

SPIRIT® Herbicide

Date: 6/3/2015
Replaces: 7/21/2014

1. PRODUCT IDENTIFICATION

Product identifier on label: **SPIRIT® Herbicide**
 Product No.: A10786A
 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: Eye Damage/Irritation: Category 2A
 Signal Word (OSHA): Warning
 Hazard Statements: Causes serious eye irritation

Hazard Symbols:



Precautionary Statements: Wash hands and face thoroughly after handling.
 Wear eye protection.
 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.

Other Hazard Statements: May form combustible dust concentrations in air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Starch	Starch	9005-25-8	Trade Secret
Other ingredients	Other ingredients	Trade Secret	43.0%
3-[4,6-bis(difluoromethoxy)-pyrimidin-2-yl]-1-(2-methoxycarbonyl-phenylsulfonyl) urea	Primisulfuron-Methyl	86209-51-0	42.8%
1-(4-methoxy-6-methyltriazin-2-yl)-3-[2-(3,3,3-trifluoropropyl)-phenylsulfonyl]-urea	Prosulfuron	94125-34-5	14.2%

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

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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

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

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.

See also Sec. 7.

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. Sweep up material and place in a 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.

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7. HANDLING AND STORAGE

Precautions for safe handling:

This material is capable of forming flammable dust clouds in air, which, if ignited, can produce a dust cloud explosion. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.

This material can become readily charged in most operations.

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:

Not Applicable

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
Starch	15 mg/m ³ (total) TWA; 5 mg/m ³ (resp) TWA	10 mg/m ³ TWA	10 mg/m ³ (total) TWA; 5 mg/m ³ (resp) TWA	NIOSH
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Primisulfuron-Methyl	Not Established	Not Established	5 mg/m ³ TWA	Syngenta
Prosulfuron	Not Established	Not Established	4 mg/m ³ TWA	Syngenta

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 dust-proof chemical goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use NIOSH certified respirator with any N, 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

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may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Tan to brown solid
Odor: Sweet
Odor Threshold: Not Available
pH: 6 - 8 (1% suspension in water)
Melting point/freezing point: Not Available
Initial boiling point and boiling range: Not Applicable
Flash Point (Test Method): Not Applicable
Flammable Limits (% in Air): Not Available
Flammability: Combustible powder
Vapor Pressure: Primisulfuron-Methyl 3.8 x 10⁻⁸ mmHg @ 77°F (25°C)
Prosulfuron 2.6 x 10⁻⁸ mmHg @ 77°F (25°C)
Vapor Density: Not Available
Relative Density: 32.2 lbs/ft³
Solubility (ies): Primisulfuron-Methyl 12 mg/l @ 77°F (25°C)
Prosulfuron 29 mg/l @ 77°F (25°C)
Partition coefficient: n-octanol/water: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: 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: Eye irritation

Delayed, immediate and chronic effects of exposure: Eye irritation

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

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Ingestion: Oral (LD50 Rabbit) : > 5050 mg/kg body weight
 Dermal: Dermal (LD50 Rat) : > 2020 mg/kg body weight
 Inhalation: Inhalation (LC50 Rat) : > 5.4 mg/l air - 4 hours
 Eye Contact: Minimally Irritating (Rabbit)
 Skin Contact: Slightly Irritating (Rabbit)
 Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

Primisulfuron-Methyl: None observed.
 Prosulfuron: None observed.

Chronic/Subchronic Toxicity Studies

Primisulfuron-Methyl: Effects on liver, kidneys, teeth, bone and testes (rats and mice), bladder (mice), gallbladder and thyroid (dogs) at extremely high doses.
 Prosulfuron: Liver, kidneys, heart, blood, hemapoietic system, mammary gland, uterus and peripheral nervous system effects at high doses.

Carcinogenicity

Primisulfuron-Methyl: Does not present a human carcinogenic hazard. Liver tumors occur only at high doses that caused toxicity and mortality in the test animals.
 Prosulfuron: None observed.

Chemical Name	NTP/IARC/OSHA Carcinogen
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Starch	No
Other ingredients	No
3-[4,6-bis(difluoromethoxy)-pyrimidin-2-yl]-1-(2-methoxycarbonyl-phenylsulfonyl) urea	No
1-(4-methoxy-6-methyltriazin-2-yl)-3-[2-(3,3,3-trifluoropropyl)-phenylsulfonyl]-urea	No

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients
 Not Applicable

Starch

May cause eye and skin irritation. May cause respiratory tract irritation.

Target Organs

Active Ingredients

Primisulfuron-Methyl: Liver, kidney, bone, testes, thyroid, bladder, gallbladder
 Prosulfuron: Liver, kidney, heart, blood, hemapoietic system, mammary gland, uterus, CNS

Inert Ingredients

Other ingredients: Not Applicable

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Starch: Eye, skin, respiratory tract

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Primisulfuron-Methyl:

- Fish (Rainbow Trout) 96-hour LC50 > 13 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 100 ppm
- Bird (Mallard Duck) 14-day LD50 > 2150 mg/kg
- Green Algae 7-day EC50 24 ppb

Prosulfuron:

- Fish (Bluegill Sunfish) 96-hour LC50 > 155 ppm
- Green Algae 5-day EC50 0.01 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 120 ppm
- Bird (Mallard Duck) 14-day LD50 1094 mg/kg

Environmental Fate

Primisulfuron-Methyl:

The information presented below is for the active ingredient, primisulfuron-methyl.
Does not bioaccumulate. Not persistent in soil. Stable in water. Highly mobile in soil. Will leach. Sinks in water (after 24 h).

Prosulfuron:

The information presented below is for the active ingredient, prosulfuron.
Does not bioaccumulate. Not persistent in soil or water. Not persistent in soil or water. Sinks in water (after 24 h).

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

Note: Packages imported into the US are marked, labeled and distributed with the Class 9 international shipping classification.

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prosulfuron/Primisulfuron), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3077

Packing Group: PG III

Air Transport - International

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Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prosulfuron/Primisulfuron)
 Hazard Class or Division: Class 9
 Identification Number: UN 3077
 Packing Group: PG III

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: Causes eye irritation. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with eyes, skin, or clothing. Avoid breathing vapor or spray mist.

EPA Registration Number(s):
 100-911

EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: None

CERCLA/SARA 304 Reportable Quantity (RQ):

None

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 1
 Flammability: 2
 Instability: 0

HMIS Hazard Ratings

Health: 1
 Flammability: 2
 Reactivity: 0

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

Syngenta Hazard Category: B

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 12/8/1997

Revision Date: 6/3/2015

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Section(s) Revised: 2, 4, 7, 11

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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.