)	CAS No.:	1071-83-6
Chemical Name:	Glyphosate, N-(phosphonomethyl) glycine		
Chemical Class:	A phosphonic acid herbicide		
EPA Registration Number(s):	100-1385	Section(s) Revised:	1, 11

2. HAZARDS IDENTIFICATION
Health and Environmental

Harmful if inhaled. Causes eye irritation.

Hazardous Decomposition Products

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

Physical Properties

Appearance: Amber liquid
 Odor: Weak ammonia-weak

Unusual Fire, Explosion and Reactivity 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Propylene Glycol	Not Established	Not Established	10 mg/m ³ TWA ****	No
Glyphosate Acid (22.40%)	Not Established	Not Established	10 mg/m ³ TWA ***	No
Fomesafen Sodium Salt (5.88%)	Not Established	Not Established	2 mg/m ³ TWA (based on Fomesafen Technical) ***	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, S

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

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.

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 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.

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. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Amber liquid
- Odor: Weak ammonia-weak
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.210 g/cm³ @ 68°F (20°C)
- pH: 6.0 (1% solution in deionized H₂O @ 77°F [25°C])

Solubility in H₂O

- Fomesafen Sodium Salt: Not Applicable
- Glyphosate Acid: 0.91 g/100ml @ 68°F (20°C)

Vapor Pressure

- Fomesafen Sodium Salt: Not Available
- Glyphosate Acid: < 1.8 x 10⁽⁻⁷⁾ 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, 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.
- 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) : > 2.69 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 mutagenic or 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.

Other Toxicity Information

None

Toxicity of Other Components

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

Fomesafen Sodium Salt: Liver (based on Fomesafen Technical)

Glyphosate Acid: Skin, eye

Inert Ingredients

Propylene Glycol: CNS, kidney, liver

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

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

Not regulated.

Air Transport

Not regulated.

15. REGULATORY INFORMATION

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)

California Proposition 65

Not Applicable

CERCLA/SARA 302 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

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/13/2010

Revision Date: 1/14/2011

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