Dow AgroSciences

Frontline*

Herbicide Tank-Mix

GROUP	2	HERBICIDE

GROUP	4	HERBICIDE

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

Frontline Herbicide Tank-Mix is a selective herbicide tank-mix for postemergent control of annual broadleaved weeds including cleavers, wild buckwheat and chickweed in spring wheat (including durum), spring barley and oats.

AGRICULTURAL

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

This co-package contains:

Frontline A Suspension Concentrate Herbicide
REGISTRATION NO. 27029 PEST CONTROL PRODUCTS ACT
GUARANTEE: florasulam 50 g/L
Contains 1,2-benzisothiazoline-3-one at 0.02% as a preservative

Frontline B Emulsifiable Concentrate Herbicide
REGISTRATION NO. 27030 PEST CONTROL PRODUCTS ACT
GUARANTEE: MCPA, present as 2-ethyl hexyl ester 500 g a.e./L

WARNING POISON

HARMFUL IF SWALLOWED
MAY CAUSE EYE AND SKIN IRRITATION

NET CONTENTS: Frontline A 0.8 L, 1.6 L
Frontline B 5.6 L, 11.2 L

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PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN
DO NOT APPLY BY AIR
Harmful if swallowed. May cause eye and skin irritation. Do not get in eyes, on skin or on clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse. Destroy contaminated shoes and leather articles.

Do not use in residential areas, which are defined as sites where bystanders may be present during or after spraying, including homes, schools, parks, playgrounds, playing fields and public buildings.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at www.croplife.ca.

PROTECTIVE CLOTHING AND EQUIPMENT
Applicators must wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. In addition, they must wear coveralls and chemical worker's goggles during the mixing and handling of this product. Applicators using a closed cab are not required to wear chemical-resistant gloves.

PHYSICAL OR CHEMICAL HAZARDS
COMBUSTIBLE. Do not use or store near heat or open flame.

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

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.

TOXICOLOGICAL INFORMATION
No specific antidote. Employ supportive care. Treatment should be based on the judgment of the physician in response to reactions of the patient. This product contains a **PETROLEUM DISTILLATE.** Vomiting may cause aspiration pneumonia. The decision whether to induce vomiting or not should be made by the attending physician. If burn is present, treat as any thermal burn after decontamination. If swallowed, aspiration may cause chemical pneumonia. When considering emptying the stomach, the danger of chemical pneumonia must be weighed against toxicity. If lavage is performed, a cuffed endotrachael tube should be considered. High concentrations of MCPA may cause severe irritation to the eyes. Symptoms of overexposure to MCPA could include slurred speech, twitching, jerking and spasms, drooling, low blood pressure and unconsciousness.

AGRICULTURAL CHEMICAL
Do not ship or store with food, feeds, drugs or clothing.

ENVIRONMENTAL HAZARDS
This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. This product is also toxic to non-target terrestrial plants. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment. Overspray or drift to sensitive habitats should be avoided. Observe buffer zones specified under DIRECTIONS FOR USE.

Surface runoff
To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before treatment. Site characteristics and conditions that may lead to runoff include, but are not limited to, heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g. soils that are compacted, fine-textured, or low in organic matter such as clay).

Avoid applying this product when heavy rain is forecast.

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

Leaching
The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sand, loamy sand and sandy loam soils) and/or the depth to the water table is shallow.

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. 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.

DISPOSAL
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 requirements.

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.

GENERAL INFORMATION

Frontline Herbicide Tank-Mix is a selective postemergence herbicide tank-mix for the control of hard-to-kill annual broadleaved weeds such as chickweed and cleavers in spring wheat (including durum), spring barley (not underseeded with legumes) and oats. Frontline Herbicide Tank-Mix is mixed with water and applied as a uniform broadcast spray.

Frontline Herbicide Tank-Mix MUST be applied early postemergence, to the main flush of actively growing broadleaved weeds. Warm, moist growing conditions promote active weed growth and enhance the activity of Frontline Herbicide Tank-Mix by allowing maximum foliar uptake and contact activity. Weeds hardened off by cold weather or drought stress may not be adequately controlled or suppressed and re-growth may occur. For best results, ensure thorough spray coverage of target weeds. See “DIRECTIONS FOR USE” section of this label for complete use details.

Frontline Herbicide Tank-Mix stops growth of susceptible weeds rapidly. However, typical symptoms (discolouration) of dying weeds may not be noticeable for 1 to 2 weeks after application, depending upon growing conditions and weed susceptibility. Degree of control and duration of effect are dependent on weed sensitivity, weed size, crop competition, growing conditions at and following treatment, and spray coverage.

MODE OF ACTION

Frontline Herbicide Tank-Mix contains a Group 2 and 4 mode of action herbicide. Frontline A is a Group 2 mode of action herbicide that inhibits the production of the ALS enzyme in plants. This enzyme is essential for the production of certain amino acids required for plant growth. Frontline B is a Group 4 mode of action herbicide that disrupts normal plant growth regulation resulting in death of susceptible plants.

GENERAL USE PRECAUTIONS

- DO NOT APPLY BY AIR

Sensitive Plants

Do not apply Frontline Herbicide Tank-Mix 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 Environmental Hazards section of the label.

Crop Rotation

Fields previously treated with Frontline Herbicide Tank-Mix can be seeded the following year to barley, canola, oats, peas, or wheat or fields can be summerfallowed.

This product has potential to leach. Do not apply excessive irrigation. Do not use in successive years at the same site.

Tank Mixtures

Do not apply this product with any other additive, pesticide or fertilizer except as specifically recommended on this label. When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the product involved in the tank mixture.

Spray Equipment Precaution

Do not apply through any type of irrigation system.

Equipment Clean-Up
Equipment used to apply Frontline Herbicide Tank-Mix should not be used to apply other pesticides to sensitive crops without thorough cleaning. To avoid subsequent injury to crops other than cereals, all spraying equipment must be thoroughly cleaned both inside and out, as follows:

1. Immediately after spraying, drain. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. Rinse inside of tank with clean water and flush through booms and hoses using at least one tenth of the spray tank volume. Drain tank completely.
3. Add 1 L of household ammonia (containing a minimum of 3 % ammonia) per 100 L of water while filling the tank with clean water. Agitate and then briefly flush the boom and hoses with the cleaning solution. Top up with water making sure the tank is completely full and allow to stand for 15 minutes with agitation. Flush the boom and hoses and drain tank completely.
4. Remove nozzles and screens and clean separately with an ammonia solution (100 mL in 10 L water).
5. Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume. Drain tank completely.

Note: If it is not possible to drain the tank completely, step 3 must be repeated before going onto step 4.

Caution: Do not use ammonia with chlorine bleach. Using ammonia with chlorine bleach will release a gas with a musty chlorine odour which may cause eye, nose, throat, and lung irritation. Do not clean equipment in an enclosed area.

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.

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) coarse classification. Boom height must be 60 cm or less above the crop or ground.

To Reduce Spray Drift:
- Use low pressures (200 to 275 kPa)
- Use 100 L/ha of spray solution
- Spray when the wind velocity is 15 km/hr or less
- Spot treatments should only be applied with a calibrated boom to prevent over-application

Preharvest/Grazing Restriction
- Do not permit any grazing within 7 days after application.
- Do not harvest forage or cut hay within 7 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.
- Do not harvest the treated crop within 60 days after application.

Restricted Entry Interval (REI)
- All crops – 12-hour REI

Crops
Spring wheat (including durum), spring barley and oats.

Rates of Application
For control of a wide spectrum of broadleaved weeds, apply a uniform spray containing 100 mL of Frontline A and 0.7 L of Frontline B in a minimum of 100 L of water per hectare to thoroughly cover the weeds. Apply to actively growing wheat, barley, and oats from the 2 to 6 leaf stage. Apply when weeds are actively growing. Only weeds emerged at the time of treatment will be controlled. Best results are obtained from applications made to seedling weeds. A maximum of 1 application per year.

Mixing Instructions
1. Fill sprayer tank 1/2 full of water
2. Start sprayer tank agitation
3. Add the required number of jugs of Frontline A
4. Add the required number of jugs of Frontline B
5. Complete filling the sprayer tank with sufficient water to spray 100 L of spray mixture per hectare
6. Follow sprayer directions and precautions as outlined above, especially when applying next to sensitive crops (e.g. canola and legumes)
7. Follow sprayer clean-up directions

Note: Do not add a surfactant to this tank mixture.

Weeds Controlled or Suppressed
Weeds Controlled:

buckwheat, wild	hempnettle♦♦♦	prickly lettuce♦♦
burdock♦♦	lamb's quarters	ragweed, common
canola, volunteer♦	mustard, ball	shepherd's purse
Chickweed, common	mustard, wild	smartweed
cleavers	pigweed, redroot♦♦♦	stinkweed
flixweed (2-4 leaf stage)	pigweed, Russian♦♦	sunflower, annual♦♦

Weeds Suppressed:

dandelion (seedlings and overwintered rosettes less than 15 cm) ♦♦♦	sowthistle, perennial
plantain (top growth)	stork's bill♦♦♦
sowthistle, annual	thistle, Canada♦♦♦

♦Including all herbicide-tolerant canola varieties
♦♦Up to the 4 leaf stage
♦♦♦Optimum control can be achieved with the addition of 140 mL MCPA LV500

TANK-MIX COMBINATIONS WITH FRONTLINE HERBICIDE TANK-MIX

Crops Registered
spring wheat (including durum) and spring barley

Do not apply these tank mixes to oats

Tank mixtures of Frontline HerbicideTank-Mix with other herbicides will provide control of broadleaved weeds and specified annual grasses. Apply when crops and weeds are actively growing. Only weeds emerged at the time of treatment will be controlled. Best results are obtained from applications made to seedling weeds. Follow all precautions, minimum interval to harvest and directions for use on the Frontline Herbicide Tank-Mix and tank-mix partner labels.

Mixing Instructions

1. Fill sprayer tank 1/2 full of water.
2. Start sprayer tank agitation.
3. Add the required amount of Frontline Herbicide Tank-Mix and continue to agitate.
4. Add the required amount of tank-mix partner.
5. Fill the sprayer tank with sufficient water to spray 100 L of spray mixture per hectare.

Note: **Add only the adjuvant recommended below. Follow tank-mix partner label for order of mixing.**

Tank-Mix Combinations with Frontline Herbicide Tank-Mix

Herbicide Tank-Mix Partner	Crops Registered	Rate (Product/ha)	Adjuvant and Rate	Additional Weeds Controlled
Assert[1] 300 SC Herbicide	wheat (spring & durum), spring barley	1.6 L	Refer to the Assert 300 SC label	wild oat
Horizon[2] Herbicide Tank-Mix	wheat (spring & durum)	230 mL	Score 0.8% v/v	wild oat
		290 mL	Score 1.0% v/v	wild oat and green foxtail
Everest[4] Solupak[5] 70DF♦ Herbicide	Wheat (spring & durum)	43 g	Ag-Surf or Agral 90 0.25% v/v	Wild oat and green foxtail

♦Wheat (including durum) exposed to water-logged or saturated soils, or temperature extremes such as heat or freezing weather, or drought, low fertility or plant disease at application time could show unacceptable injury symptoms. Weed control may also be reduced by these same conditions.

BUFFER ZONES TO PROTECT SENSITIVE TERRESTRIAL AND AQUATIC HABITATS

Use of the following spray methods or equipment DO NOT require a buffer zone: handheld or backpack sprayer and spot treatment.

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.

Buffer Zone Table

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♦	Cereals	5	5	5	5	30

♦For field sprayer application, buffer zones can be reduced with the use of drift-reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Frontline Herbicide Tank-Mix is a Group 2 and Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Frontline Herbicide Tank-Mix and other Group 2 and Group 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 Frontline Herbicide Tank-Mix or other Group 2 and Group 4 herbicides 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.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- 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 Dow AgroSciences Canada Inc. at 1-800-667-3852.

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. The user assumes the risk to persons or property that arises from any such use of this product.

*Attain and Prestige are registered trademarks of Dow AgroSciences LLC
[1]Assert is a trademark of BASF Canada Inc.
[2]Horizon is a trademark of Syngenta Company
[4]Everest is a registered trademark of Bayer Corporation, used under licence by Bayer Inc.
[5]Solupak is a registered trademark of Bayer Inc.

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