

SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: MPOWER BattleFront™ 50SC Herbicide **Product use:** Herbicide.
Canada PCP Reg No.: 31325

Supplier's name and address:
AgraCity Crop & Nutrition Ltd.

320-22nd Street East
Saskatoon SK
CANADA S7K 0H1
Phone #: 1-(877) 362-3276

Emergency From Spill Tel #: 1-(613) 996-6666 (CANUTEC)

Manufacturer's name and address:
NewAgco Inc.

Orena, St. Lawrence Main Road
Christ Church, Barbados BB15029

MSDS Prepared by: NewAgco Inc.

MSDS Preparation date: March 31, 2014

MSDS Revision date: January, 2015

Reason for revision: Supplier Address Change.

SECTION 2 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Opaque white liquid. Gasoline-like odour.
CAUTION. Keep out of reach of children. May cause slight eye irritation
This product is highly toxic to green algae and aquatic plants.

POTENTIAL HEALTH EFFECTS

Target organs: Digestive system, kidney.

Signs and symptoms of short-term (acute) exposure: None known or observed.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause adverse kidney effects.

Carcinogenicity: See TOXICOLOGICAL INFORMATION (Section 11).

Other important hazards: See TOXICOLOGICAL INFORMATION (Section 11).

Potential environmental effects: This product is highly toxic to green algae and aquatic plants. See ECOLOGICAL INFORMATION (Section 12).

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Florasulam (N-(2,6-Difluorophenyl)-8-fluoro-5-methoxy[1,2,4]triazolo[1,5-c]-pyrimidine-2-sulfonamide)	145701-23-1	5.0	NE	NE
Inert ingredients:		95.0		

NE= None established

SECTION 4 — FIRST AID MEASURES

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice.
Have a person sip a glass of water if able to swallow.
Do not induce vomiting unless told to do so by a poison control centre or doctor.
Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing.
Rinse skin immediately with plenty of water for 15-20 minutes.
Call poison control centre or doctor for treatment advice.

- IF INHALED:** Move person to fresh air.
If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
Call poison control centre or doctor for further treatment advice.
- IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes.
Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

Note to Physician: No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient. Treat symptomatically.

Signs and symptoms of short-term (acute) exposure: None known or observed.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause adverse kidney effects.

Indication of any immediate medical attention and special treatment needed: Immediate medical attention is required in case of ingestion.

SECTION 5 — FIRE FIGHTING MEASURES

Flash point: None

Flammable limits (% by volume): Not applicable

Explosive properties: Not explosive

Suitable extinguishing media: Dry chemical or carbon dioxide for small fires. Water spray or foam for large fires. Avoid heavy hose streams.

Special fire-fighting procedures/equipment: Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Fire fighters should wear self-contained breathing apparatus and protective clothing.

Special hazards arising from the substance or mixture: The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, sulfur dioxide, carbon monoxide, carbon dioxide, hydrogen fluoride and various fluorinated organic compounds.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill, this may mean wearing respirator, face mask or safety glasses, chemical resistant clothing, protective gloves and rubber boots when cleaning up spills. See Section 8, Personal Protection. Stop the source of the spill immediately if safe to do so. Remove sources of ignition. Avoid and reduce mist formation as much as possible. It is recommended to have a predetermined plan for the handling of spills. Empty, closed containers for the collection of spills should be available. Reduce and avoid formation of airborne dust as much as possible.

Environmental precautions: Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

Spill response/Cleanup: If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, Fuller's earth, bentonite or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with detergent and much water. Absorb wash liquid onto inert absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and placed in suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Refer to Section 13 for disposal.

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: Avoid all personal contact with the product. Adequate ventilation or local exhaust ventilation is required. Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower using water and soap.

Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

For personal protection, see Section 8.

Do not discharge to the environment. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See Section 13 for disposal.

Storage recommendations: Store in original containers in a secure, dry heated storage. Product will freeze at 14° F (-10° C). If product is frozen, bring to room temperature and agitate before use. Do not allow contamination of seeds, plants, fertilizers or other pesticides. Do not contaminate food, feedstuffs or domestic water supplies. If containers are damaged or spill occurs, use the product immediately or contain the spill with absorbent materials and dispose of waste.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THE PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON THE CONDITIONS OF USE.

Ventilation and engineering controls: If handled indoors, adequate ventilation or local exhaust ventilation is required.

Protective gloves: Wear chemical-resistant gloves: barrier laminate, butyl rubber or nitrile rubber.

Eye protection: Wear protective eyewear, such as safety glasses or chemical goggles.

Respiratory protection: The product is not likely to present an airborne exposure concern during normal handling, but in the event of a discharge of the material which produces a heavy vapor or mist, workers should put on officially approved face mask or respiratory protection equipment with appropriate filter.

Other protective equipment: Wear long-sleeved shirt and long pants, shoes and socks. Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls or PPE will be sufficient. Discard coveralls after use if contaminated.

Permissible exposure levels: See Section 3.

General hygiene considerations: Follow manufacturer's instructions for cleaning and maintaining PPE. If not such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Opaque white liquid

Odour: Gasoline-like

Odour threshold: ND

pH: 4.04 @ 25° C (undiluted); 4.4 @ 25° C (1% dispersion in water)

Melting point: NA

Freezing point: Below 32° F (0° C)

Initial boiling point and boiling range: ND

Flash point: None

Evaporation rate: ND

Flammability: NA

Upper/lower flammability or explosive limits: Not flammable or explosive

Vapor pressure: Florasulam: 6.55×10^{-5} Pa @ 25° C

Vapor density: ND

Relative density: 1.040 g/ml @ 20° C

Solubility(ies): Solubility of Florasulam at 20° C in:

Acetone	96	g/l
Methanol	8.4	g/l
Dichloromethane	5.6	g/l
Ethyl acetate	16	g/l
N-octanol	0.16	g/l
P-xylene	0.19	g/l
N-heptane	0.036	g/l

Water	0.027	g/l @ pH 4
	4.8	g/l @ pH 7
	49	g/l @ pH 9

Partition coefficient (n-octanol/water): Florasulam: Log k_{ow} = 1.11 @ pH 3 and 25° C
 Log k_{ow} = -1.10 @ pH 7 and 25° C
 Log k_{ow} = -1.79 @ pH 10 and 25° C

Auto-ignition temperature: Not flammable up to 1110° F (600° C)

Decomposition temperature: ND

Viscosity: 1048 mPa @ 20° C
 897 mPa @ 40° C

ND: Not determined

NA: Not applicable

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: This product is stable under the recommended storage and handling conditions described in Section 7.

Hazardous polymerization: Not known to occur.

Conditions to avoid: Heating of product will produce harmful and irritant vapors.

Materials to avoid (incompatibles): None known.

Hazardous decomposition products in a fire: The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, sulfur dioxide, carbon monoxide, carbon dioxide, hydrogen fluoride and various fluorinated organic compounds.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Eyes, ingestion, skin, inhalation.

Acute toxicity: The product is not harmful by inhalation, in contact with skin or if swallowed. However, it should always be treated with the usual care of handling chemicals. The acute toxicity is estimated as:

Toxicological data (product):

LC₅₀, inhalation, rat (mg/L/4 hrs) = >5.07

LD₅₀, oral, rat (mg/kg) = >2000

LD₅₀, dermal, rat (mg/kg) = >2000

Not irritating to skin

Not irritating to eyes

Not a skin sensitizer

Carcinogenicity: No known carcinogenic effects.

Specific Target Organ Toxicity (STOT) – repeated exposure:

Florasulam: Target organ: kidney

Teratogenicity, mutagenicity, other reproductive effects: No known teratogenic, mutagenic or reproductive effects.

SECTION 12 — ECOLOGICAL INFORMATION

Environmental hazards: Overspray or drift to sensitive habitats should be avoided. A buffer zone of 30 metres is required between the downwind edge of the boom and the closest edge of sensitive terrestrial habitats including forested areas, shelter belts, woodlots, hedgerows, and shrublands. A buffer zone of 5 metres is required between the downwind edge of the boom and the closest edge of sensitive aquatic habitats including sloughs, ponds, prairie potholes, lakes, rivers, streams, wetlands and wildlife habitats at the edge of those bodies of water. Do not contaminate these habitats when cleaning and rinsing spray equipment or containers.

Ecotoxicological information: The ecotoxicity of the product is measured as:

		Florasulam
- Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>) 96-h LC ₅₀	>2100 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>) 48-h EC ₅₀	>2100 mg/l
- Algae	Green algae (<i>Selenastrum capricornutum</i>) 72-h IC ₅₀	5.6 mg/l
- Aquatic plants	Duckweed (<i>Lemna minor</i>) 7-day EC ₅₀	0.055 mg/l
- Earthworms	<i>Eisenia foetida foetida</i> 14-day LC ₅₀	> 1000 mg/kg dry soil
- Insects	Bees (<i>Apis mellifera</i>) 48-h LD ₅₀ , contact	>2100 µg/bee

48-h LD50, oral >1900 µg/bee

Environmental fate:

Florasulam: Not readily biodegradable. Does not bioaccumulate. Bioconcentration factor (BCF) is < 2.21. Mobile in soil. Has a potential for leaching to groundwater.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: To avoid wastes, use all material by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program.

Methods of disposal: Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. Refer to product label for specific container disposal instructions.

SECTION 14 — TRANSPORTATION INFORMATION

Canadian TDG information:

Road/Rail: Not regulated

Vessel: UN3082, Environmentally hazardous substance, liquid, n.o.s. (florasulam), 9, PGIII, Marine Pollutant

INTERNATIONAL:

IMDG/IMO (vessel): UN3082, Environmentally hazardous substance, liquid, n.o.s. (florasulam), 9, PGIII, Marine Pollutant

IATA/ICAO (air): UN3082, Environmentally hazardous substance, liquid, n.o.s. (florasulam), 9, PGIII, Marine Pollutant

SECTION 15 — REGULATORY INFORMATION

CANADIAN REGULATIONS:

This product has been classified in accordance with the hazard criteria for the Controlled Products Regulation (CPS) and the SDS contains all the information required by the CPR.

This product is a Pest Control Product and is not regulated as a Controlled Product under the Hazardous Product Act (HPA).

WHMIS Class/Description: Not applicable

Domestic Substances List (DSL): All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

SECTION 16 — OTHER INFORMATION

HMIS Rating: 1 Health; 0 Flammability; 0 Reactivity

NFPA Rating: 1 Health; 0 Flammability; 0 Reactivity

0-minimal 1- slight 2-moderate 3-severe 4-extreme

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SDS preparation date: March 31, 2014