1. PRODUCT IDENTIFICATION

Product identifier on label: **FUSILADE® DX Herbicide**
Product No.: A12460A
Use: Herbicide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481
Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications:
- Skin Corrosion/Irritation: Category 2
- Skin Sensitizer: Category 1B
- Reproductive Toxicity: Category 2
- Specific Target Organ Toxicity: Repeated Category 2
- Aspiration Hazard: Category 1
- Carcinogenicity: Category 1B
- Inhalation: Category 2

Signal Word (OSHA): Danger

Hazard Statements:
- May be fatal if swallowed and enters airways
- Causes skin irritation
- May cause an allergic skin reaction
- Fatal if inhaled
- May cause cancer
- Suspected of damaging fertility or the unborn child
- May cause damage to organs through prolonged or repeated exposure

Precautionary Statements:
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe mist, vapors, spray.
- Wash hands and face thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing must not be allowed out of the workplace.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Common Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>Petroleum Solvent</td>
<td>Petroleum Solvent</td>
<td>64742-94-5</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>Petroleum distillates, light paraffinic</td>
<td>Petroleum distillates, light paraffinic</td>
<td>64741-89-5</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>Other ingredients</td>
<td>Other ingredients</td>
<td>Trade Secret</td>
<td>75.5%</td>
</tr>
<tr>
<td>Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate</td>
<td>Fluazifop-P-Butyl</td>
<td>79241-46-6</td>
<td>24.5%</td>
</tr>
</tbody>
</table>

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or 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.

Most important symptoms/effects:
- Skin irritation
- Allergic skin reaction

Indication of immediate medical attention and special treatment needed:
- There is no specific antidote if this product is ingested.
- Treat symptomatically.
- Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.
- Contains petroleum distillate - vomiting may cause aspiration pneumonia.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:
- Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:
- During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:
- 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:
- Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:
- 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

Precautions for safe handling:
- 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.

Conditions for safe storage, including any incompatibilities:
- Store locked up.
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.

Occupational Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>10 ppm TWA</td>
<td>10 ppm TWA (skin)</td>
<td>10 ppm TWA</td>
<td>NIOSH</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>Manufacturer</td>
</tr>
<tr>
<td>Petroleum distillates, light paraffinic</td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other ingredients</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Fluazifop-P-Butyl</td>
<td>Not Established</td>
<td>Not Established</td>
<td>0.5 mg/m³ TWA</td>
<td>Syngenta</td>
</tr>
</tbody>
</table>

Appropriate engineering controls:
Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

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 should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

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
Odor Threshold: Not Available
pH: 6.2 (1% w/w dilution in deionized water)
Melting point/freezing point: Not Applicable
Initial boiling point and boiling range: Not Available
Flash Point (Test Method): > 212°F (TCC)
Flammable Limits (% in Air): Not Available
10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable under normal use and storage conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to Avoid: None known.

Incompatible materials: None known.
Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Health effects information
 Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Skin irritation

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Skin irritation, Allergic skin reaction

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

<table>
<thead>
<tr>
<th>Route</th>
<th>Numerical Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Oral (LD50 Rat): &gt; 5000 mg/kg body weight</td>
</tr>
<tr>
<td>Dermal</td>
<td>Dermal (LD50 Rabbit): &gt; 2000 mg/kg body weight</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Inhalation (LC50 Animal Not Available): 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: Embryo/foetal effects have been reported in rats. Did not show teratogenic effects in animal experiments.

Chronic/Subchronic Toxicity Studies
Fluazifop-P-Butyl: 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: 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
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

Other ingredients
Not Applicable

Petroleum Solvent
May cause irritation to the eyes, skin and respiratory system. Excessive inhalation causes headache, dizziness, nausea and loss of motor skills.

Petroleum distillates, light paraffinic
May cause respiratory tract irritation. Harmful if swallowed. Pulmonary aspiration hazard.

Target Organs
Active Ingredients
Fluazifop-P-Butyl: Blood, bone marrow, liver, spleen

Inert Ingredients
Naphthalene:
Eye, liver, kidney, respiratory tract, blood, CNS
Other ingredients:
Not Applicable

Petroleum Solvent:
Eye, skin, respiratory system, central nervous system

Petroleum distillates, light paraffinic:
Respiratory tract
12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Fluazifop-P-Butyl:
   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:
   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

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

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

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
FUSILADE® DX Herbicide

15. REGULATORY INFORMATION

Pesticide Registration:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing (spray mist or vapor). Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

EPA Registration Number(s):
100-1070

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

Section 313 Toxic Chemicals: Naphthalene Trade Secret (CAS No. 91-20-3)

California Proposition 65:
This product contains a chemical(s) known to the state of California to cause cancer and birth defects or other reproductive harm.

CERCLA/SARA 304 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: 2</td>
<td>Health: 2</td>
</tr>
<tr>
<td>Flammability: 1</td>
<td>Flammability: 1</td>
</tr>
<tr>
<td>Instability: 0</td>
<td>Reactivity: 0</td>
</tr>
</tbody>
</table>

Syngenta Hazard Category: C,S

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

Original Issued Date: 10/19/1998
Revision Date: 10/17/2014
Replaces: 10/17/2014
Section(s) Revised: 2, 4, 11

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.