

(Sleeve)

<b>GROUP</b>	<b>1</b>	<b>4</b>	<b>HERBICIDE</b>
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**SIGNAL® F Herbicide**

Emulsifiable Concentrate

**FOR SALE FOR USE ONLY IN THE PRAIRIE PROVINCES, PEACE RIVER REGION, AND  
INTERIOR OF  
BRITISH COLUMBIA**

For post-emergent weed control in spring wheat and durum wheat.

AGRICULTURAL

READ THE LABEL AND BOOKLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

ACTIVE INGREDIENT:

Fluroxypyr, present as 1-methylheptyl ester ... 217 g/L  
Clodinafop-propargyl ... 112 g/L

Contains Cloquintocet-mexyl at 28.6 g/L as a safener

REGISTRATION NO. 31434 PEST CONTROL PRODUCTS ACT

**DANGER – SKIN IRRITANT  
CAUTION – EYE IRRITANT**

Net Contents: 1 Litre to Bulk

**Nufarm Agriculture Inc.**

5101, 333 - 96th Ave NE  
Calgary, Alberta  
T3K 0S3  
1-800-868-5444

24 Hour Emergency Response Number 1-800-424-9300

## **PRECAUTIONS**

KEEP OUT OF REACH OF CHILDREN.

DANGER - SKIN IRRITANT.

CAUTION - EYE IRRITANT. Do not wear contact lenses when using.

HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.

DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.

DO NOT get in eyes. Avoid contact with skin and clothing. Avoid breathing spray mist.

Do not eat, drink or smoke while mixing, loading or during application.

Do not enter or allow worker entry during the restricted entry interval (REI) of 12 hours after application.

DO not use in residential areas. Residential areas are defined as any use site where bystanders, including children, could be exposed during or after application. This includes homes, schools, parks, playgrounds, playing fields, public buildings, or any other area where the general public, including children, could be exposed.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

## **PROTECTIVE CLOTHING AND EQUIPMENT**

**When mixing/loading**, wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical resistant footwear and protective eye wear (face shield or safety glasses). Rinse gloves before removal.

**When applying the dilute spray solution or during clean-up or repairing equipment**, wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical resistant footwear. Rinse gloves before removal. Gloves are not required during application when applicator is in an enclosed tractor.

## **FIRST AID**

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. 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 a poison control centre or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a 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.

## **TOXICOLOGICAL INFORMATION**

This product contains petroleum distillates. DO NOT INDUCE VOMITING. Vomiting may cause aspiration pneumonia. Treat symptomatically for ingestion and/or skin and eye contact.

## **EMERGENCY TELEPHONE NUMBERS**

For spills or transportation accidents, Chemtrec, 1-800-424-9300.

For health or environmental emergencies, ProPharma Group, 1-877-325-1840.

For product and use information, Nufarm Agriculture Inc., 1-800-868-5444.

## **ENVIRONMENTAL PRECAUTIONS**

This product contains active ingredients and an aromatic petroleum distillate which are toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning of equipment.

TOXIC to non-target terrestrial plants and aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

## **STORAGE**

Store in original containers in a secure, dry heated storage. If product is frozen, bring to room temperature and agitate before use. Do not allow contamination of seeds, plants, fertilizers or other pesticides. To prevent contamination, store this product away from food or feed. If containers are damaged or spill occurs, use the product immediately or contain the spill with absorbent materials and dispose of waste.

## **DISPOSAL**

### **Recyclable Containers:**

Do not reuse this container for any purpose. This is a recyclable container and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

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For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER**

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19-2782

(Booklet)

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## **OPERATOR USE PRECAUTIONS**

Wear freshly laundered clothing and clean protective equipment daily. At completion of spraying or end of the day take a shower immediately. Wash thoroughly with soap and water before eating, drinking, smoking or using the toilet. Remove contaminated clothing at the end of the work session and store and wash separately from household laundry using detergents and hot water before reuse. If herbicide penetrates clothing, remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Avoid contact with eyes, skin and clothing. Avoid breathing spray mist.

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**GENERAL INFORMATION**

**SIGNAL® F Herbicide** is a systemic, postemergence herbicide for the control of kochia, cleavers, wild oats, green foxtail, yellow foxtail, barnyard grass, volunteer oats, volunteer canary seed and suppression of wild buckwheat in wheat (spring and durum) in the Prairie Provinces, Peace River Region and Interior of British Columbia.

Thorough coverage of the plants is essential for consistent control.

**SIGNAL F Herbicide** can be tank-mixed with 2,4-D and MCPA herbicides to provide a broader spectrum of weed control. Refer to the appropriate tank mix sections.

**GENERAL USE PRECAUTIONS****Sensitive Plants**

Do not apply **SIGNAL F Herbicide** directly to, or otherwise permit it to come in direct contact with susceptible crops or desirable plants including alfalfa, edible beans, canola, flowers and ornamentals, lentils, lettuce, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tomatoes or tobacco.

**Non-Target Sites**

Do not apply where proximity of susceptible crops or other desirable plants is likely to result in exposure to spray or spray drift. See the Environmental Hazards section of the label.

**Crop Rotation**

Fields previously treated with **SIGNAL F Herbicide** can be seeded the following year to barley, canola, flax, forage grasses, lentils, mustard, oats, peas, rye or wheat or fields can be summerfallowed.

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) coarse classification. Boom height must be 60 cm or less above the crop or ground.

**Buffer Zones**

Spot treatments using hand-held equipment DO NOT require a buffer zone.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested



areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:				
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial Habitat
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	Spring wheat and durum wheat	15	15	15	15	15

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

#### **Spray Equipment Precaution**

Do not apply through any type of irrigation system.

#### **DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.**

#### **To Reduce Spray Drift:**

- Use nozzles delivering higher volumes and coarser droplets.
- Use low pressures (200 to 275 kPa).
- Use 100 L/ha of spray solution.
- Spray when the wind velocity is 15 km/h or less.
- Spot treatments should only be applied with a calibrated boom to prevent over-application.

#### **Equipment Clean-Up**

Equipment used to apply **SIGNAL F Herbicide** should not be used to apply other pesticides to sensitive crops without thorough cleaning. Contact your **SIGNAL F Herbicide** dealer for detailed equipment cleaning procedures.

#### **DIRECTIONS FOR USE**

READ THE ENTIRE LABEL BEFORE USE. FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN ERRATIC WEED CONTROL OR CROP DAMAGE. DO NOT APPLY TO CROPS UNDERSEEDED WITH LEGUMES.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

## Crops Registered

Spring wheat  
Durum wheat

### SIGNAL F HERBICIDE ALONE

Apply **SIGNAL F Herbicide** at 0.5 L/ha with **Nufarm Enhance**<sup>®</sup> at 0.25%v/v (0.25 L of Nufarm Enhance in 100 L water).

### Weeds Controlled or Suppressed by SIGNAL F Herbicide Alone at 0.5 L/ha

Weeds Controlled	Weed Stage
cleavers	1- to 4-whorls
kochia <sup>1</sup>	2- to 8-leaf
volunteer flax	1 to 12 cm
wild oats <sup>2</sup>	1- to 6-leaf
volunteer canary seed <sup>2</sup>	1- to 5-leaf
volunteer (tame) oats <sup>2</sup>	3- to 6-leaf
barnyard grass <sup>3</sup>	1- to 5-leaf
green foxtail and yellow foxtail <sup>4</sup>	1- to 5-leaf
<b>Weed Suppressed</b>	
wild buckwheat	1- to 4-leaf

<sup>1</sup>Including biotypes resistant to Group 2 herbicides that inhibit the ALS enzyme

<sup>2</sup>Prior to emergence of 4<sup>th</sup> tiller

<sup>3</sup>For optimal control, apply before tillering, and while weed is actively growing

<sup>4</sup>For optimal control, apply prior to emergence of the 3<sup>rd</sup> tiller and while foxtail is actively growing

**NOTE: SIGNAL F Herbicide** activity is influenced by weather conditions. Optimum activity requires active crop and weed growth. The temperature range for optimum activity is 12°C to 24°C. Reduced activity will occur when temperatures are below 8°C or above 27°C. Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance. Weed control may be reduced during stress conditions, e.g. drought, heat or cold stress, or if weeds have initiated flowering, or if heavy infestations exist.

## APPLICATION DIRECTIONS

### Application Timing

Apply to actively growing wheat from the 2-leaf crop growth stage up to and including just prior to the emergence of 4<sup>th</sup> tiller.

Apply when weeds are actively growing. Best results are obtained from applications made to seedling weeds. Only weeds that have emerged at the time of treatment will be controlled. Extreme growing conditions such as drought or near freezing temperature prior to, at and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth.

Foliage that is wet at the time of application may decrease control. **SIGNAL F Herbicide** applications are rainfast within 1 hour after application.

Under conditions of low crop and high weed density, control may be reduced.

**Preharvest/Grazing Intervals (SIGNAL F Herbicide applied alone)**

- Livestock may be grazed on treated crops 3 days following application.
- Do not harvest the treated crop within 60 days after application.

**SIGNAL F HERBICIDE + NUFARM 2,4-D ESTER 700 HERBICIDE**

For control of a wide spectrum of broadleaved weeds (see following table) apply **SIGNAL F Herbicide** tank mixed with **Nufarm 2,4-D Ester 700 Herbicide**. Apply postemergence when weeds are in the seedling stage and when spring wheat and durum wheat are in the 4-leaf to flag-leaf stage. Application before the 4-leaf stage of wheat may cause severe twisting of leaves and stem, and head deformities which may reduce yield up to 10%. Do not apply later than the flag-leaf stage.

**Crops:** spring wheat and durum wheat

**Rate of Application**

SIGNAL F Herbicide Rate	Nufarm 2,4-D Ester 700 Rate	Nufarm Enhance Rate
0.50 L/ha	Up to 0.85 L/ha (560 g a.e./ha)	0.25% v/v

Apply a uniform spray in a minimum of 100 L of water per hectare to thoroughly cover the weeds.

**Weeds Controlled or Suppressed by SIGNAL F Herbicide + Nufarm 2,4-D Ester 700 (at 0.85 L/ha) Tank Mix**

All weeds controlled and suppressed by **SIGNAL F Herbicide** alone **plus:**

**Weeds Controlled:**

blue lettuce <sup>1</sup>	goat's-beard	redroot pigweed
bluebur	green tansy mustard	Russian thistle
burdock	gumweed	shepherd's-purse
canola (volunteer)	hairy galinsoga	smartweed
clovers (sweet)	hedge bindweed	stinkweed
cocklebur	hoary cress <sup>1</sup>	stork's-bill (1- to 8-leaf)
dandelion <sup>2</sup>	lady's-thumb	sunflower (annual)
docks	lamb's-quarters	Tartary buckwheat
dog mustard	leafy spurge <sup>1</sup>	vetch
field bindweed <sup>1</sup>	oak-leaved goosefoot	wild buckwheat (1- to 4-leaf)
field horsetail <sup>1</sup>	plantain	wild mustard
field peppergrass	prickly lettuce	wild radish
flixweed	ragweed	

**Weeds Supressed:**

Canada thistle <sup>1</sup>	sow-thistle (annual)
sow-thistle (perennial) <sup>1</sup>	

<sup>1</sup> Top growth control only

<sup>2</sup> Spring rosettes

**Pre-Harvest/Grazing Intervals (SIGNAL F Herbicide + Nufarm 2,4-D Ester 700 Herbicide)**

- Do not permit lactating dairy animals to graze fields within 7 days after application.
- Do not harvest forage or cut hay within 30 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.
- Do not harvest the treated mature crop within 60 days after application.

**SIGNAL F HERBICIDE + NUFARM MCPA ESTER 600 HERBICIDE**

For control of a wide spectrum of broadleaved weeds (see following table) apply **SIGNAL F Herbicide** tank mixed with **Nufarm MCPA Ester 600 Herbicide**. Apply postemergence when weeds are in the seedling stage and when spring wheat and durum wheat are in the 3-leaf to 4<sup>th</sup> tiller stage. Application before the 3-leaf stage of wheat may cause severe twisting of leaves and stem, and head deformities which may reduce yield up to 10%. Do not apply later than the 4<sup>th</sup> tiller stage. Do not apply to cereals underseeded with a legume. Follow all precautions, minimal interval to harvest and directions for use (including timing of application) on the **SIGNAL F Herbicide** and tank mix partner labels.

**Rate of Application**

<b>SIGNAL F Herbicide Rate</b>	<b>Nufarm MCPA Ester 600 Rate</b>	<b>Nufarm Enhance Rate</b>
0.50 L/ha	Up to 0.93 L/ha (560 g a.e./ha)	0.25% v/v

Apply a uniform spray in a minimum of 100 L of water per hectare to thoroughly cover the weeds.

**Weeds Controlled or Suppressed by SIGNAL F Herbicide + Nufarm MCPA Ester 600 Herbicide (at 0.93 L/ha) Tank Mix**

All weeds controlled and suppressed by **SIGNAL F Herbicide** alone **plus**:

**Weeds Controlled:**

burdock, common	lamb's-quarters	shepherd's-purse
canola, volunteer	mustard (except dog & green tansy)	stinkweed
cocklebur	pigweed, redroot (1- to 4-leaf)	sunflower, annual
flixweed	prickly lettuce	vetch
hempnettle (2- to 6-leaf)	ragweed, common	wild radish

**Weed Suppressed:**

green smartweed

**Pre-Harvest/Grazing Intervals (SIGNAL F Herbicide + Nufarm MCPA Ester 600 Herbicide)**

- Allow 7 days between application and grazing/cutting for hay.
- Do not harvest the treated mature crop within 60 days after application.

**RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that **SIGNAL F Herbicide** is a Group 1 and 4 herbicide. Any weed population may contain plants naturally resistant to **SIGNAL F Herbicide**

and Group 1 and 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of **SIGNAL F Herbicide** or other Group 1 and 4 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information and to report suspected resistance, contact Nufarm Agriculture Inc. at 1-800-868-5444 or at [www.nufarm.ca](http://www.nufarm.ca).

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