1. PRODUCT IDENTIFICATION

Product Name: **FUSILADE II TURF & ORNAMENTAL**
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): 100-1084
Section(s) Revised: 2, 3, 4, 5, 6, 8, 15

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) TWA*</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.

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
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.
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: 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: 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

<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>Condition</th>
<th>Description</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

<table>
<thead>
<tr>
<th>Study Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity/Irritation Studies (Finished Product)</td>
<td>Practically Non-Toxic</td>
</tr>
<tr>
<td>Ingestion: Oral (LD50 Rat)</td>
<td>&gt; 5,000 mg/kg body weight</td>
</tr>
<tr>
<td>Dermal: Oral (LD50 Rat)</td>
<td>&gt; 2,000 mg/kg body weight</td>
</tr>
<tr>
<td>Inhalation: Inhalation (LC50 Animal)</td>
<td>0.54 mg/l air - 4 hours</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Slightly Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Moderately Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>See &quot;Other Toxicity Information&quot;, Sec. 11</td>
</tr>
</tbody>
</table>

Reproductive/Developmental Effects

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
Chronic/Subchronic Toxicity Studies

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.

No specific neurotoxicity tests have been conducted on fluazifop-p-butyl. However, there was no evidence of neurotoxicity in acute, subchronic or chronic studies.

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

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

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

Inert Ingredients
Naphthalene:
Eye, liver, kidney, respiratory tract, blood, CNS

Petroleum Solvent:
Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin

Petroleum distillates, light paraffinic:
Respiratory tract

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
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: 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

NFPA Hazard Ratings

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS Hazard Ratings

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

For non-emergency questions about this product call:
1-800-334-9481
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-955-00333B

End of MSDS