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, 8, 14

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Material</th>
<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></td>
<td>10 ppm TWA</td>
<td>10 ppm TWA (skin)</td>
<td>10 ppm TWA**</td>
<td>See &quot;Toxicity&quot;, Sec. 11</td>
</tr>
<tr>
<td>Petroleum distillates, light paraffinic</td>
<td></td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
<td>No</td>
</tr>
<tr>
<td>Petroleum Solvent</td>
<td></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></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, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES
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.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown liquid, free of sediment
Odor: Aromatic
Melting Point: Not Applicable
Boiling Point: Not Available
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^-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: 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 Not Available) : 0.54 mg/l air - 4 hours
Eye Contact: Slightly Irritating (Rabbit)
Skin Contact: Moderately Irritating (Rabbit)
Skin Sensitization: See "Other Toxicity Information", Sec. 11

Reproductive/Developmental 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 (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

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**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
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

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).
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>
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<tr>
<td>Instability:</td>
<td>Reactivity:</td>
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<tr>
<td>0</td>
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</tbody>
</table>

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 11/25/1998
Revision Date: 07/29/2005
Replaces: 09/22/2003

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-955-00333C

End of MSDS