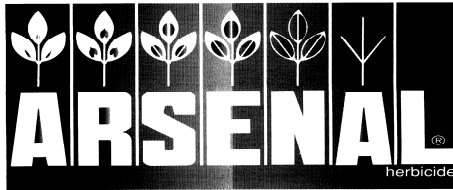


Approved Arsenal booklet (site preparation prior to planting of lodgepole), November 26, 2010

GROUP

2

HERBICIDE



Herbicide

contains imazapyr

SOLUTION

COMMERCIAL

GUARANTEE: imazapyr, present as the isopropylamine salt ..... 240 g/L

REGISTRATION NO. 23713

PEST CONTROL PRODUCTS ACT



CAUTION

POISON

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

CAUTION - EYE IRRITANT

IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY  
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT,  
1-800-454-2673

NET CONTENTS: 9.5 L; 13.6 L ; 0.1 L – 20 L; 20.1 L – 200 L

BASF Canada Inc.  
100 Milverton Drive, 5<sup>th</sup> Floor  
Mississauga, Ontario  
L5R 4H1  
1-877-371-2273

ARSENAL® is a registered trademark of BASF.

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN.**

Avoid contact with skin, eyes or clothing.

Wear chemically resistant gloves when using ARSENAL herbicide. Wear a long sleeve shirt and long pants during mixing, loading, application, cleanup and repair.

Avoid breathing spray and mist.

Use with adequate ventilation.

Do not contaminate any water body or apply to any area not specified on the label.

Wash thoroughly with soap and water after handling.

Remove contaminated clothing and wash separately from household laundry before reuse.

Do not enter or allow others to enter treated areas until sprays have dried.

## **ENVIRONMENTAL HAZARDS**

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

## **FIRST AID**

**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 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 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**

Treat symptomatically.

## **STORAGE**

DO NOT contaminate water, food, seed or feed by storage or disposal.

Keep containers closed to avoid spills and contamination.

Store at temperatures above -12°C.

ARSENAL herbicide should not be mixed or stored in unlined steel (except stainless steel) containers or spray tanks.

## **DISPOSAL**

### **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 requirements. For information on the 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.

### **For Non-Returnable Containers**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. 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**

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.

## **GENERAL INFORMATION**

ARSENAL herbicide is applied as a spray for season long control of most annual and perennial grasses and broadleaf weeds on non-cropland areas.

ARSENAL herbicide must be applied post-emergence to the weeds. For maximum activity, weeds should be growing vigorously at the time of post-emergence applications.

ARSENAL herbicide is readily absorbed through foliage and roots and is translocated rapidly throughout the plant. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground storage organs, thus preventing regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two weeks after application. Complete kill of plants may not occur for several weeks.

### **WARNING - For ground application only**

DO NOT use on food or feed crops. CAUTION: DO NOT graze the treated area or cut for hay; sufficient data are not available to support such use.

DO NOT apply where runoff water may flow onto agricultural land as injury to crops may result. Keep from contact with fertilizers, insecticides, fungicides and seeds.

Keep ARSENAL herbicide away from areas where tree roots may extend into the treated area or in locations where the chemical may be washed or moved into contact with their roots (maintain a distance from the tree equal to at least twice the distance from the tree trunk to the dripline).

DO NOT use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.

Thoroughly clean all traces of ARSENAL herbicide from application equipment immediately after use. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately). Drain and flush equipment away from desirable trees and plants. Do not contaminate water when disposing of equipment wash waters.

**This product is to be applied by licensed applicators only.**

## **WEEDS CONTROLLED**

ARSENAL herbicide will provide season long control of most annual and perennial grass and broadleaf weeds including the following species:

### Annual Broadleaf Weeds

Black medic  
Cinquefoil (rough)  
Fleabane spp.  
Groundsel (common)  
Hemp-nettle <sup>1</sup>  
Kochia <sup>1</sup>  
Lamb's-quarters <sup>1</sup>  
Mustard spp. <sup>1</sup>  
Pigweed spp. <sup>1</sup>  
Pineappleweed  
Ragweed spp.  
Russian thistle <sup>1</sup>  
Stinkweed  
Sow-thistle (annual) <sup>1</sup>  
Wild buckwheat <sup>1</sup>

### Annual Grass Weeds

Bluegrass (annual)  
Foxtail spp. <sup>1</sup>  
Old witchgrass

### Perennial/Biennial Weeds (b)

Bladder campion  
Bull thistle (b)  
Burdock (b)  
Canada thistle <sup>1</sup>  
Cinquefoil (sulfur)  
Clover spp.  
Dandelion  
Dog-strangling vine  
Field bindweed  
Goat's-beard (b)  
Goldenrod  
Leafy spurge  
Milkweed  
Mouse-ear chickweed  
Mullein spp. (b)  
Ox-eye daisy

Plantain spp.  
Poison ivy  
Sheep sorrel  
Toadflax  
Tufted vetch  
Wild carrot (b)  
Wild grape  
Wild strawberry

### Perennial Grass/Sedge Weeds

Bromegrass  
Canada bluegrass  
Fescue spp.  
Quackgrass  
Yellow nutsedge

### Woody Species

Maple  
Poplar  
Raspberry  
Wild Rose

<sup>1</sup> Tank mixing with BANVEL VM or glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non-cropland areas) is recommended to control potential Group 2 tolerant biotypes of this weed (see the Tank Mixes section of this label for additional details).

## DIRECTIONS FOR USE

### 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) medium classification. Boom height must be 60 cm or less above the weed canopy or ground.

For application to rights-of-way, buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (e.g. wind direction, low wind speed) and spray equipment (e.g. coarse droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified buffer zones for protection of sensitive aquatic habitats.

DO NOT apply by air.

### Buffer Zones

Use of the following spray methods or equipment DO NOT require a buffer zone: hand-held 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, rangelands, 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	Use	Buffer zone (metres) required for the protection of:	
		Aquatic Habitat	Terrestrial Habitat
Field sprayer*	Non-crop, non-graze areas and forestry site preparation	1	20**

\* 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 or ground, the labeled 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 labeled buffer zone can be reduced by 30%.

\*\* Buffer zones for protection of terrestrial habitats are not required for use on rights-of-way, including railroad ballast, rail and hydro rights-of-way, utility easements and roads.

When a tank mix 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.

## NON-CROP AREAS

### Application Sites

A post-emergence application of ARSENAL herbicide can be used to control most annual and perennial grasses and broadleaf weeds on the following non-crop, non-graze areas: industrial sites, railroad ballast, spot application treatment for rail and hydro rights-of-way and stations associated with pipeline rights-of-way including well sites, battery stations, and compressor or valve stations. ARSENAL herbicide can be applied alone or in tank mix with BANVEL VM herbicide or glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non-cropland areas).

### Rate

Apply 3.0 L ARSENAL herbicide per hectare. For small areas apply 30 mL per 100 m<sup>2</sup> (see Table for examples).

Litres of Water	Amount of ARSENAL Herbicide	Area Covered
1	30 mL	100 m <sup>2</sup>
5	150 mL	500 m <sup>2</sup>
10	300 mL	1,000 m <sup>2</sup>
20	600 mL	2,000 m <sup>2</sup>
50	1.5 litres	5,000 m <sup>2</sup>

## TANK MIXES

In non-crop, non-graze areas, the addition of BANVEL VM herbicide or glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non-cropland areas) to ARSENAL herbicide will provide control of those weeds labeled for ARSENAL herbicide, including possible Group 2 tolerant biotypes, and will also extend the list of weeds controlled to include those labeled on the tank mix partner label. Only use glyphosate products registered for use on non-cropland areas.

For maximum activity, apply tank mixtures when weeds are small and actively growing. Refer to the label of the tank mix partner for further precautions, additional weeds controlled, restrictions and use instructions.

Herbicide and Rate	Tank Mix Partner	Rate per Hectare
ARSENAL herbicide 3.0 L/ha	Glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non- cropland areas)	810 – 4320 g ae <sup>1</sup>
	BANVEL VM herbicide	2.1 – 4.6 L

<sup>1</sup> For control of annual and perennial grass and broadleaf weeds. A rate of 810 - 4320 g ae/ha is equivalent to 1.5 to 8 L/ha of Roundup Transorb HC Liquid Herbicide (540 g ae/L) or 1.69 to 9 L/ha of Vantage Plus Max II Herbicide Solution (480 g ae/L). Other glyphosate formulations may require a rate calculation adjustment according to active ingredient concentration.

## **MIXING INSTRUCTIONS**

Mix the proper amount of ARSENAL herbicide in water in the spray tank with the agitator running. If required, add the correct amount of the tank mix partner.

A foam reducing agent may be added at the recommended label rate, if needed.

## **EQUIPMENT**

### **High volume spray equipment: high pressure handguns and vehicle mounted high volume directed spray equipment**

For best results, apply ARSENAL herbicide alone or in combination with BANVEL VM herbicide or glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non-cropland areas) using the least amount of water practical to obtain uniform coverage of the vegetation foliage. Using excessive spray volumes which may cause runoff from the plant foliage may result in reduced performance. Apply uniformly with properly calibrated ground equipment in 100 - 550 litres of water per hectare with a spray pressure of 175 kPa - 425 kPa.

If using spray volumes greater than 550 litres per hectare, additional nonionic surfactant must then be added at a rate of 1 litre/400 litres of spray solution to provide optimum wetting and/or contact activity. A foam reducing agent may be added at the recommended label rate, if needed.

### **Boom: conventional boom mounted, manifold mounted, and off-centered nozzles**

Mix the recommended amount of ARSENAL herbicide alone or in combination with BANVEL VM herbicide or glyphosate (present as isopropylamine salt, potassium salt, diammonium salt or dimethylamine salt, registered for use on non-cropland areas) in 100 - 550 litres per hectare in the spray tank with the agitator running. A foam reducing agent may be added at the recommended label rate if needed.

### **Low volume hand held equipment**

Backpack, knapsack, and other pump-up type pressure sprayers and backpack mist blowers used to direct applications to weed foliage.

## **FORESTRY SITE PREPARATION**

### **Application Site**

ARSENAL herbicide can be used as a directed, spot or strip spray application for site preparation prior to planting white spruce or lodgepole pine seedlings in the Boreal Forest Region only.

Effects of ARSENAL herbicide are slow to appear on target plants with maximum effectiveness generally being apparent more than one full growing season after treatment. ARSENAL herbicide should be applied at least six (6) months prior to planting white spruce or lodgepole pine seedlings or injury may result.

Reentry Interval: DO NOT reenter treated area within 12 hours after application.

Consult local pesticide authorities about use permits which may be required.

### **Species Controlled**

Aspen and bluejoint reedgrass.

### **Rate and Equipment**

When making directed or spot spray applications with low volume hand application equipment thoroughly mix a 2.5% solution of ARSENAL herbicide in water. Treat up to one-half (1/2) the total area of the site preparation area by applying spots or strips to create planting sites. Evenly apply 8 mL of mixture per square meter of treated spot.

When making spot or strip applications using ground application equipment apply 2.08 L of ARSENAL herbicide in 75 to 100 L of mixture per treated hectare. Equipment should be configured to treat spots or strips totaling no more than one-half (1/2) of the treatment unit (cut block plantation opening).

## **RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, ARSENAL herbicide is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to ARSENAL herbicide and other Group 2 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 ARSENAL herbicide or other Group 2 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.

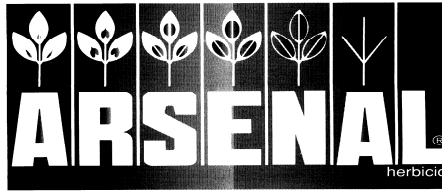
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- 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 BASF at 1-877-371-2273.

Proposed Arsenal container (site preparation prior to planting of lodgepole), Nov. 26, 2010

GROUP

2

HERBICIDE



Herbicide

contains imazapyr

SOLUTION

COMMERCIAL

GUARANTEE: imazapyr, present as the isopropylamine salt ..... 240 g/L

REGISTRATION NO. 23713

PEST CONTROL PRODUCTS ACT



CAUTION

POISON

READ THE LABEL AND BROCHURE BEFORE USING  
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CAUTION - EYE IRRITANT

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NET CONTENTS: 9.5 Litres

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Mississauga, Ontario  
L5R 4H1  
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## **PRECAUTIONS**

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Avoid breathing spray and mist.

Use with adequate ventilation.

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Wash thoroughly with soap and water after handling.

Remove contaminated clothing and wash separately from household laundry before reuse.

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## **ENVIRONMENTAL HAZARDS**

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

DO NOT apply by air.

## **FIRST AID**

**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 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 a poison control centre or doctor for treatment advice.

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## **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

## **STORAGE**

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