

**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: **FUSILADE DX** Product No.: A12460A  
 EPA Signal Word: Caution  
 Active Ingredient(%): Fluzifop-P-Butyl Technical (24.5%) 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): 100-1070 **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
Fluzifop-P-Butyl Technical (24.5%)	Not Established	Not Established	0.5 mg/m <sup>3</sup> TWA***	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 eye, skin and respiratory passage 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

Mists from heated solution may cause respiratory irritation.  
 Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Dark brown liquid, free of sediment  
 Odor: Aromatic

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. 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.

#### Medical Condition Likely to be Aggravated by Exposure

Spray oil - Skin, respiratory, lung (asthma)

## **5. FIRE FIGHTING MEASURES**

### Fire and Explosion

Flash Point (Test Method):	212°F (TCC)	
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.

### In Case of Fire

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.

## **6. ACCIDENTAL RELEASE MEASURES**

### In Case of Spill or Leak

Warning - flammable vapors may be present. Eliminate sources of ignition and ventilate spill area. Use non-sparking clean-up equipment to prevent vapor ignition.

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: Dark brown liquid, free of sediment
- Odor: Aromatic
- Melting Point: Not available at this time
- Boiling Point: Not available at this time
- Specific Gravity/Density: 0.98 g/mL @ 68°F (20°C)
- pH: 6.2(1% w/w dilution in deionized water)

### Solubility in H2O

Fluazifop-P-Butyl Technical: Almost insoluble in water (1 mg/L @ pH 5 - 6.5)

### Vapor Pressure

Fluazifop-P-Butyl Technical: 4.5 x 10<sup>(-7)</sup> mmHg @ 68°F (20°C)

## 10. STABILITY AND REACTIVITY

- Stability: Stable under standard conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: None known.
- Materials to Avoid: Oxidizing agents.
- Hazardous Decomposition Products: Mists from heated solution may cause respiratory irritation.  
Can decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

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

- Ingestion: Practically Non-Toxic  
Oral (LD50 Rat) : > 5,000 mg/kg body weight
- Dermal: Practically Non-Toxic  
Dermal (LD50 Rat) : > 2,000 mg/kg body weight
- Inhalation: Slightly Toxic  
Inhalation (LC50 Animal 0.54 mg/l air - 4 hours  
Not Available) :
- Eye Contact: Slightly Irritating (Rabbit)
- Skin Contact: Moderately Irritating (Rabbit)
- Skin Sensitization: See "Other Toxicity Information", Sec. 11

### Neurotoxicity

- 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

- Fluazifop-P-Butyl In a 3-generation reproductive study in rats, effects included reductions in weight gain, fetal

Technical: 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

Fluazifop-P-Butyl Technical: Chronic toxicity studies in rodents have shown liver changes (cellular hypertrophy). The No Effect Level (LEL) 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

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

Repeated and/or prolonged contact may cause skin sensitization.

#### Toxicity of Other Components

##### Petroleum Solvent

Slightly irritating to the eyes but does not injure eye tissue. Frequent or prolonged skin contact may irritate and cause dermatitis. Skin contact may aggravate an existing dermatitis condition. High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

#### Target Organs

##### Active Ingredients

Fluazifop-P-Butyl Technical: Liver, skin, kidney, eye, bone marrow, blood, reproductive system

##### Inert Ingredients

Petroleum Solvent: Respiratory tract, CNS, skin

## **12. ECOLOGICAL INFORMATION**

#### Summary of Effects

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

#### Eco-Chronic Toxicity

Fluazifop-P-Butyl Technical: Not Available

#### Environmental Fate

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 CO<sub>2</sub>.

### 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)

#### California Proposition 65

Not Applicable

#### CERCLA/SARA 302 Reportable Quantity (RQ)

> 4,800 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: 01/21/2002

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-955-00331A

End of MSDS