

**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: **REFLEX HERBICIDE** Product No.: A8339B  
 EPA Signal Word: Danger  
 Active Ingredient(%): Fomesafen Sodium Salt (22.8%) CAS No.: 108731-70-0  
 Chemical Name: 5-[2-chloro-4-(trifluoromethyl)phenoxy]-N-(methylsulfonyl)-2-nitrobenzamide, sodium salt  
 Chemical Class: Contact Broadleaf Herbicide  
 EPA Registration Number(s): 100-993 **Section(s) Revised: 2, 3, 5, 8, 12, 15**

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Sodium Hydroxide	2 mg/m <sup>3</sup> TWA	2 mg/m <sup>3</sup> STEL (ceiling) (irritation)	2 mg/m <sup>3</sup> TWA (ceiling) **	No
Fomesafen Sodium Salt (22.8%)	Not Established	Not Established	2 mg/m <sup>3</sup> TWA (based on Fomesafen Technical)***	No

\*\* recommended by NIOSH

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

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

**3. HAZARDS IDENTIFICATION**
Symptoms of Acute Exposure

An eye corrosive. Harmful in contact with skin. Irritating to skin.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Pale yellow liquid

Odor: Odorless

Unusual Fire, Explosion and Reactivity Hazards

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

**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): > 212°F
- Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Flammable

### Unusual Fire, Explosion and Reactivity Hazards

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**

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, PACKAGING AND USE 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 (such as nitrile or butyl) gloves, coveralls, socks and

chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

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: Pale yellow liquid  
Odor: Odorless  
Melting Point: Not Applicable  
Boiling Point: 213°F  
Specific Gravity/Density: 1.11 g/ml  
pH: 8.7 - 10

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

Fomesafen Sodium Salt: Not Applicable

### Vapor Pressure

Fomesafen Sodium Salt: Not Available

## 10. STABILITY AND REACTIVITY

Stability: Stable under normal use and storage conditions.  
Hazardous Polymerization: Will not occur.  
Conditions to Avoid: None known.  
Materials to Avoid: Acids.  
Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

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

Ingestion: Practically Non-Toxic  
Oral (LD<sub>50</sub> Rat) : 6,950 mg/kg body weight  
Dermal: Moderately Toxic  
Dermal (LD<sub>50</sub> Rabbit) : > 1,000 mg/kg body weight  
Inhalation: Not Available  
Inhalation (LC<sub>50</sub> Rat) : Not Available  
Eye Contact: Corrosive (Rabbit)  
Skin Contact: Mildly 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).

### 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)

### 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).

#### Other Toxicity Information

None

#### Toxicity of Other Components

##### Sodium Hydroxide

Causes severe burns to eyes, skin, and respiratory tract resulting in pulmonary edema and lung inflammation. Exposure causes permanent eye damage. If ingested, can cause severe burns to mouth, throat and stomach and may be fatal.

#### Target Organs

##### Active Ingredients

Fomesafen Sodium Salt: Liver (based on Fomesafen Technical)

##### Inert Ingredients

Sodium Hydroxide: Skin, eye, respiratory tract, digestive tract

## 12. ECOLOGICAL INFORMATION

#### Summary of Effects

Fomesafen Sodium Salt:

Toxic to fish. (based on Fomesafen Technical)

#### Eco-Acute Toxicity

Fomesafen Sodium Salt: Rainbow Trout 96-hour LC50 170 mg/L

Bluegill Sunfish 96-hour LC50 1,507 mg/L

Mallard Oral LD50 >5,000 mg/kg

Mallard 5-day Dietary LC50 >20,000 mg/kg

Daphnia magna 48-hour EC50 0.33 g/L

Green Algae EC50 170 ug/L

Bobwhite Quail 5-day LC50 >20,000 mg/kg

The above Ecotoxicity Data are based on Fomesafen Technical, not Fomesafen Sodium Salt

#### Eco-Chronic Toxicity

Fomesafen Sodium Salt: Not Available

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).

## 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.

#### B/L Freight Classification

Herbicides, NOIBN

Comments

None.

**15. REGULATORY INFORMATION**

EPCRA SARA Title III Classification

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

Section 313 Toxic Chemicals: Fomesafen Sodium Salt (22.8%) (CAS No. 108731-70-0)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills > 4,800 gal. (based on sodium hydroxide [RQ = 1,000 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

**16. OTHER INFORMATION**

NFPA Hazard Ratings

Health: 3  
Flammability: 1  
Instability: 0

HMIS Hazard Ratings

Health: 3  
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: 11/16/1998

Revision Date: 02/21/2005

Replaces: 06/07/2002

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.

RSVP# : SCP-955-00363B

End of MSDS