1. PRODUCT IDENTIFICATION

Product Name: FUSILADE II TURF & ORNAMENTAL
Product No.: A12460A
EPA Signal Word: Caution

Active Ingredient(%): Fluazifop-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): 100-1084
Section(s) Revised: 14

2. HAZARDS IDENTIFICATION

Health and Environmental
Toxic if inhaled. May be harmful in contact with skin. Causes mild eye irritation. Irritating to skin. May cause respiratory tract irritation. May cause an allergic skin reaction.
Vapors may cause drowsiness and dizziness. May be harmful if swallowed and enters airway.

Hazardous Decomposition Products
None known.

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.

3. 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; 5%)</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>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 (15-17 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.
Syngenta Hazard Category: C, S
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 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 AND PACKAGING 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 gloves (such as barrier laminate, nitrile rubber, neoprene rubber or Viton), coveralls, socks and chemical-resistant footwear.

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

Appearance:  Dark brown liquid, free of sediment
Odor:  Aromatic
Melting Point:  Not Applicable
Boiling Point:  Not Available
Specific Gravity/Density:  0.9807 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:  None known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:  Oral (LD50 Rabbit) :  > 5000 mg/kg body weight

Dermal:  Dermal (LD50 Rabbit) :  > 2000 mg/kg body weight

Inhalation:  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

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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 (< 5%)
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: Blood, bone marrow, liver, spleen

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

Ecotoxicity Effects
Fluazifop-P-Butyl Technical:
Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 6.02 ppm
Green Algae 4-day EC50 > 1.8 ppm
Bird (Mallard Duck) 14-day LD50 > 3528 mg/kg

Environmental Fate
Fluazifop-P-Butyl Technical:
The information presented here is for the active ingredient, fluazifop-p-butyl.
Not persistent in soil or water.

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

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### 14. TRANSPORT INFORMATION

#### DOT Classification

- **Ground Transport - NAFTA**
  - < 300 gallons: Not regulated.
  - > 300 gallons:
    - Proper Shipping Name: Other Regulated Substances, Liquid, N.O.S. (RQ - Naphthalene)
    - Hazard Class: Class 9
    - Identification Number: NA 3082
    - Packing Group: PG III

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

- **Air Transport**
  - Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop)
  - Hazard Class: Class 9
  - Identification Number: UN 3082
  - Packing Group: PG III

#### Comments

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

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### 15. REGULATORY INFORMATION

#### EPCRA SARA Title III Classification

- **Section 311/312 Hazard Classes:**
  - Acute Health Hazard
  - Chronic Health Hazard

- **Section 313 Toxic Chemicals:**
  - Naphthalene (< 5%) (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

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### 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>
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</tbody>
</table>

#### HMIS Hazard Ratings

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<tr>
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<th>Minimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Slight</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>Serious</td>
</tr>
<tr>
<td>4</td>
<td>Extreme</td>
</tr>
</tbody>
</table>

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**Product Name:** FUSILADE II TURF & ORNAMENTAL
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.

End of MSDS