1. PRODUCT IDENTIFICATION

Product Name: FUSILADE DX
EPA Signal Word: Caution
Active Ingredient(%): Fluazifop-P-Butyl Technical (24.5%)
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

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Material</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other</th>
<th>NTP/IARC/OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene (&lt;= 3.9%)</td>
<td>10 ppm TWA</td>
<td>10 ppm TWA (skin)</td>
<td>10 ppm TWA**</td>
<td>See “Toxicity”, Sec. 11</td>
</tr>
<tr>
<td>Petroleum distillates, light paraffinic</td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
<td>No</td>
</tr>
<tr>
<td>Petroleum Solvent</td>
<td>Not Established</td>
<td>Not Established</td>
<td>100 mg/m³ (15 ppm)</td>
<td>No</td>
</tr>
<tr>
<td>Fluazifop-P-Butyl Technical (24.5%)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>0.5 mg/m³ TWA***</td>
<td>No</td>
</tr>
</tbody>
</table>

* recommended by manufacturer
** 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
- Can cause eye, skin and respiratory passage irritation. May cause sensitization by skin contact. 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: Dark brown liquid, free of sediment
- Odor: Aromatic

Unusual Fire, Explosion and Reactivity Hazards
- During a fire, irritanting 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**

- Medical Condition Likely to be Aggravated by Exposure
  
  None known.

### 5. FIRE FIGHTING MEASURES

**Fire and Explosion**

- Flash Point (Test Method): > 212°F (TCC)
- Flammable Limits (% in Air): Lower: % Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Applicable

**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 in Protective Equipment Section. 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.

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 combination particulate/organic vapor respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with an HE prefilter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark brown liquid, free of sediment</td>
</tr>
<tr>
<td>Odor</td>
<td>Aromatic</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>0.98 g/ml @ 68°F (20°C)</td>
</tr>
<tr>
<td>pH</td>
<td>6.2 (1% w/w dilution in deionized water)</td>
</tr>
<tr>
<td>Solubility in H2O</td>
<td>Fluazifop-P-Butyl Technical: Almost insoluble in water (1 mg/l @ pH 5 - 6.5)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Fluazifop-P-Butyl Technical: 4.5 x 10(-7) mmHg @ 68°F (20°C)</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under normal use and storage conditions.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Materials to Avoid</td>
<td>Oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Can decompose at high temperatures forming toxic gases.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

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

<table>
<thead>
<tr>
<th>Route</th>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Practically Non-Toxic</td>
<td>&gt; 5,000 mg/kg body weight</td>
</tr>
<tr>
<td>Dermal</td>
<td>Practically Non-Toxic</td>
<td>&gt; 2,000 mg/kg body weight</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Slightly Toxic</td>
<td>0.54 mg/l air - 4 hours</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Slightly Irritating</td>
<td>(Rabbit)</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Moderately Irritating</td>
<td>(Rabbit)</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>See &quot;Other Toxicity Information&quot;, Sec. 11</td>
<td></td>
</tr>
</tbody>
</table>

**Reproductive/Developmental Effects**

Fluazifop-P-Butyl Technical: Embryo/foetotoxic effects have been reported in rats. Did not show teratogenic effects in animal experiments.
**Chronic/Subchronic Toxicity Studies**

Fluazifop-P-Butyl Technical: Effects on red cells, bone marrow, liver and spleen observed in long-term high dose feeding tests in dogs. No adverse health effects are expected in humans at airborne levels below the occupational exposure limit.

**Carcinogenicity**

Fluazifop-P-Butyl Technical: Did not show mutagenic effects in animal experiments. Did not show carcinogenic effects in animal experiments.

**Other Toxicity Information**

Repeated and/or prolonged contact may cause skin sensitization.

**Toxicity of Other Components**

- **Naphthalene (≤ 3.9%)**
  - Exposure to naphthalene can cause cataracts, liver damage, kidney failure, respiratory failure, hematuria, anemia, damage to red blood cells, leukocytosis, or coma.
  - Carcinogen Status:
    - NTP: Anticipated Carcinogen
    - IARC: Group 2B Possible Human Carcinogen

- **Petroleum Solvent**
  - Inhalation of vapors at high concentrations can cause central nervous system effects (dizziness, headache), irritation to eyes or respiratory tract.
  - Petroleum distillates, light paraffinic
  - May cause respiratory tract irritation. Harmful if swallowed. Pulmonary aspiration hazard.

**Target Organs**

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Inert Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluazifop-P-Butyl Technical: Blood, bone marrow, liver, spleen</td>
<td>Naphthalene: Eye, liver, kidney, respiratory tract, blood, CNS</td>
</tr>
<tr>
<td>Inert Ingredients</td>
<td>Petroleum Solvent: Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin</td>
</tr>
<tr>
<td>Petroleum distillates, light paraffinic</td>
<td>Petroleum distillates, light paraffinic: Respiratory tract</td>
</tr>
</tbody>
</table>

**12. ECOLOGICAL INFORMATION**

**Summary of Effects**

Fluazifop-P-Butyl Technical:

- Toxic to fish and invertebrates. Slightly toxic to birds. Practically non-toxic to bees.

**Eco-Acute Toxicity**

Fluazifop-P-Butyl Technical:

- Bees LC50/EC50 > 200 ug/bee
- Invertebrates (Water Flea) LC50/EC50 1.0 ppm
- Fish (Trout) LC50/EC50 1.4 ppm
- Fish (Bluegill) LC50/EC50 0.53 ppm
- Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 4,659 ppm
- Birds (8-day dietary - Mallard Duck) LC50/EC50 4,321 ppm

**Eco-Chronic Toxicity**

Fluazifop-P-Butyl Technical: Not Available

**Environmental Fate**

Fluazifop-P-Butyl Technical:

- The information presented here is for the active ingredient, fluazifop-p-butyl.
- Not persistent in soil or water. 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.

B/L Freight Classification
Herbicides, NOI (NMC Class 60)

Comments
Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop), Marine Pollutant
Hazard Class or Division: Class 9
Identification Number: UN 3082
Packing Group: PG III

Air Transport - International
Not regulated.

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification
Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Naphthalene (<= 3.9%) (CAS No. 91-20-3)

California Proposition 65
Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)
Report product spills > 305 gal. (based on naphthalene [RQ = 100 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

<table>
<thead>
<tr>
<th>NFPA Hazard Ratings</th>
<th>HMIS Hazard Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health:</td>
<td>Health:</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Flammability:</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Instability:</td>
<td>Reactivity:</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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: 10/31/2005
Replaces: 07/29/2005

Product Name: FUSILADE DX
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-955-00331D

End of MSDS