MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **SPIRIT** Product No.: A10786A

EPA Signal Word: Caution

Active Ingredient(%): Primisulfuron-Methyl (42.8%) CAS No.: 86209-51-0

Chemical Name: 3-[4,6-bis(difluoromethoxy)-pyrimidin-2-yl]-1-(2-methoxycarbonyl-phenylsulfonyl) urea

Chemical Class: Sulfonyl Urea Herbicide

Active Ingredient(%): Prosulfuron (14.2%) CAS No.: 94125-34-5

Chemical Name: 1-(4-methoxy-6-methyltriazin-2-yl)-3-[2-(3,3,3-trifluoropropyl)-phenylsulfonyl]-urea

Chemical Class: Sulfonyl Urea Herbicide

EPA Registration Number(s): 100-911 **Section(s) Revised: 1, 2, 8, 14, 15**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Corn Starch	15 mg/m³ (total) TWA; 5 mg/m³ (respirable) TWA	10 mg/m³ TWA	10 mg/m³ (total) TWA; 5 mg/m³ (respirable) TWA**	No
Primisulfuron-Methyl (42.8%)	Not Established	Not Established	Not Established	No
Prosulfuron (14.2%)	Not Established	Not Established	Not Established	No

** recommended by NIOSH

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: B, S

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Causes mild eye and skin irritation.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Tan to brown solid

Odor: Sweet

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

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison contol 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. Have the person sip a glass of water if able to swallow. 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

There is no specific antidote if this product is ingested.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method):	Not Applicable	
Flammable Limits (% in Air):	Lower: % Not Applicable	Upper: % Not Applicable
Autoignition Temperature:	Not Available	
Flammability:	Not Flammable	

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. 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.

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, PACKAGING AND USE 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 (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
Inhalation:	A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits. In case of emergency spills, use a NIOSH approved respirator with any N, R, or P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Tan to brown solid
Odor:	Sweet
Melting Point:	Not Available
Boiling Point:	Not Applicable
Specific Gravity/Density:	32.20 lbs./cu.ft.
pH:	6 - 8 (1% suspension in water)

Solubility in H2O

Primisulfuron-Methyl:	12 mg/l @ 77°F (25°C)
Prosulfuron:	29 mg/l @ 77°F (25°C)

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)

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:	None known.
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) :	> 5,050 mg/kg body weight
Dermal:	Slightly Toxic	
	Dermal (LD50 Rabbit) :	> 2,020 mg/kg body weight
Inhalation:	Practically Non-Toxic	
	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.

Other Toxicity Information

None.

Toxicity of Other Components

Corn Starch

May cause eye and skin irritation. May cause respiratory tract irritation. Low hazard for usual industrial handling.

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

Corn Starch:	None

12. ECOLOGICAL INFORMATION

Summary of Effects

Primisulfuron-Methyl:

Practically nontoxic to birds and invertebrates. Slightly toxic to fish.

Prosulfuron:

Practically nontoxic to birds, fish and invertebrates.

Eco-Acute Toxicity

Primisulfuron-Methyl:	Bees LC50/EC50 > 100 ug/bee
	Invertebrates (Water Flea) LC50/EC50 260 ppm
	Fish (Trout) LC50/EC50 70 ppm
	Fish (Bluegill) LC50/EC50 > 80 ppm
	Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,000 ppm
	Birds (8-day dietary - Mallard Duck) LC50/EC50 > 5,000 ppm
Prosulfuron:	Bees LC50/EC50 > 100 ug/bee
	Invertebrates (Water Flea) LC50/EC50 > 120 ppm
	Fish (Trout) LC50/EC50 > 160 ppm
	Fish (Bluegill) LC50/EC50 155 ppm
	Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,000 ppm
	Birds (8-day dietary - Mallard Duck) LC50/EC50 > 5,000 ppm

Eco-Chronic Toxicity

Primisulfuron-Methyl:	Fish (Fathead minnow) Early Life Stage MATC 14.6 ppm
	Invertebrate (Daphnia Magna) Life Cycle MATC 0.7 ppm
	Mallard Reproduction NOEC 500 ppm
	Bobwhite Reproduction NOEC 500 ppm
Prosulfuron:	Fish (Fathead minnow) Early Life Stage MATC 150 ppm
	Invertebrate (Daphnia Magna) Life Cycle MATC 148 ppm
	Mallard Reproduction NOEC 28 ppm
	Bobwhite Reproduction NOEC 350 ppm

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.

Air Transport - NAFTA
Not regulated.
Note: Packages imported into the US are marked, labeled and distributed with the Class 9 international shipping classification.

B/L Freight Classification

Herbicides, NOI (NMC Class 60)

Comments

Water Transport - International
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
IMDG EMS #: F-A, S-F

Air Transport - International
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
Packing Auth.: 911

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 302 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		HMIS Hazard Ratings	
Health:	1	Health:	1
Flammability:	1	Flammability:	1
Instability:	0	Reactivity:	0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 12/08/1997

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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.

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End of MSDS