

FUSION®

Date: 6/17/2015

Replaces: 2/23/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **FUSION®**
Product No.: A12869A
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
Specific Target Organ Toxicity: Drowsiness Category 3
Specific Target Organ Toxicity: Respiratory Irritation Category 3
Aspiration Hazard: Category 1
Flammable Liquid: Category 4
Eye Damage/Irritation: Category 2B
Carcinogenicity: Category 1B

Signal Word (OSHA): Danger

Hazard Statements: Combustible liquid
May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes eye irritation
May cause respiratory irritation
May cause drowsiness or dizziness
May cause cancer
Suspected of damaging fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



FUSION®

Date: 6/17/2015
Replaces: 2/23/2015

Precautionary Statements: Contaminated work clothing must not be allowed out of the workplace.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, sparks, open flames, hot surfaces. No smoking.

Do not breathe mist, vapors, spray.

Wash hands and face thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, eye protection.

If swallowed: Immediately call a poison center, doctor or Syngenta.

If on skin: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If exposed or concerned: Get medical advice/attention.

Call a poison center, doctor or Syngenta if you feel unwell.

See Section 4 First Aid Measures.

Do NOT induce vomiting.

Take off contaminated clothing and wash it before reuse.

In case of fire: Use dry chemical, foam or CO₂ for extinction.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Xylene	Xylene	1330-20-7	<5.0%
1,2,4-Trimethylbenzene	1,2,4-Trimethylbenzene	95-63-6	<5.0%
Naphthalene	Naphthalene	91-20-3	<10.0%
Petroleum Solvent	Petroleum Solvent	Trade Secret	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<49.09%
Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate	Fluazifop-P-Butyl	79241-46-6	24.15%
(D+)-ethyl 2-(4-(6-chloro-2-benzoxazolylloxy)-phenoxy)propanoate	Fenoxaprop-P-Ethyl	71283-80-2	6.76%

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

FUSION®

Date: 6/17/2015

Replaces: 2/23/2015

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:

Eye irritation

Skin irritation

Drowsiness or dizziness

Respiratory irritation

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

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:

Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back.

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 outlined in Section 8. 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

FUSION®

Date: 6/17/2015
Replaces: 2/23/2015

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:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Xylene	100 ppm TWA	100 ppm TWA; 150 ppm STEL	100 ppm TWA	NIOSH
1,2,4-Trimethylbenzene	Not Established	25 ppm TWA	25 ppm TWA	NIOSH
Naphthalene	10 ppm TWA	10 ppm TWA (skin)	10 ppm TWA	NIOSH
Petroleum Solvent	Not Established	Not Established	50 mg/m ³ (8 ppm) TWA	Manufacturer
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fluazifop-P-Butyl	Not Established	Not Established	0.5 mg/m ³ TWA	Syngenta
Fenoxaprop-P-Ethyl	Not Established	Not Established	0.1 mg/m ³ TWA	Manufacturer

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. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate 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 certified respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

FUSION®

Date: 6/17/2015
Replaces: 2/23/2015

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: Uniform dark brown liquid, insoluble material free
Odor: Aromatic
Odor Threshold: Not Available
pH: 5.8 (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): 149°F (method not available)
Flammable Limits (% in Air): Not Available
Flammability: Combustible liquid
Vapor Pressure: Fenoxaprop-P-Ethyl 1.4 x 10⁻⁶ mmHg @ 68°F (20°C)
Fluazifop-P-Butyl 4.5 x 10⁻⁷ mmHg @ 68°F (20°C)
Vapor Density: Not Available
Relative Density: 0.9983 g/ml
Solubility (ies): Fenoxaprop-P-Ethyl 0.7 - 0.8 mg/l @ 77°F (25°C)
Fluazifop-P-Butyl Almost insoluble in water (1 mg/l @ pH 5 - 6.5)
Partition coefficient: n-octanol/water: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: None

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 INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Drowsiness or dizziness, Skin irritation, Respiratory irritation

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

FUSION®

Date: 6/17/2015
Replaces: 2/23/2015

reaction, Drowsiness or dizziness, Respiratory irritation

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

Ingestion: Oral (LD50 Rabbit) : 3154 mg/kg body weight
 Dermal: Dermal (LD50 Rabbit) : > 2000 mg/kg body weight
 Inhalation: Inhalation (LC50 Rat) : > 5.02 mg/l air - 4 hours
 Eye Contact: Moderately Irritating (Rabbit)
 Skin Contact: Moderately Irritating (Rabbit)
 Skin Sensitization: Likely to be a skin sensitizer based on active ingredient(s).

Reproductive/Developmental Effects

Fenoxaprop-P-Ethyl : In developmental studies, effects were seen in the mother and the pups in the high dose groups. The manufacturer does not consider these results as being significant. However, the compound has been reviewed by the European Food Safety Authority (EFSA), and the classification "Toxic to reproduction", category 3 (R63) has been proposed to the European Chemicals Agency (ECHA).

Fluazifop-P-Butyl : Embryo/foetoxic effects have been reported in rats. Did not show teratogenic effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Fenoxaprop-P-Ethyl : Not Available

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

Fenoxaprop-P-Ethyl : In vitro and in vivo mutagenicity tests to not indicate genotoxic activity. Did not show carcinogenic effects in animal experiments.

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

Chemical Name	NTP/IARC/OSHA Carcinogen
Xylene	IARC Group 3
1,2,4-Trimethylbenzene	No
Naphthalene	See "Toxicity", Sec. 11
Petroleum Solvent	No
Other ingredients	No
Butyl(RS)-2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate	No
(D+)-ethyl 2-(4-(6-chloro-2-benzoxazolyloxy)-phenoxy)propanoate	No

Other Toxicity Information

None

Toxicity of Other Components

1,2,4-Trimethylbenzene

Inhalation of 1,2,4-trimethylbenzene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma. Effects of chronic exposure to this solvent can include blood disorders (anemia, leukopenia) and kidney or liver damage.

FUSION®

Date: 6/17/2015
 Replaces: 2/23/2015

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

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat and lungs.

Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination.

Xylene

Inhalation of xylene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma.

Target Organs

Active Ingredients

Fenoxaprop-P-Ethyl :	Liver, eye
Fluazifop-P-Butyl :	Blood, bone marrow, liver, spleen

Inert Ingredients

1,2,4-Trimethylbenzene:	CNS, liver, kidney, blood, respiratory tract, skin, eye
Naphthalene:	Eye, liver, kidney, respiratory tract, blood, CNS
Other ingredients:	Not Applicable
Petroleum Solvent:	Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin
Xylene:	CNS, respiratory tract, skin

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

Fenoxaprop-P-Ethyl :

Fish (Bluegill Sunfish) 96-hour LC50 0.31 - 0.58 mg/l

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 1.058 mg/l

Bird (Bobwhite Quail) LD50 > 2000 mg/kg

Environmental Fate

Fenoxaprop-P-Ethyl :

The information presented here is for the active ingredient, fenoxaprop-p-ethyl. Slightly soluble in water, absorbs strongly to soils, and has low mobility.

FUSION®

Date: 6/17/2015
Replaces: 2/23/2015

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

< 119 gal: Not regulated

> 119 gal:

Proper Shipping Name: Combustible Liquid, N.O.S. (Naphthalene, Petroleum Solvent)

Hazard Class: Combustible Liquid

Identification Number: NA 1993

Packing Group: PG III

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop-P-Butyl, Fenoxaprop-P-Ethyl), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Fluazifop-P-Butyl, Fenoxaprop-P-Ethyl)

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Note: This product is currently not regulated for airfreight within the NAFTA region. However, effective 01/01/2011 the above classification must be used.

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:

Warning: WARNING. Causes skin irritation. Harmful if absorbed through skin or swallowed. Causes moderate eye irritation. Do not get on skin or on clothing. Avoid contact with eyes. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

EPA Registration Number(s):

100-1059

FUSION®

Date: 6/17/2015
 Replaces: 2/23/2015

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard
 Chronic Health Hazard
 Fire Hazard

Section 313 Toxic Chemicals: Xylene <5.0% (CAS No. 1330-20-7)
 1,2,4-Trimethylbenzene <5.0% (CAS No. 95-63-6)
 Naphthalene <10.0% (CAS No. 91-20-3)

CERCLA/SARA 304 Reportable Quantity (RQ):

>1,300 lbs (based on naphthalene, CAS # 91-20-3 [RQ = 100 lbs] 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

Health: 2
 Flammability: 2
 Instability: 0

HMIS Hazard Ratings

Health: 2
 Flammability: 2
 Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: D,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/19/1998

Revision Date: 6/17/2015

Replaces: 2/23/2015

Section(s) Revised: 2

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.