

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: **FUSION** Product No.: A12869A
 EPA Signal Word: Caution
 Active Ingredient(%): Fenoxaprop-P-Ethyl Technical (6.76%) CAS No.: 71283-80-2
 Chemical Name: (+)-ethyl-2-[4-[6-(chloro-2-benzoxazolyl)oxy]phenoxy]propanoate
 Chemical Class: Herbicide.
 Active Ingredient(%): Fluazifop-P-Butyl Technical (24.15%) CAS No.: 79241-46-6
 Chemical Name: Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate
 Chemical Class: A post emergence herbicide
 EPA Registration Number(s): 100-1059 **Section(s) Revised: All sections**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Petroleum Solvent	Not Established	Not Established	100 ppm*	No
Naphthalene	10 ppm	10 ppm (STEL= 15 ppm)	Not Established	No
1,2,4-Trimethylbenzene	25 ppm TWA	25 ppm TWA	Not Established	No
Petroleum Solvent	Not Established	Not Established	Not Established	No
Xylene	100 ppm TWA	100 ppm TWA; 150 ppm STEL	Not Established	IARC Group 3
Naphthalene	10 ppm	10 ppm (STEL= 15 ppm)	Not Established	No
Fluazifop-P-Butyl Technical (24.15%)	Not Established	Not Established	0.5 mg/m ³ TWA***	No
Fenoxaprop-P-Ethyl Technical (6.76%)	Not Established	Not Established	Not Established	No

* recommended by manufacturer

*** Syngenta Occupational Exposure Standard (OES)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

3. HAZARDS IDENTIFICATION
Symptoms of Acute Exposure

Can cause skin, eye and respiratory tract irritation. Allergic reactions are possible. Harmful if inhaled or swallowed. Exposure to high vapor levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Uniform dark brown liquid, insoluble material free

Odor: Aromatic

Unusual Fire, Explosion and Reactivity Hazards

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

Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back.

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. 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.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

- Flash Point (Test Method): 149°F (method not available)
- Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Combustible liquid

Unusual Fire, Explosion and Reactivity Hazards

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

Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back.

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 it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, 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 AND PACKAGING OF THE PRODUCT.

FOR COMMERCIAL APPLICATIONS AND 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: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Uniform dark brown liquid, insoluble material free
- Odor: Aromatic
- Melting Point: Not Available
- Boiling Point: Not Available
- Specific Gravity/Density: 1.00 g/mL
- pH: 5.8(1% w/w dilution in deionized water)

Solubility in H₂O

- Fenoxaprop-P-Ethyl Technical: 0.9mg/l @ 68°F (20°C) (99.7% pure)
- Fluazifop-P-Butyl Technical: Almost insoluble in water (1 mg/L @ pH 5 - 6.5)

Vapor Pressure

- Fenoxaprop-P-Ethyl Technical: 4.0 x 10⁽⁻⁹⁾ mmHg @ 68°F (20°C)
- Fluazifop-P-Butyl Technical: 4.5 x 10⁽⁻⁷⁾ mmHg @ 68°F (20°C)

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: Oxidizing agents.
- Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Slightly Toxic
Oral (LD50 Rat) : 3,154 mg/kg body weight
- Dermal: Slightly Toxic

Dermal (LD50 Rat) : > 2,000 mg/kg body weight
Inhalation: Moderately Toxic
Inhalation (LC50 Rat) : > 5.02 mg/l air - 4 hours
Eye Contact: Moderately Irritating (Rabbit)
Skin Contact: Moderately Irritating (Rabbit)
Skin Sensitization: Not Available

Neurotoxicity

Fenoxaprop-P-Ethyl Technical: Not Available
Fluazifop-P-Butyl Technical: No specific neurotoxicity tests have been conducted on fluazifop-p-butyl. However, there was no evidence of neurotoxicity in acute, subchronic or chronic studies.

Reproductive Effects

Fenoxaprop-P-Ethyl Technical: No experimental indications of in vivo genotoxicity. No indications of toxic effects were observed in reproductive studies in animals.
Fluazifop-P-Butyl Technical: In a 3-generation reproductive study in rats, effects included reductions in weight gain, fetal weight, ossification, testicular weight, spleen weight, increased prostate weight and gestation length. No Effect Level (NEL) was 1 mg/kg/day. Fetotoxic effects seen in the rabbit, including reduced fetal weight and reduced ossification at higher doses. No Effect Level (NEL) was 30 mg/kg/day in rabbits. The NEL for teratogenic effects is at least 10/mg/day in the rat, with diaphragmatic hernia at higher doses. Not teratogenic at highest dose tested in rabbits (90 mg/kg/day). While fluazifop-p-butyl is fetotoxic when fed to pregnant rats, human exposure data has concluded that female formulation workers are not at increased risk of fetotoxic effects when skin protection measures are applied.

Chronic/Subchronic Toxicity Studies

Fenoxaprop-P-Ethyl Technical: Not Available
Fluazifop-P-Butyl Technical: Chronic toxicity studies in rodents have shown liver changes (cellular hypertrophy). The No Effect Level (NEL) in rats is 10 ppm (0.5 mg/kg/day). Long term feeding studies in dogs produced a range of potentially serious effects at high dose rates (red cell, bone marrow and lymphadenopathy changes and liver and spleen damage) with a No Effect Level of 25 mg/kg/day.

Carcinogenicity

Fenoxaprop-P-Ethyl Technical: No indications of carcinogenic effects are available from long-term trials.
Fluazifop-P-Butyl Technical: Laboratory studies show no evidence that fluazifop-p-butyl is a carcinogen. Specific rat and mouse lifetime studies on fluazifop butyl (a related compound) showed no carcinogenic effects (highest doses 250 ppm rat and 80 ppm mouse).

Other Toxicity Information

None.

Toxicity of Other Components

Petroleum Solvent

Supplier states that inhalation of vapors at high concentrations can cause central nervous system effects (dizziness, headache) and irritation to eyes or respiratory tract. Skin exposure can cause defatting with resulting dermatitis.

Petroleum Solvent

May cause irritation to the eyes. Prolonged and/or repeated skin contact may cause irritation/dermatitis. Can be absorbed and cause liver and kidney damage. Inhalation of vapors or mists may be irritating to the respiratory system. Excessive inhalation causes headache, dizziness, nausea and loss of motor skills.

Target Organs

Active Ingredients

Fenoxaprop-P-Ethyl Technical: Not Available
Fluazifop-P-Butyl Technical: Liver, skin, kidney, eye, bone marrow, blood, reproductive system

Inert Ingredients

Petroleum Solvent: CNS, respiratory tract, skin
Petroleum Solvent: Eye, skin, respiratory system

12. ECOLOGICAL INFORMATION

Summary of Effects

Fenoxaprop-P-Ethyl Technical:

Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Fluazifop-P-Butyl Technical:

Toxic to fish.

Eco-Acute Toxicity

Fluazifop-P-Butyl Technical: Rainbow Trout 96-hour LC50 1.3 mg/l
Mallard Oral LD50 >3,500 mg/kg
Daphnia magna 48 hours EC50 >1.0 mg/l
Fenoxaprop-P-Ethyl Technical: Rainbow Trout 96-hour LC50 0.57 mg/L
Daphnia magna 48 hours EC50 0.56 mg/L
Algae (72H) EC50 0.51 mg/L

Eco-Chronic Toxicity

Fluazifop-P-Butyl Technical: Not Available
Fenoxaprop-P-Ethyl Technical: Not Available

Environmental Fate

Fenoxaprop-P-Ethyl Technical:

Moderately/partially biodegradable

Fluazifop-P-Butyl Technical:

No data available for the formulation. The information presented here is for the active ingredient, fluazifop-p-butyl. A thorough review of environmental information is not possible in this document. For additional information call the toll free number listed in Section 16.
Soil/Environment: Koc 5800. In moist soils, rapid degradation of fluazifop-p-butyl occurs, DT50 <24 h. The major degradation product is fluazifop-p, which is hydrolysed to 5-trifluoromethylpyrid-2-one, and 2-(4-hydroxyphenoxy)propionic acid, both of which are further degraded, ultimately to CO₂.

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

Not regulated by DOT.

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: 1,2,4-Trimethylbenzene (CAS No. 95-63-6)
Naphthalene (CAS No. 91-20-3)
Naphthalene (CAS No. 91-20-3)
Xylene (CAS No. 1330-20-7)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

>1,300 lbs (based on naphthalene, CAS # 91-20-3 [RQ = 100 lbs] 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: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
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: 10/19/1998

Revision Date: 02/07/2002

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.

RSVP# : SCP-955-00336A

End of MSDS