GROUP 14 HERBICIDE

# AUTHORITY STRIKE<sup>™</sup> Herbicide

# Suspension emulsion

# COMMERCIAL

For preplant or preemergence burndown and extended control of labeled weed species in chickpeas, faba beans, field peas, flax, mustard (oilseed and condiment types), soybeans, sunflowers and wheat (spring and durum).

ACTIVE INGREDIENTS:	Sulfentrazone	380 g/L
	Carfentrazone-ethyl	42 g/L

Contains 5-chloro-2-methyl-4-isothiazolin-3-one at 0.0017% and 2-methyl-4-isothiazolin-3-one at 0.00056% as preservatives.

OR

Contains 1,2-benzisothiazolin-3-one at 0.029% as a preservative.

OR

Contains sodium o-phenylphenate at 0.095% as a preservative.

**REGISTRATION NO.:** 34867 PEST CONTROL PRODUCTS ACT

# READ LABEL AND ATTACHED BOOKLET BEFORE USING

# **KEEP OUT OF THE REACH OF CHILDREN**

# **NET CONTENTS:** 1 L to bulk

FMC of Canada Limited 6755 Mississauga Road, Suite 204 Mississauga, ON L5N 7Y2 1-833-362-7722

# IN CASE OF EMERGENCY, CALL 1-800-331-3148 (24 HOURS).

## NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

#### PRECAUTIONS

#### KEEP OUT OF THE REACH OF CHILDREN.

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** May irritate the eyes and skin. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Do not store near heat or open flame.

#### DO NOT APPLY BY AIR.

Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

#### PERSONAL PROTECTIVE EQUIPMENT

Wear a long-sleeved shirt, long pants, chemical-resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Remove clothing immediately if pesticide gets inside. Then bathe thoroughly and put on clean clothing.

#### **RESTRICTED-ENTRY INTERVAL**

**DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

## FIRST AID

**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 IMMEDIATELY for further treatment advice.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control centre or doctor for treatment advice.

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15 to 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.

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

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

You may also call 1-800-331-3148 for emergency medical treatment information.

## TOXICOLOGICAL INFORMATION

Treat symptomatically.

## **ENVIRONMENTAL PRECAUTIONS**

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

Toxic to small wild mammals.

This product contains aromatic petroleum distillates, which are toxic to aquatic organisms.

Sulfentrazone is persistent and may carry over. It is recommended that this product not be used in areas treated with any products containing sulfentrazone during the previous 24 months.

This product demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. **DO NOT** use on coarse soils.

To reduce run-off 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 filter strip between the treated area and the edge of the water body.

# **STORAGE**

Store this product away from food or feed.

Store above 5°C to keep product from freezing. If product does freeze, thaw before use. If solid crystals are observed, warm material to above 15 °C by placing container in warm location. Shake or roll container periodically to re-dissolve solids.

Do not use or store near heat or open flame.

Store in original containers only. Store containers in a dry location. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

# **DISPOSAL**

#### For refillable containers:

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. DO NOT reuse this container for any other purpose.

#### For returnable containers:

DO NOT reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

#### For 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.

If there is no container collection site in your area, dispose of the container in accordance with Provincial/territorial requirements.

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

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GROUP 14 HERBICIDE

# AUTHORITY STRIKE<sup>™</sup> Herbicide

# Suspension emulsion

# COMMERCIAL

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OR

Contains 1,2-benzisothiazolin-3-one at 0.029% as a preservative.

OR

Contains sodium o-phenylphenate at 0.095% as a preservative.

# **REGISTRATION NO.:** 34867

PEST CONTROL PRODUCTS ACT

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## NOTICE TO USER

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#### PRECAUTIONS

#### KEEP OUT OF THE REACH OF CHILDREN.

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Wash thoroughly with soap and water after handling. Do not store near heat or open flame.

#### DO NOT apply by air.

Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

#### PERSONAL PROTECTIVE EQUIPMENT

Wear a long-sleeved shirt, long pants, chemical-resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Remove clothing immediately if pesticide gets inside. Then bathe thoroughly and put on clean clothing.

#### **RESTRICTED-ENTRY INTERVAL**

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#### FIRST AID

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## TOXICOLOGICAL INFORMATION

Treat symptomatically.

## **ENVIRONMENTAL PRECAUTIONS**

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

Toxic to small wild mammals.

This product contains aromatic petroleum distillates, which are toxic to aquatic organisms.

Sulfentrazone is persistent and may carry over. It is recommended that this product not be used in areas treated with any products containing sulfentrazone during the previous season.

This product demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. **DO NOT** use on coarse soils.

To reduce run-off 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 filter strip between the treated area and the edge of the water body.

# **STORAGE**

Store this product away from food or feed.

Store above 5°C to keep product from freezing. If product does freeze, thaw before use. If solid crystals are observed, warm material to above 15 °C by placing container in warm location. Shake or roll container periodically to re-dissolve solids.

Do not use or store near heat or open flame.

Store in original containers only. Store containers in a dry location. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

# **DISPOSAL**

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- 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/territorial regulatory agency. Contact the manufacturer and the provincial/territorial regulatory agency in case of a spill, and for clean-up of spills.

## **GENERAL INFORMATION**

AUTHORITY STRIKE<sup>™</sup> Herbicide is a selective herbicide that provides contact control of emerged weeds and extended control of un-emerged weed species. This product may be applied prior to planting or to the emergence of chickpeas, faba beans, field peas, flax, mustard (oilseed and condiment types), soybeans, sunflowers and wheat (spring and durum).

#### **PROPER HANDLING INSTRUCTIONS**

AUTHORITY STRIKE<sup>™</sup> Herbicide may not be mixed or loaded within 15 meters of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams or rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pads or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing or washing of this product into or from pesticide handling or application equipment or containers within 15 metres of any well, are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad

shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. Provinces may have in effect additional requirements regarding wellhead setbacks and operational containment.

AUTHORITY STRIKE<sup>™</sup> Herbicide must be used in a manner which will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

#### **DIRECTIONS FOR USE**

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.

AUTHORITY STRIKE<sup>™</sup> Herbicide is to be mixed with water and applied preplant or preemergence to chickpeas, faba beans, field peas, flax, mustard (oilseed and condiment types), soybeans, sunflowers and wheat (spring and durum).

Control of emerged weeds is optimized when the product is applied to actively growing weeds up to 10 cm in height, or as specified. Within a few hours following application, the foliage of emerged susceptible weeds shows signs of desiccation, and in subsequent days, necrosis and death of the plant occur.

Extremes in environmental conditions such as temperature, moisture, soil conditions, and cultural practices may affect the activity of AUTHORITY STRIKE<sup>™</sup> Herbicide on emerged weeds. Under warm moist conditions, herbicide symptoms may be accelerated. While under very dry conditions, the expression of herbicide symptoms may be reduced as weeds hardened off by drought are less susceptible to AUTHORITY STRIKE<sup>™</sup> Herbicide.

The extended control activity of AUTHORITY STRIKE<sup>TM</sup> Herbicide requires adequate moisture for herbicidal activation. The ultimate amount of moisture, whether supplied by rainfall or irrigation, is dependent on several factors, including but not limited to, existing soil moisture at application and soil characteristics. Adequate moisture of at least  $\frac{1}{2}$  inch (13 mm) is required within 14 days after application for optimal extended control. If adequate rainfall is not received in a timely fashion, irrigate with a minimum of  $\frac{1}{2}$  inch (13 mm). Do not apply heavy irrigation immediately after application.

Under normal growing conditions, AUTHORITY STRIKE<sup>™</sup> Herbicide exhibits excellent crop safety. Poor growing conditions, such as excessive moisture, cool temperatures and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions, AUTHORITY STRIKE<sup>™</sup> Herbicide can contribute to a negative crop response.

<u>Field sprayer application:</u> 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) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

## SPRAY BUFFER ZONES

The spray 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) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of	Method of Spray Buffer Zones (m) require protection of:		ed for the	
application	Crop Freshwater habitat of depths:		Terrestrial	
		< 1 m	> 1 m	habitat
Field sprayer	Chickpea, faba bean, field pea, flax, mustard (oilseed and condiment types), sunflower, soybean, wheat (spring and durum)	1	0	10

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray 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 spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

## **APPLICATION RATES**

AUTHORITY STRIKE<sup>™</sup> Herbicide may be applied as a preplant or preemergence application to chickpeas, faba beans, field peas, flax, soybeans and sunflowers at a rate of 280 to 400 mL/ha. For use in mustard (oilseed and condiment types) and spring and durum wheat, only the lower rate of 280 mL/ha may be applied. A single ground application of this product can be applied every other year.

The rates of AUTHORITY STRIKE<sup>™</sup> Herbicide that can be used on labelled crops are summarized in the following table:

Сгор	Rate (mL/ha)	Notes
Mustard (oilseed and condiment types)	280	Make one preplant or preemergence (up to 3 days
Spring and durum wheat		after seeding) application — every other year
Chickpeas		
Faba bean		Apply in a minimum of 100 L of
Field peas	280 – 400	water/ha
Flax	280 – 400	
Soybeans		Crop injury may occur in years with greater than normal
Sunflowers		rainfall

**DO NOT** apply to soils classified as coarse-textured soils.

**DO NOT** apply to fine textured soils with less than 1.5% organic matter.

**DO NOT** apply in any type of soils with an organic matter content greater than 6%.

**DO NOT** use on soils with a pH of 7.8 or greater.

DO NOT apply AUTHORITY STRIKE<sup>™</sup> Herbicide (or any other product containing sulfentrazone) to spring wheat if an application of FOCUS<sup>®</sup> Herbicide (or any other product containing pyroxasulfone) was applied in the previous fall.

## ADJUVANT RECOMMENDATIONS

When using AUTHORITY STRIKE<sup>™</sup> Herbicide alone, an adjuvant is required. Use a non-ionic surfactant at 0.25% v/v (0.25 L per 100 L of spray solution) or Merge<sup>®</sup> Adjuvant at 1% v/v (1 L per 100 L of spray solution). An adjuvant is not required when AUTHORITY STRIKE<sup>™</sup> Herbicide is applied with glyphosate.

#### WEEDS CONTROLLED

When used as directed, AUTHORITY STRIKE<sup>™</sup> Herbicide will control emerged weeds up to 10 cm in height, or as specified. This product will also provide extended control of certain un-emerged weed species. Refer to the following table for a list of weeds controlled at each application rate.

Rate	Weeds Controlled		
(mL/ha)	Burndown Control (emerged weeds only)	Extended Control (un-emerged weeds only)	
280	Common lamb's-quarters <sup>2</sup> Black nightshade <sup>1</sup> Eastern black nightshade <sup>1</sup> Morning glory <sup>3</sup> Redroot pigweed Tall waterhemp <sup>1</sup> Velvetleaf	Kochia	
400	All the weeds controlled at 280 mL/ha plus the weeds listed below: Carpetweed Cleavers Cocklebur Common lamb's-quarters Common purslane Common waterhemp Black nightshade Eastern black nightshade Flixweed Hairy nightshade Jimsonweed Kochia Morning glory Pennsylvania smartweed (seedling) Pigweed (prostrate, smooth, tumble) Russian thistle <sup>1</sup> Shepherd's purse Stinkweed	All the weeds controlled at 280 mL/ha plus the weeds listed below: Cleavers (suppression) <sup>4</sup> Common groundsel Common lamb's-quarters Common purslane Common waterhemp Eastern black nightshade Large crabgrass Powell pigweed Redroot pigweed Smooth crabgrass Wild buckwheat Yellow woodsorrel	

Dete	Weeds Controlled			
Rate (mL/ha)	Burndown Control (emerged weeds only)	Extended Control (un-emerged weeds only)		
	Tall waterhemp			
	Tansy mustard			
	Volunteer canola (including glyphosate- tolerant)			

<sup>1</sup>Up to 5 cm tall

<sup>2</sup>Up to 7.5 cm tall

<sup>3</sup>Up to 3 leaves

<sup>4</sup>Weed suppression is a visual reduction in weed competition (reduced population or vigour) as compared to an untreated area. Degree of suppression will vary with size of weed and environmental conditions prior to and following treatment.

# TIMING OF APPLICATION

#### Spring Application

AUTHORITY STRIKE<sup>™</sup> Herbicide can be applied in the spring as a pre-plant or preemergence application up to 3 days after seeding.

Do not mechanically incorporate as this can destroy the herbicide barrier and allow weeds to escape.

#### Fall Application

In Western Canada only, AUTHORITY STRIKE<sup>™</sup> Herbicide can be applied in the fall for burndown control of labelled, emerged broadleaf weeds and for extended control or suppression of labelled weeds the following spring. Chickpeas, faba beans, field peas, flax, soybeans and sunflowers can be planted in the spring after a fall application of AUTHORITY STRIKE<sup>™</sup> Herbicide. Mustard (oilseed and condiment types) and wheat (spring or durum) can be planted if the lower rate (280 mL/ha) of AUTHORITY STRIKE<sup>™</sup> Herbicide was applied the previous fall. If the higher rate was used, wait 12 months before planting mustard or wheat.

AUTHORITY STRIKE<sup>™</sup> Herbicide should be applied to stubble or soil surface to allow moisture from rainfall or snowmelt to move the product into the soil. Apply the product in the fall when the average soil temperature is below 10°C.

Do not mechanically incorporate in the fall or spring as this can destroy the herbicide barrier and allow weeds to escape.

Do not apply to frozen soils or existing snow cover to prevent run-off of AUTHORITY STRIKE<sup>™</sup> Herbicide.

## TANK MIXES

This product may be tank mixed with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact FMC of Canada Ltd. at 1-833-362-7722 for information before applying any tank mix that is not specifically recommended on this label.

## AUTHORITY STRIKE™ HERBICIDE PLUS GLYPHOSATE

Apply AUTHORITY STRIKE<sup>™</sup> Herbicide, at 280 mL/ha for mustard (oilseed and condiment types) and wheat (spring and durum), and 280 to 400 mL/ha for chickpeas, faba beans, field peas, flax, soybeans and sunflowers, in combination with registered glyphosate products at 450 to 900 grams of ae/ha.

Use 100 L/ha water and ensure good coverage for maximum performance.

An adjuvant is not required for this tank mix.

This tank mix will control weeds listed on this label, corresponding to the rate of AUTHORITY STRIKE<sup>™</sup> Herbicide applied, as well as those listed in the following table. Note that these weeds must be emerged at the time of application to be controlled by the glyphosate portion of this tank mix.

Rate of Glyphosate	Weeds controlled
	Green foxtail
450 m a a /h a 1	Lady's thumb
	Volunteer barley
450 g ae/ha¹	Volunteer wheat
	Wild mustard
	Wild oats
	Weeds controlled by the 450 g ae/ha rate plus:
	Canada fleabane (less than 8 cm in height)
	Common ragweed (less than 8 cm in height)
	Downy brome
450 685 g ac/ba1	Giant foxtail
450-685 g ae/ha¹	Hemp nettle
	Persian darnel
	Volunteer flax
	Narrow-leaved hawk's beard <sup>2</sup>
	Wild buckwheat <sup>3</sup>
	Weeds controlled by the 450-685 g ae/ha rate plus:
	Annual bluegrass
810 g ae/ha <sup>1</sup>	Annual sow thistle
o lo g ae/lla	Crab grass
	Narrow-leaved vetch
	Prickly lettuce
	Weeds controlled by the 810 g ae/ha rate plus:
	Canada thistle (rosette stage; summerfallow)
900 g ae/ha¹	Dandelion (less than 15 cm)
	Quackgrass (light to moderate infestations, 3-4 green leaves or
	more)
	are controlled by this rate uplace otherwise exectified

<sup>1</sup>Weeds up to 15 cm in height are controlled by this rate unless otherwise specified

<sup>2</sup> Narrow-leaved hawk's-beard: use 450 g ae/ha if less than 8cm in height or 685 g ae/ha if 8-15 cm

<sup>3</sup> Wild buckwheat: use 450 g ae/ha if less than 3 leaves or 685 g ae/ha if 3-4 leaf stage

# AUTHORITY STRIKE™ HERBICIDE PLUS AIM<sup>®</sup> EC HERBICIDE

When using the lower rate of AUTHORITY STRIKE<sup>™</sup> Herbicide, the product can be mixed with AIM<sup>®</sup> EC Herbicide to increase the spectrum of emerged weeds controlled. The following table outlines the amount of AIM<sup>®</sup> EC Herbicide that can be added to AUTHORITY STRIKE<sup>™</sup> Herbicide and the weeds controlled.

Rate of		Weeds Controlled	
AUTHORITY Rate of AIM <sup>®</sup> STRIKE™ EC Herbicide Herbicide (mL/ha) (mL/ha)		Burndown (emerged weeds only¹)	Extended Control (Un-emerged weeds )
280	9	Common lamb's-quarters Common purslane Common waterhemp Black nightshade <sup>2</sup> Eastern black nightshade <sup>2</sup> Flixweed Hairy nightshade Morning glory Pennsylvania smartweed (seedling) Pigweed (prostrate, redroot, smooth, tumble) Round-leaved mallow Stinkweed Tall waterhemp Tansy mustard Velvetleaf	Kochia
	24	All the weeds controlled at 280 mL/ha of AUTHORITY STRIKE™ Herbicide plus 9 mL/ha of AIM® EC Herbicide plus the weeds listed below: Carpetweed Cleavers Cocklebur Black nightshade Eastern black nightshade Jimsonweed Kochia Russian thistle <sup>2</sup> Shepherd's purse Volunteer canola (including glyphosate-tolerant)	

<sup>1</sup>Controls weeds up to 10 cm in height, unless otherwise specified. <sup>2</sup>Up to 5 cm tall

This tank-mix is not for use on condiment type mustard

Use a non-ionic surfactant at 0.25% v/v (0.25 L per 100 L of spray solution) or Merge<sup>®</sup> Adjuvant at 1% v/v (1 L per 100 L of spray solution) with this tank mix.

# **APPLICATION INFORMATION**

AUTHORITY STRIKE<sup>™</sup> Herbicide can be applied with conventional ground spraying equipment once every other year. Water must be used as the carrier for AUTHORITY STRIKE<sup>™</sup> Herbicide. Do not allow spray mixtures to sit overnight due to potential settling of product and difficulty in resuspending may occur. Avoid spray drift to adjacent plants as injury to other plants may occur.

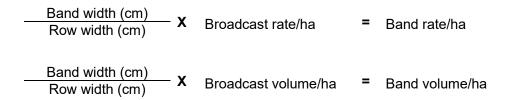
# **GROUND APPLICATION**

Utilize a boom and nozzle sprayer or boomless ground sprayer equipped with the appropriate nozzles, spray tips and screens and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Utilize nozzles and pressures that produce a medium spray as classified by the American Society of Agricultural Engineers (ASAE) to avoid spray drift or inadequate foliar and soil coverage. Consult with spray nozzle manufacturer's charts to determine the correct nozzle and pressure combination required to achieve a medium spray. Utilize nozzles that produce minimal amounts of fine spray droplets to avoid spray drift or inadequate foliar and soil coverage. Do not exceed 175 kPa spray pressure unless otherwise required by the manufacturer of drift reducing nozzles or boomless application systems. Apply a minimum of 100 litres of finished spray per hectare by ground. Be aware that spray pattern overlaps and slower ground speeds while starting, stopping or turning while spraying may result in excessive application and subsequent crop response.

# BAND APPLICATION

When applied as a banded treatment (50% band or less), refer to formula in chart below for rate and volume. AUTHORITY STRIKE<sup>™</sup> Herbicide may be applied once every other year.

For band treatments, apply the broadcast equivalent rate and volume per ha. To determine these:



## SPRAY DRIFT MANAGEMENT

Minimizing spray drift at the application site is the responsibility of the applicator and the grower. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

## CONTROLLING SPRAY DROPLET SIZE

**Volume:** Use high flow rate nozzles to apply the greatest practical spray volume. Nozzles with higher rated flow generally produce larger droplets.

**Pressure:** When higher flow rates are needed, use higher flow rate nozzles rather than increasing spray pressure. Do not exceed the nozzle manufacturer's recommended pressures. Lower pressure produces larger droplets in many types of nozzles.

**Nozzle Type:** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles for ground applications.

## RAINFALL REQUIREMENT

All soil applications of AUTHORITY STRIKE<sup>™</sup> Herbicide require at least ½ inch (13 mm) of moisture for herbicidal activation. The ultimate amount of moisture, whether supplied by rainfall or irrigation, is dependent on several factors. These factors include, but are not limited, to existing soil moisture at application, soil type, organic matter and pH. In crop situations, dependent on rainfall, AUTHORITY STRIKE<sup>™</sup> Herbicide can await activating moisture for extended periods (10 to 14 days or longer) depending on the soil parameters described above. Once activated, AUTHORITY STRIKE<sup>™</sup> Herbicide will provide activity on existing weeds. When activating moisture is received after dry conditions, AUTHORITY STRIKE<sup>™</sup> Herbicide may provide a reduced level of control of susceptible germinating weeds.

In circumstances where prolonged periods without rainfall or irrigation are not possible, alternative or additional weed management practices (cultivation or post-applied herbicides) may be required.

#### INFLUENCE OF SOIL TYPE, ORGANIC MATTER AND PH ON AUTHORITY STRIKE™ HERBICIDE USE RATES AND CROP RESPONSE

Soil organic matter content can vary widely and independently of soil type and requires an accurate analysis of representative soil samples to determine its content. Soil pH also exerts a dramatic effect on sulfentrazone availability in the soil solution. As soil pH increases, sulfentrazone availability increases. Determining soil pH requires an accurate analysis of representative soil samples. **DO NOT** apply to coarse soils (refer to soil classification chart).

Coarse*	Medium	Fine
Sand Loamy sand Sandy loam	Sandy clay loam Sandy clay Loam Silt loam Silt	Silty clay loam Silty clay Clay loam Clay

\*Do not use AUTHORITY STRIKE<sup>™</sup> Herbicide on coarse soils.

The total amount of sulfentrazone available in solution, in any given soil, is determined by the interaction of soil type (primarily clay content), % organic matter and pH. The application timing (relative to the emergence of the crop and weeds) and amount of rainfall and/or irrigation received will ultimately determine, in conjunction with the soil parameters and pH, the amount of sulfentrazone in soil solution. AUTHORITY STRIKE™ Herbicide can await activating moisture; however, diminished weed control may result due to the successive increase in weed growth versus timing of activation.

Irrigation with highly alkaline water (high pH) following an AUTHORITY STRIKE<sup>™</sup> Herbicide soil application can also significantly increase the amount of sulfentrazone available in the soil solution. Irrigation with water having a pH greater than 7.5 could result in adverse crop response. This response will ultimately depend on initial AUTHORITY STRIKE<sup>™</sup> Herbicide application rate, timing, amount and pH of irrigation water and sensitivity of the crop and its growth stage when irrigated. The risk of adverse crop response will lessen with the advances in growth stages among most crops.

Sulfentrazone is persistent and will last in the soils (carryover) for one to two years. DO NOT APPLY AUTHORITY STRIKE<sup>™</sup> HERBICIDE TO FIELDS PREVIOUSLY TREATED WITH ANY SULFENTRAZONE-CONTAINING PRODUCT IN CONSECUTIVE YEARS (24 MONTHS).

In case of drought in any of those years, a subsequent application of AUTHORITY STRIKE<sup>™</sup> Herbicide should be further delayed by the equivalent number of years in which drought occurred.

#### SPRAY TANK PREPARATION

It is important that spray equipment is clean and free of existing pesticide deposits before using this product. Follow the spray tank clean out procedures specified on the label of product previously applied before adding AUTHORITY STRIKE<sup>™</sup> Herbicide to the tank.

### MIXING AND LOADING INSTRUCTIONS

AUTHORITY STRIKE<sup>™</sup> Herbicide is a suspension emulsion intended for dilution with water. For best results, fill spray tank with one half of the volume of clean water needed for the area to be treated. Start the agitation system. Slowly add the AUTHORITY STRIKE<sup>™</sup> Herbicide to the spray tank. Complete filling the spray tank to the desired level. Continuous spray tank agitation is required at all times to maintain a uniform spray solution. Make sure AUTHORITY STRIKE<sup>™</sup> Herbicide is thoroughly mixed before application.

Use the AUTHORITY STRIKE<sup>™</sup> Herbicide mixture immediately after mixing. Do not store the sprayer overnight or for any extended period of time with the spray mixture remaining in the tank. Premixing AUTHORITY<sup>®</sup> 480 Herbicide spray solutions in nurse tanks is not recommended.

**Tank Mixtures:** Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the following order:

- Wettable powders and dispersible granules
- Agitate tank mix thoroughly
- Micro-encapsulated suspensions
- Liquid flowables and suspensions
- Emulsifiable concentrate formulations
  - Fill spray tank nearly full of water
- **G**lyphosate formulations
- Surfactants
  - Complete filling the spray tank to the desired level

## SPRAYER EQUIPMENT CLEANOUT

After spraying AUTHORITY STRIKE<sup>™</sup> Herbicide and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure:

- 1. Drain sprayer tank, hoses, and spray boom. Use a high-pressure detergent wash to remove physical sediment and residues from the inside of the sprayer tank and thoroughly rinse. Then thoroughly flush all sprayer hoses, booms, and nozzles with clean water.
- 2. Prepare a sprayer cleaning solution by adding 3 L of ammonia (containing at least 3% active) per 100 L of clean water. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush hoses, spray boom and spray nozzles.
- 3. Convenient and thorough cleaning of the sprayer can be achieved if the ammonia solution or fresh water is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.

- 4. Drain the sprayer system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and all strainers and screens separately in an ammonia solution.
- 5. Properly dispose of all cleaning solution and rinsate in accordance with provincial guidelines and regulations.

DO NOT drain or flush equipment on or near desirable trees or plants.

**DO NOT** contaminate any body of water including irrigation water that may be used on other plants or crops.

**IMPORTANT: DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. For any requirements specific to your area, consult the provincial or territorial agency responsible for pesticide regulation.

#### **ROTATIONAL CROP GUIDELINES**

The following table shows the minimum interval in months from the time of the last AUTHORITY STRIKE<sup>™</sup> Herbicide application until the treated soil can be replanted to the crops listed below:

Rotational Crop	Replant Interval (Months)
Chickpea, faba bean, field pea, flax, potatoes, soybean, sunflower, tomato (transplants), mustard (oilseed and condiment types) (low rate only), wheat (spring and durum; low rate only)	0
Winter wheat	4
Alfalfa, barley, broccoli, cabbage, canola, cauliflower, field corn, wheat (spring and durum; high rate), mustard (oilseed and condiment types; high rate)	12
Sweet corn and popcorn, lentils, sorghum	24

For crops listed in the rotational crop table, the minimum replant interval listed in the table must be observed. For crops not listed in the rotational crop table, A MINIMUM ROTATIONAL CROP INTERVAL OF 36 MONTHS must be observed, and a representative bioassay of the field must be conducted with the rotational crop and adequate soil moisture to evaluate potential crop sensitivity.

If there is a lack of adequate or normal soil moisture due to drought conditions, especially in June, July and August, following an application of AUTHORITY STRIKE<sup>™</sup> Herbicide, the minimum rotational crop interval listed in the table must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to AUTHORITY STRIKE<sup>™</sup> Herbicide.

#### **REPLANTING INSTRUCTIONS**

If initial planting of labeled crops fails to produce a stand, **DO NOT** retreat field with AUTHORITY

STRIKE<sup>™</sup> Herbicide. Do not plant treated fields with any crop at intervals that are inconsistent with the rotational crop guidelines on this label. When replanting use minimum soil tillage to preserve the herbicide barrier and achieve maximum weed control.

# **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, AUTHORITY STRIKE<sup>™</sup> Herbicide is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to AUTHORITY STRIKE<sup>™</sup> Herbicide and other Group 14 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 AUTHORITY STRIKE<sup>™</sup> Herbicide or other Group 14 herbicides within a growing season (sequence) or among growing seasons with different 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 or to report suspected resistance, contact FMC of Canada Ltd. at https://ag.fmc.com/ca/en.

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