

Date: 8/20/2024

Region: 4C

FAC ID: WV022

CSS No.: 98606

Maximo WO No.: 16372

Asset #: NA

Priority: Routine



**Original Work Request:**

Repair/remove overgrown vegetation: inside mech area out front, inside of fence line of Motor pool and any trees that are encroaching on motor pool fence (exterior).

**Description of Repairs Needed:**

Labor and material to a.) perform weed and brush trimming along wood line and fenced areas, motorpool area, b.) clearing brush within fenced areas and other trimming, brush clearing as needed, c.) spray some of the overgrowth inside motor pool, d.) properly dispose of all debris generated at job site.

Labor:	Labor Hrs	Labor Rate	Total
Technician	40	\$ 105.00	\$ 4,200.00
			\$ -

Material List:	Quantity	Cost	Total
Herbicide	1	\$ 200.00	\$ 200.00
			\$ -
			\$ -
			\$ -

Equipment List:	Quantity	Cost	Total
Dump Trailer Rental	1	\$ 300.00	\$ 300.00
Dump Fees	1	\$ 200.00	\$ 200.00
			\$ -

**PM WO History:**

NA
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**Estimate Summary:**

Labor	Material	Equipment
\$ 4,200.00	\$ 200.00	\$500.00

Sub Total	G&A 12%	Fee 6%	Total Estimate
\$4,900.00	\$588.00	\$294.00	\$5,782.00

ESTIMATE

GroundsPro, LLC

P.O. Box 1392  
Bridgeport, WV 26330  
(304) 629-6990



To:  
Kingwood Army Reserve  
504 N Preston Hwy  
Kingwood , WV 26537

Estimate #	205569
Estimate Date	08/19/2024
<b>Total Amount</b>	<b>\$4,900.00</b>

Item		Quantity	Price	Tax1	Tax2	Line Total
Dump Trailer Rental	504 N Preston Hwy	1.0	\$300.00			\$300.00
Dump Fees		1.0	\$200.00			\$200.00
Herbicide		1.0	\$200.00			\$200.00
Labor (Man hour rate)		40.0	\$105.00			\$4,200.00

Subtotal:	\$4,900.00
Tax:	\$0.00
Past Due Amount:	\$0.00
<b>Total Amount:</b>	<b>\$4,900.00</b>

Notes

Clearing brush within fenced areas & other trimming, brush clearing as needed.



# ALLIGARE 90

## NONIONIC LOW-FOAM WETTER/SPREADER SURFACTANT

### PRINCIPAL FUNCTIONING AGENTS:

Alkylpolyoxethylene, humectants, and constituents ineffective as an adjuvant.....100%

## KEEP OUT OF REACH OF CHILDREN WARNING

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

Causes serious eye irritation. Read label before use. Keep container tightly closed. Keep only in original container. Avoid breathing dust, fume, gas, mist, vapors or spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves, protective clothing, eye protection and face protection.

### FIRST AID

**Have the product container with you when calling a poison control center or doctor, or going for treatment.**

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses if present, after the first 5 minutes, then continue cautiously rinsing eye. If eye irritation persists: Get medical advice or attention.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing and wash it before reuse. Wash skin with plenty of soap and water for several minutes. Call a poison center, doctor, chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. If skin irritation persists: Get medical advice or attention.

**IF SWALLOWED:** Call a POISON CENTER, doctor or physician if you feel unwell. Unless advised otherwise by a poison control center or doctor, have person rinse mouth with water, if able. Do not give anything by mouth to an unconscious person.

**IF INHALED:** If breathing is difficult, remove person to fresh air and keep at rest in a position comfortable for breathing. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth to mouth if possible.

**Distributed By: Alligare, LLC**  
**13 N. 8th Street, Opelika, AL 36801 • 888-255-4427**

**NET CONTENTS: 1 U.S. Gallon (3.79 L)**



**ALLIGARE 90** is a general purpose nonionic surfactant, used to enhance spreading and coverage of sprays.

**ALLIGARE 90** may be used with various insecticides, fungicides, herbicides, PGR's and nutrients at rates determined by pesticide label and field experience.

## **DIRECTIONS FOR USE**

Follow the directions and rate on the pesticide label being used.

<b>Type of Herbicide Application</b>	<b>Amount/100 gal.</b>
Utility ROW and roadside foliar	1/2 pt. - 2 qt.
Forest site preparation	1 pt. - 2 qt./acre
Aquatic - surface	1/2 pt. - 2 qt.
Aquatic - submerged	1 - 2 gal.
Agriculture / Citrus / Turf	1/2 - 4 pt.

## **STORAGE AND DISPOSAL**

**STORAGE:** Store in a cool well-ventilated place. Keep in original container tightly closed. Do not reuse empty container. Do not store with food, feed, or other material to be used or consumed by humans or animals. Do not contaminate water supplies. For optimal storage, store between 40° and 90° F.

**DISPOSAL:** Do not contaminate water, food or feed by storage or disposal. Dispose of contents container to an approved waste disposal facility in accordance with all federal, state and local regulations. Triple rinse (or equivalent) adding rinse water to application tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by local regulations. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at [www.acrecycle.org](http://www.acrecycle.org).

## **WARRANTY**

Alligare, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Alligare, LLC MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANT-ABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. Inherent Risks of Use: It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Alligare, LLC or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies: The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Alligare, LLC's election, one of the following: 1. Refund of purchase price paid by buyer or user for product bought, or 2. Replacement of amount of product used Alligare, LLC shall not be liable for losses or damages resulting from handling or use of this product unless Alligare, LLC is promptly notified of such loss or damage in writing. In no case shall Alligare, LLC be liable for consequential or incidental damages or losses. The terms of the "Warranty Disclaimer" above and this "Limitation of Remedies" cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Alligare, LLC or the seller is authorized to vary or exceed the terms of the "Warranty Disclaimer" or this "Limitation of Remedies" in any manner.

# SAFETY DATA SHEET

ALLIGARE 90

SDS DATE: 4/28/2015

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** ALLIGARE 90

**DISTRIBUTOR:** Alligare, LLC.  
**ADDRESS:** 13 N. 8th Street, Opelika, AL 36801  
**PHONE:** 888-255-4427

**EMERGENCY CHEMTREC PHONE:** US: 1-800-424-9300 International: 1-202-483-7616

**CHEMICAL NAME:** Nonionic Surfactant Blend  
**CHEMICAL FAMILY:** Nonionic Surfactant  
**CHEMICAL FORMULA:** Mixture

**PRODUCT USE:** Adjuvant

**SECTION 1 NOTES:** None

## SECTION 2: HAZARDOUS INGREDIENTS

### GHS Ratings:

Toxicity Category  
Skin corrosion/ irritation Category 2  
Eye damage/ irritation Category 2A



**Signal Word: WARNING**

### GHS Hazards

H315 Causes skin irritation.  
H319 Causes serious eye irritation.

### GHS Precautions

P102 Keep out of reach of children.  
P103 Read label before use.  
P233 Keep container tightly closed.  
P234 Keep only in original container.  
P261 Avoid breathing dust, fume, gas, mist, vapors or spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product  
P280 Wear protective gloves, protective clothing, eye protection and face protection.  
P301+312 IF SWALLOWED: Call a POISON CENTER, doctor or physician if you feel unwell.  
P302+352 IF ON SKIN: Wash with plenty of soap and water.  
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do then continue rinsing cautiously.  
P337+313 If eye irritation persists: Get medical advice or attention.  
P332+313 If skin irritation persists: Get medical advice or attention.  
P362 Take off contaminated clothing and wash it before reuse.

## SECTION 3: HAZARDS IDENTIFICATION

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% WT</u>
Proprietary	Proprietary	1 – 10%
Proprietary	Proprietary	20 – 30%

**NOTE:** Product does NOT contain any pesticides or pest control agents.

**SECTION 3 NOTES:** These specific chemical identities and or exact percentage (concentration) of composition have been withheld as a trade secret.

**CARCINOGENICITY**

# SAFETY DATA SHEET

ALLIGARE 90

SDS DATE: 4/28/2015

OSHA: No ACGIH: No NTP: No IARC: No OTHER: No

## SECTION 4: FIRST AID MEASURES

*Have the product container with you when calling a poison control center or doctor, or going for treatment.*

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses if present, after the first 5 minutes, then continue cautiously rinsing eye. If eye irritation persists: Get medical advice or attention.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing and wash it before reuse. Wash skin with plenty of soap and water for several minutes. If skin irritation persists: Get medical advice or attention.

**IF SWALLOWED:** Call a POISON CENTER, doctor or physician if you feel unwell. Unless advised otherwise by a poison control center or doctor, have person rinse mouth with water, if able. Do not give anything by mouth to an unconscious person.

**IF INHALED:** If breathing is difficult, remove person to fresh air and keep at rest in a position comfortable for breathing. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth to mouth if possible.

### NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

SECTION 4 NOTES: None

## SECTION 5: FIRE FIGHTING MEASURES

### NFPA HAZARD CLASSIFICATION

HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0 OTHER: -

**IN CASE OF FIRE:** Use carbon dioxide or dry chemical for small fires and water fog or foam (alcohol, polymer, or ordinary) for large fires. Water stream may spread flames.

**SPECIAL FIRE FIGHTING PROCEDURES:** Use alcohol-type or universal-type foams on larger fires. Smaller fires should be extinguished with carbon dioxide or dry chemical. Do not use water or foam directly on the fire. Use self-contained breathing apparatus with fighting any fire in an enclosed area.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Do not use water or foam directly on the fire.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None

SECTION 5 NOTES: None

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:** Surround and absorb all spills. Material should be collected and disposed in proper manner. Dike the area to prevent spill from spreading. Soak up spill with a suitable absorbent such as clay, sawdust or kitty litter. Sweep up absorbed material and place in a chemical waste container for disposal. Wear suitable protective equipment.

SECTION 6 NOTES: None

## SECTION 7: HANDLING AND STORAGE

**HANDLING** Keep out of reach of children. Read label before use. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse. Wear protective gloves, protective clothing, eye protection and face protection.

**STORAGE:** Store in a cool well-ventilated place. Keep in original container tightly closed. Do not reuse empty container. Do not store with food, feed, or other material to be used or consumed by humans or animals. Do not contaminate water supplies. For optimal storage, store between 40° and 90° F.

SECTION 7 NOTES: None

# SAFETY DATA SHEET

ALLIGARE 90

SDS DATE: 4/28/2015

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

<b>VENTILATION:</b>	Normal room ventilation (mechanical) or outdoor use should be satisfactory.
<b>RESPIRATORY PROTECTION:</b>	Wear a NIOSH/OSHA approved respirator, approved for use with propionic acid, if necessary.
<b>EYE PROTECTION:</b>	Chemical goggles and face shield.
<b>SKIN PROTECTION:</b>	Impervious gloves, long-sleeved shirts and pants.
<b>OTHER PROTECTIVE CLOTHING OR EQUIPMENT:</b>	Eye wash and safety shower should be easily accessible.
<b>WORK HYGIENIC PRACTICES:</b>	Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse.
<b>EXPOSURE GUIDELINES:</b>	If exposed, see section 4 for acute exposure first aid.
<b>SECTION 8 NOTES:</b>	None

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Clear LIGHT GOLDEN	<b>FLAMMABLE LIMITS IN AIR, UPPER:</b> Unknown (% BY VOLUME)	<b>LOWER:</b> Unknown
<b>ODOR:</b>	Alcohol	<b>VAPOR PRESSURE (mmHg):</b>	@ Unknown
<b>ORDER THRESHOLD:</b>	Not known		F: Unknown
<b>PHYSICAL STATE:</b>	Liquid		C: Unknown
<b>pH AS SUPPLIED:</b>	Not applicable	<b>VAPOR DENSITY (AIR = 1):</b>	@ Unknown
<b>pH (Other):</b>			F: Unknown
<b>INITIAL BOILING POINT:</b>	F: Unknown C: Unknown	<b>RELATIVE DENSITY:</b>	1.025 to 1.035
<b>BOILING POINT RANGE:</b>	F: Unknown C: Unknown	<b>EVAPORATION RATE:</b>	Unknown
<b>MELTING POINT:</b>	F: Unknown C: Unknown	<b>BASIS (butyl acetate=1):</b>	
<b>FREEZING POINT:</b>	F: Unknown C: Unknown	<b>SOLUBILITY IN WATER:</b>	Soluble
<b>FLASH POINT:</b>	F: >200 C: >93	<b>PARTITION COEFFICIENT: (n-octanol/water):</b>	Unknown
<b>METHOD USED:</b>	PMCC	<b>AUTO-IGNITION TEMPERATURE:</b>	Unknown
<b>FLAMMABILITY (solid, gas):</b>	Can burn	<b>DECOMPOSITION TEMPERATURE:</b>	Unknown
		<b>VISCOSITY:</b>	@ Unknown F: Unknown C: Unknown

### SECTION 9 NOTES: Values are not product specifications.

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

# SAFETY DATA SHEET

ALLIGARE 90

SDS DATE: 4/28/2015

## SECTION 10: STABILITY AND REACTIVITY

STABILITY:      Stable ☒      Unstable ☐

CONDITIONS TO AVOID (STABILITY):      None known

INCOMPATIBILITY (MATERIAL TO AVOID):      None known.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:      None known

HAZARDOUS POLYMERIZATION:      Will not occur

CONDITIONS TO AVOID (POLYMERIZATION):      None known

SECTION 10 NOTES:      None

## SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:      Not available  
MIXTURE TOXICITY

COMPONENT TOXICITY      Not available

SECTION 11 NOTES:      None

## SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:      Not available

ECOTOXICITY:      Not available

BIOACCUMULATIVE POTENTIAL:      Not available

MOBILITY IN SOIL:      Not available

OTHER ADVERSE EFFECTS:      Not available

SECTION 12 NOTES:      None

## SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:      Do not contaminate water, food or feed by storage or disposal. Dispose of contents in container to an approved waste disposal facility in accordance with all federal, state and local regulations.

CONTAINER DISPOSAL:      Triple rinse (or equivalent) adding rinse water to application tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by local regulations.

RCRA HAZARD CLASS:      None

SECTION 13 NOTES:      None

## SECTION 14: TRANSPORT INFORMATION

### U.S. DEPARTMENT OF TRANSPORTATION

DOT Shipping Description:      Not Regulated

U.S. Surface Freight Classification: ADHESIVES, ADJUVANTS, SPREADERS OR STICKERS (NMFC 4610; CLASS: 60) Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.

OTHER AGENCIES:      None

SECTION 14 NOTES:      None



# SAFETY DATA SHEET

ALLIGARE 90

SDS DATE: 4/28/2015

## SECTION 15: REGULATORY INFORMATION

### U.S. FEDERAL REGULATIONS

**TSCA (TOXIC SUBSTANCE CONTROL ACT):** Mixture not listed

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):** Not Regulated

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):** Not Regulated

**311/312 HAZARD CATEGORIES:** None

**313 REPORTABLE INGREDIENTS:** None

**INTERNATIONAL REGULATIONS:** None

**SECTION 15 NOTES:** None

## SECTION 16: OTHER INFORMATION

**OTHER INFORMATION:** None

### DISCLAIMER:

The recommendation for safe handling and protection procedures is believed to be generally suitable for the standard uses of this compound. However, each user should identify his intended uses of this material and determine whether they are appropriate. All data included in this document is released as typical values and should not be utilized to determine the suitability of this material for a particular use or purpose. No warranty, either expressed or implied, is hereby made, nor do we give permission, inducement, or recommendations to practice any patented invention without a license. All data is offered for consideration, investigation and verification purposes only.

# BOULDER 6.3

## Specimen Label

**An Herbicide for Control of Woody Plants, Annuals and Perennial Broadleaf Weeds in Forests, Grass Pastures, Rangeland, CRP acres, Rights-of-Way, and in Non-Crop Areas and Ornamental Turf, Industrial Sites and Non-Irrigation Ditch Banks**

<b>ACTIVE INGREDIENT:</b>	<b>% BY WT.</b>
Triclopyr BEE: (3,5,6 Trichloro-2-Pyridinyl)oxyacetic acid, butoxyethyl ester	83.9%
<b>OTHER INGREDIENTS:</b>	16.1%
<b>TOTAL:</b>	100.0%
Acid equivalent: Triclopyr – 60.3% - 6.3 lbs./gal.	

EPA Reg. No. 81927-54

## KEEP OUT OF REACH OF CHILDREN

## CAUTION / PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information	

**Manufactured for:** Alligare, LLC  
1565 5th Avenue  
Opelika, AL 36801

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers who handle this pesticide must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### ENGINEERING CONTROLS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any

requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber, or Viton
- Protective eyewear
- Shoes plus socks

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried, unless applicator and other handler PPE is worn.

#### Product Information

Boulder 6.3 is an emulsifiable concentrate herbicide used to control unwanted woody plants and annual and perennial broadleaf weeds

- in forests
- on permanent grass pastures, rangelands, and conservation reserve program (CRP) acres (including non-irrigation ditch banks and fence rows within these areas)
- on non-crop areas including industrial manufacturing and storage sites
- on rights-of-way such as electrical power lines, communication lines, pipelines, road-sides, and railroads
- on fence rows
- on non-irrigation ditch banks
- around farm buildings
- on perennial bluegrass, perennial ryegrass, and tall fescue ornamental turf (including sod farms, commercial turf, and golf courses)

Boulder 6.3 use on these sites may include application to grazed areas as well as for the establishment and maintenance of wildlife openings.

#### Use Precautions

- Local conditions may affect the use of herbicides. Consult your local specialist for advice in selecting treatments from this label to best fit local conditions.
- When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.
- Avoid direct application to Christmas trees as conifer injury may result. When treating unwanted vegetation in Christmas tree plantations, use sprays directed away from conifers.
- While Boulder 6.3 is formulated as a low volatile ester, the combination of spray contact with impervious surfaces (such as roads and rocks) and increasing ambient air temperatures may result in an increase in the volatility potential for this herbicide, increasing a risk for off-target injury to sensitive crops such as grapes and tomatoes.
- Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in *Washington Toxics Coalition, et. al. v. EP, C01-0132C*, (W.D. WA). For further information, please refer to <http://www.epa.gov/esp/wtc>.

#### Use Restrictions

- **Agricultural Use Requirements for Forestry Uses:** For use of this product on forestry sites, follow PPE and Reentry restrictions in the Agricultural Use Requirements section of this label.
- **Use Requirements for Non-Cropland Areas:** No worker protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to non-cropland.
- Boulder 6.3 may injure certain turfgrass species. Do not apply to bahiagrass, bentgrass, bermudagrass, centipedegrass, St. Augustine grass, or zoysiagrass, unless turf injury can be tolerated.
- Do not apply Boulder 6.3 to exposed roots of shallow rooted trees and shrubs.
- Do not apply Boulder 6.3 to golf course greens.
- Do not apply more than 2.5 pints (1.25 quarts) of Boulder 6.3 (2 lb. ae of triclopyr) per acre in a single application when spot treating.
- On use sites other than grazable areas and forestry sites, do not apply more than 8 lbs. ae per acre per year of triclopyr (5 qts./A/yr Boulder 6.3).
- On use sites that may be grazed, including rights-of-way, pasture, fence rows, and rangeland, do not apply more than 2 lbs. ae per acre per year of triclopyr (1.25 qts./A/yr of Boulder 6.3).
- On forestry use sites, do not apply more than 6 lbs. ae per acre per year of triclopyr (3.75 qts./A/yr of Boulder 6.3).
- **In Arizona:** The state of Arizona has not approved Boulder 6.3 for use on plants grown for commercial production; specifically on designated grazing areas or use on sod farms.
- Do not apply this product through any type of irrigation system.

# BOULDER 6.3

# Specimen Label

- Do not apply to ditches used to transport irrigation water. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.
- It is permissible to treat non-irrigation ditch banks, seasonably dry wetlands, flood plains, deltas, marshes, swamps, bogs and transitional areas between upland and lowland sites. Do not apply to open water such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries.
- Do not apply this product through mist blowers unless a drift control additive, high viscosity inverting system, or equivalent is used to control spray drift.
- Do not make direct applications or allow spray mists to drift onto cotton, fruit or orchard trees, shrubs, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants.
- Many forbs (herbaceous broadleaves) are susceptible to Boulder 6.3. Unless injury or loss of such plants can be tolerated, do not spray pastures containing desirable broadleaf forbs (especially legumes such as clover). After applications the stand and growth of established grasses is usually improved, especially when rainfall is adequate and grazing is deferred.
- While established grasses are tolerant to this product, newly seeded grasses may be injured until well established (as indicated by vigorous growth, tillering and the development of a secondary root system). Do not reseed treated areas for a minimum of three weeks after treatment.
- Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lbs. ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

## Grazing and Haying Restrictions

Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.
- Grazed areas of non-cropland and forestry sites may be spot treated if they comprise no more than 10% of the total grazable area.

## Slaughter Restrictions:

Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter. This restriction applies to grazing during the season following treatment or hay harvested during the season following treatment.

## APPLICATION DIRECTIONS

### RATES

This table assists in determining proper volumes of Boulder 6.3 in the spray tank to avoid exceeding the maximum use rates listed:

Total Spray Volume (gallons/acre)	Rate of Boulder 6.3	
	Forestry Sites (qts./100 gallons of spray)*	Non-Cropland Sites (qts./100 gallons of spray)**
400	1	1.25
300	1.25	1.7
200	1.75	2.5
100	3.75	5
50	7.5	10
40	9	12
30	13	16
20	19	25
10	38	56

\*Do not exceed the maximum use rate of 3.75 qts. of Boulder 6.3 (6 lbs. ae of triclopyr) per acre per year.

\*\*Do not exceed the maximum use rate of 5 qts. of Boulder 6.3 (8 lbs. ae of triclopyr) per acre per year, or 1.25 qts. of Boulder 6.3 (2 lbs. ae of triclopyr) per acre per year for grazed areas, except on portions of grazed areas that meet the following requirement. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lbs. ae of Triclopyr per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

## Spray Additives

**Surfactants** - If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre.

**Drift Control Agents** – Agriculturally registered spray thickening drift control agents or high viscosity invert systems may be used with Boulder 6.3. When using these agents, follow all use directions and precautions on the product label. Do not use a thickening agent with the Microfoil boom, Thru Valve boom, or other systems that cannot accommodate thick sprays.

## Mixing Directions

Apply Boulder 6.3 foliarly by diluting with water or as an oil-water emulsion. NOTE: An oil-water emulsion performs more dependably under a broader range of conditions than a straight water dilution for woody plant control and is recommended for aerial applications.

## Oil-Water Emulsions

NOTE: Prior to preparing oil-water emulsion sprays in the mixing tank, conduct a jar test to check spray mix compatibility.

Prepare the oil-water emulsion using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100.

- **Ground Application:** Add oil at a rate of 5 to 10% of the total to the spray mix (up to a maximum of 1 gallon of oil per acre) and use an agricultural spray emulsifier according to

mixing instructions below.

- **Aerial Application:** Add a 1:5 ratio of oil and water (1 part oil to 5 parts water) to the spray mixture (up to a maximum of 1 gallon of oil per acre) according to the mixing instructions below.

## Oil Mixture Sprays for Basal Treatment

When preparing an oil mixture, be sure to read and follow the use directions and precautions on the manufacturer's product label. Prepare oil-based spray mixtures using either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. Add Boulder 6.3 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. Reagitate if the mixture stands for over 4 hours.

## Water Dilutions

To provide improved wetting of foliage using water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

## Tank Mixing

Boulder 6.3 may be applied in combination with labeled rates of other herbicides provided:

- The tank mix product(s) are labeled for the timing and method of application for the use site to be treated; and,
- Tank mixing is not prohibited by the label of the tank mix product(s).

NOTE: The following compatibility test (jar test) should be conducted prior to mixing ingredients in the spray tank when tank mixing Boulder 6.3 with other materials:

1. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions.
2. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour.
3. If the mixture balls-up, forms flakes, sludges, jells, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

**Mixing Order for Tank Mixes:** Add one-half of the needed water to the mixing tank and begin agitation. Add the tank mix partners in the order indicated below, allowing time for complete dispersion and mixing after the addition of each product.

1. Water soluble herbicide (if used)
2. Premix of oil, emulsifier, Boulder 6.3 and other oil-soluble herbicide (if used); see below

Add the remaining water. During the final filling of the tank, a drift control and deposition aid cleared for application to growing crops may be added, as well as an agricultural surfactant if a water dilution rather than an oil-water emulsion spray is used. To ensure spray uniformity, maintain continuous agitation of the spray mixture during mixing, final filling and throughout application.

**Premixing:** Prepare a premix of oil, emulsifier (if oil-water emulsion), and Boulder 6.3 plus other oil-soluble herbicides if used (for example 2,4-D ester). **Note:** Do not allow water or mixtures containing water to get into the premix or Boulder 6.3 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. An emulsion may also be formed if the premix or Boulder 6.3 is put into the mixing tank prior to the addition of water.

## Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, limitations and precautions in the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- When using spray equipment where the product formulations will be mixed in undiluted form (such as direct injection), special care should be taken to ensure tank mix compatibility.

## Mixing with Liquid Fertilizer for Broadleaf Weed Control

For weed control and fertilization of grass pastures, Boulder 6.3 may be tank mixed with liquid nitrogen fertilizer and applied foliarly. Use Boulder 6.3 according to the use directions in this label for grass pastures, and apply at the rates recommended by your supplier or Extension Service Specialist provided that no maximum application rates specified on this label are exceeded. **Note:** Because foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants, Boulder 6.3 is not recommended for use with liquid fertilizer on woody plants (brush).

Test for mixing compatibility using the desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Complex may be needed in some situations, and in difficult situations premixing Boulder 6.3 with 1 to 4 parts water may help. **NOTE: Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of a compatibility aid.**

Fill the spray tank approximately half full with the liquid fertilizer, then begin agitating and add the herbicide. Complete filling the tank with fertilizer and apply immediately maintaining continuous agitation in the spray tank during application. **Do not store liquid fertilizer spray mixtures.** Because the likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions, application during very cold weather (near freezing) is not recommended.

**Note:** Do not use spray equipment for other applications to land planted (or to be planted) to susceptible crops or desirable plants **unless** it has been determined that all phytotoxic herbicide residue has been removed by thoroughly cleaning the equipment.

## APPLICATION EQUIPMENT AND TECHNIQUES

Avoid drift. Very small quantities of spray may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible desirable vegetation. The applicator may detect the potential for drift by producing smoke at or near the spray site and observing for a

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temperature inversion or for potential of off-site movement. If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

## Broadcast Applications

Boulder 6.3 may be applied aerially by fixed wing aircraft or helicopter to rangeland, permanent grass pastures, and conservation reserve program acres. For all other use sites listed on this label, Boulder 6.3 may only be applied aerially by helicopter.

**For aerial application to rangeland, permanent grass pastures, and conservation reserve program acres:**

**Air (Fixed wing aircraft or Helicopter)** – For aerial applications to rangeland, permanent grass pastures, and conservation reserve program acres, apply Boulder 6.3 through a Microfoil or Thru-Valve boom, or use an agriculturally labeled drift control additive. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Keep spray pressures low enough to provide coarse spray droplets and spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions.

**Air (Helicopter Only)** – When making aerial applications on rights-of-way or other areas near susceptible crops, efforts should be made to minimize drift. Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Drift can be minimized by applying through the Microfoil boom or Thru-Valve boom. Drift control agents or high viscosity invert systems can also be used to minimize drift. Do not use the high viscosity invert system unless it is as effective as the booms listed or as effective as available drift control agents. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's recommendations is advised. To minimize drift, use a spray boom that is no longer than  $\frac{3}{4}$  the rotor length, spray when wind velocities are low; or by using an approved drift control system.

**Note:** Reference within this label to equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Alligare, LLC is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising their own judgment and expertise, or consulting with sources other than Alligare, LLC, in selecting and determining how to use its equipment.

## Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. 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.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backwards parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. [This section is advisory in nature and does not supersede the mandatory label requirements]

## Aerial Drift Reduction Advisory

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

### Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types low pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### Boom Length

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

### Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the low-

est height that is safe reduces exposure of droplets to evaporation and wind.

### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential.

**Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### Temperature Inversions

Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**Ground** – Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Large droplet producing equipment, such as the Radiarc sprayer may aid in reducing off-target drift. Drift control agents or high viscosity invert systems can also be used to minimize drift. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's specified rates is advised. To minimize drift, keep the spray boom as low as possible, apply in  $\geq 20$  gallons of spray volume per acre, spray when wind velocities are low; or use an approved drift control agent.

**High Volume Leaf-Stem Treatments:** Make applications no higher than brush tops with low pressure and coarse spray droplets to minimize spray drift. A drift control agent may be used to reduce spray drift.

### Application Directions for Rights-of-Way, Industrial Sites, Non-Crop Areas, Non-Irrigation Ditch Banks, Forests, and Wildlife Openings including Grazed Areas on these Sites

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Boulder 6.3.

### Foliar Applications

Apply Boulder 6.3 at rates of 1.25 pints to 5 quarts per acre for the control of broadleaf weeds and woody plants. Do not exceed the maximum use rate for the use site being treated. Consult the Use Restrictions section of this label for maximum use rates. Apply in enough water to provide uniform and complete coverage of the plants to be controlled. For best results make applications when woody plants and weeds are actively growing. Use higher doses within the range when brush averages 15 feet or more in height or when brush covers  $> 60\%$  of the area to be treated.

For hard-to-control species such as ash, black gum, choke cherry, elm, maples (other than vine or big leaf), oaks, pines, or winged elm; during late summer applications when plants are mature; or during drought; use higher rates of Boulder 6.3 alone or use in combination with Tordon® 101 Mixture or Tordon or Alligare Picloram K. If lower rates are used on hard-to-control species, re-sprouting may occur in the year following treatment.

If easy to control brush species dominate, rates less than those specified may be effective. Consult state or local extension personnel for information.

When making applications of Boulder 6.3 in a tank mix with 2,4-D low volatile ester herbicide, use higher rates of Boulder 6.3 within the range for satisfactory brush control.

When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

### Foliar Applications with Ground Equipment

#### High Volume Foliar Applications

For control of woody plants, apply Boulder 6.3 at 1.25 to 4 pints per 100 gallons of spray mixture. Coverage should be thorough to wet all leaves, stems, and root collars. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

**Tank Mixing:** 1.25 to 4 pints of Boulder 6.3 may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon, Alligare Picloram K, or Tordon 101 Mixture diluted to make 100 gallons of spray. These applications should be made in 100 to 400 gallons of



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total spray per acre depending on size and density of woody plants. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

## Low Volume Foliar Applications

For control of woody plants, mix up to 13 quarts of Boulder 6.3 in 10 to 100 gallons of spray solution. Adjust the spray concentration of Boulder 6.3 and total spray volume per acre to match the size and density of target woody plants and kinds of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars. For best results, a surfactant should be added to all spray mixtures. See the SPRAY ADDITIVES section for a rate recommendation.

Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 PSI may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

**Tank Mixing:** Up to 7.5 quarts of Boulder 6.3 may be applied in tank mix combinations with labeled rates of Tordon, Alligare Picloram K, or Tordon 101 Mixture as a low volume foliar spray. These applications should be made in 10 to 100 gallons of spray solution. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

## Broadcast Application With Ground Equipment

Use equipment that will assure thorough and uniform coverage at spray volumes applied.

## Woody Plant Control

**Foliage Treatment:** Apply 2.5 to 5 quarts of Boulder 6.3 in a minimum of 5 gallons of spray solution per acre. Boulder 6.3 at 1 to 2 quarts per acre may be tank mixed with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture, or Tordon or Alligare Picloram K in a minimum of 5 gallons of spray solution per acre. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

## Broadleaf Weed Control

Apply 1.25 pints to 2.5 quarts of Boulder 6.3 in a minimum of 5 gallons of spray solution per acre. Apply at any time weeds are actively growing. Boulder 6.3 at 5 fl. oz. to 2 quarts per acre may be tank mixed with labeled rates of 2,4-D amine or low volatile ester; Tordon or Alligare Picloram K; or Tordon 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Boulder 6.3 can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

**Aerial Application (Helicopter Only)** - Aerial sprays should be applied using suitable drift control. See the **SPRAY ADDITIVES** and the **APPLICATION EQUIPMENT AND TECHNIQUES** section.

**Foliage Treatment (Utility and Pipeline Rights-of-Way)** – Apply 2.5 to 5 quarts of Boulder 6.3 alone per acre or tank mix 2 to 2.5 quarts per acre of Boulder 6.3 with labeled rates of 2,4-D low volatile ester; Tordon 101 Mixture; or Tordon or Alligare Picloram K. Do not apply more than 1.25 quarts per acre of Boulder 6.3 alone or in tank mix to areas that may be grazed unless the requirements specified in the Use Restrictions section are followed. Apply in total spray volume of 1 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

## Basal Bark and Dormant Brush Treatments

To control woody plants in rights-of-way, in other non-crop areas, forests, rangeland and permanent grass pastures; use Boulder 6.3 in oil or oil-water mixtures prepared and applied as described in the "Mixing Directions – Oil Mixture Sprays for Basal Treatment" section of this label. Do not graze treated areas following use of oil or oil-water mixtures. For non-foliar applications on rangeland and permanent grass pastures, apply no more than 1.25 quarts of Boulder 6.3 (2 lbs. ae of triclopyr) per acre per year.

**Oil Mixture Sprays** - Add Boulder 6.3 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture is allowed to stand for more than 4 hours, agitation is required.

**Oil-Water Mixture Sprays** - Prepare a premix of Boulder 6.3, oil, and surfactant in a separate container. Do not allow any water or mixtures containing water to get into Boulder 6.3 or the premix. Mix in spray tank as follows:

1. Fill spray tank ½ full with water.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add premix
4. Continue moderate agitation.
5. Fill remainder of spray tank.

**Note:** If the premix is put in the tank without any water, the first water added may form a thick "invert" (water in oil) emulsion which will be hard to break.

**Oil - Water Mixtures of Boulder 6.3 and Tordon or Alligare Picloram K:** When mixed together in oil, these herbicides are incompatible and will not form a stable mixture. Stable tank mixtures of Boulder 6.3 and Tordon or Alligare Picloram K for basal bark application can be made if each product is first combined with a compatibility agent prior to final mixing in oil in the desired ratio. (See product bulletin for mixing instructions.)

**Basal Bark Treatment** - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 2.5 to 13 quarts of Boulder 6.3 in enough oil to make 100 gallons of spray solution. Apply with knapsack sprayer or power spraying equipment using low pressure (20-40 PSI). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground. Thorough wetting is necessary for good control. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line.

**Low Volume Basal Bark Treatment** - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 12.7 to 19 gallons of Boulder 6.3 in enough oil to make 100 gallons of spray solution. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks in a manner which thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line or when stem surfaces are saturated with water.

**Boulder 6.3 Plus Tordon or Alligare Picloram K in Oil Tank Mix** – Boulder 6.3 and Tordon or Alligare Picloram K may be applied as a low volume basal bark penetrant to improve control of certain woody species such as ash, elm, maple, poplar, aspen, hackberry, oak, oceanspray, birch, hickory, pine, tanoak, cherry, locust, sassafras, and multiflora rose.

**Streamline Basal Bark Treatment** - To control or suppress susceptible woody plants, mix 12.7 to 19 gallons of Boulder 6.3 with 10% penetrant such as Cide-Kick or similar penetrant in enough oil to make 100 gallons of spray solution. Apply with a backpack or knapsack sprayer using equipment which provides a directed straight stream spray. For stems less than 3 inches in basal diameter, apply sufficient spray to one side of the stems to form a treated zone that is 6 inches in height. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes.

Treat both sides of stems which are 3 to 4 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above the ground. Pines (loblolly, slash, shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated.

Best results are achieved when applications are made to young vigorously growing stems which have not developed the thicker bark characteristic of slower growing, under-story trees in older stands. This technique is not recommended for scrub and live oak species, including blackjack, turkey, post, live, bluejack and laurel oaks, or bigleaf maple. Apply from approximately 6 weeks prior to hardwood leaf expansion in the spring until approximately 2 months after leaf expansion is completed. Do not apply when snow or water prevent spraying at the desired height above ground level.

**Low Volume Stem Bark Band Treatment (North Central and Lake States)** - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 12.7 to 19 gallons of Boulder 6.3 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6 to 10 inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made at any time, including winter months.

**Thinline Basal Bark Treatment** - To control susceptible woody plants with stems less than 6 inches in diameter, apply Boulder 6.3 either undiluted or mixed at 50-75% v/v with oil in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band around each stem or clump. Use a minimum of 2 to 15 milliliters of Boulder 6.3 or oil mixture with Boulder 6.3 to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required.

## Dormant Stem Treatment

Dormant stem treatments can be used to control susceptible woody plants and vines with < 2 inch diameter stems. Plants with > 2 inch diameter stems may not be controlled and resprouting may occur. This application method works best in dense areas with small diameter brush. Dormant stem treatments of Boulder 6.3 can also be used as a chemical side-trim to control lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 2.5 to 5 quarts of Boulder 6.3 in 2 to 3 gallons of crop oil concentrate or other recommended oil. Add this mixture to enough water to make 100 gallons of spray solution. Use continuous agitation to maintain mix. Apply in 70 to 100 gallons per acre with Radiarc, OC or equivalent nozzles, or handgun to ensure uniform stem coverage. In western states, apply anytime after woody plants are dormant. In other areas, apply anytime within 10 weeks of bud break, generally February through April. Do not apply to wet or saturated bark as poor control may result.

For improved control of black cherry, mix Boulder 6.3 with 4 quarts of Weedone 170 herbicide. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soil surface.

## Cut Stump Treatment

Resprouting of cut stumps of susceptible species can be controlled by mixing 12.7 to 19 gallons of Boulder 6.3 in enough oil to make 100 gallons of spray solution. Apply at low pressure with a backpack or knapsack sprayer; using either solid cone or flat fan nozzles. Apply to the root collar area, sides of the stump, and the outer portion of the cut surface including cambium. The treated area should be thoroughly wet, but do not apply to the point of runoff. Vary spray mixture concentration according to size and susceptibility of treated species. Applications can be made at any time of the year, including in winter months. Do not apply when snow or water prevent application to the ground line.

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## Cut Stump Treatment in Western States

Resprouting of cut stumps of salt-cedar and other *Tamarix* spp., bigleaf maple, tanoak, Oregon myrtle, and other susceptible species can be controlled by treating the cambium and adjacent wood around the circumference of the cut stump to wet. Applications may be made at any time during the year, however, reduced control may occur during periods of moisture stress as can occur in late summer. Use an applicator which can be calibrated to deliver small amounts.

**Note:** All basal bark and dormant brush treatments may be used on grazed range and permanent pasture land provided that no more than 1.25 quarts/acre/year of Boulder 6.3 are applied. Large plants or species requiring higher rates of Triclopyr may not be completely controlled. See the **Use Restrictions** section for grazing restrictions.

## Chemical Mowing on Non-Cropland Sites Infested with Annual and Perennial Broadleaf Weeds or Woody Plants

To control annual and perennial broadleaf weeds and for suppression and stem density reduction of woody plants that occur on rights-of-way, airport grounds, petroleum tank farms or other industrial sites, Boulder 6.3 may be applied to the cut surfaces of weed or brush stubble under the deck of a rotary mower such as the Lucas "64" System or other approved equipment that is designed to uniformly apply the herbicide. Apply when growing conditions are favorable and the weeds are actively growing.

**Broadleaf Weed Control:** Using a minimum spray volume of 3 gallons per acre, apply the rate specified in the "Broadcast Applications with Ground Equipment – Broadleaf Weed Control" section of this label. To improve weed control or broaden the spectrum of weeds controlled, follow the label directions for herbicides that may be applied in tank mix combination with Boulder 6.3.

**Woody Plant Control:** For suppressing and reducing stem density of woody species, use 2 to 3.75 quarts of Boulder 6.3 in a minimum spray volume of 5 gallons per acre. To improve woody plant control or broaden the spectrum of woody plants controlled, follow label directions for herbicides that may be applied in tank mix combination with Boulder 6.3.

## Forest Management Applications

For broadcast applications, apply the specified rate of Boulder 6.3 in a total of 5 to 25 gallons per acre by air or in 10 to 100 gallons per acre by ground. Use sufficient spray volumes to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives used for drift minimization that produce larger droplets may require higher spray volumes to provide adequate plant coverage.

**Conifer Plant Back Interval** – Conifer injury may occur if conifers are planted sooner than 1 month after Boulder 6.3 treatments at rates up to 2.5 quarts per acre; or if conifers are planted sooner than 2 months after treatment with rates of 2.5 to 3.75 quarts per acre. When herbicide tank mixtures are used for forest site preparation, use the longest plant back waiting period recommended on any tank mix partner.

## Forest Site Preparation (Not For Conifer Release)

**Broadcast Applications in Southern States (Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia)** - To control susceptible woody plants and broadleaf weeds, apply 2.5 to 3.75 quarts per acre of Boulder 6.3. Boulder 6.3 may be applied at a rate of 1.25 to 2.5 quarts per acre in a tank mix combination with labeled rates of Tordon 101 Mixture or Tordon or Alligare Picloram K to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon 101 Mixture and Tordon or Alligare Picloram K are not registered for use in California and Florida. For grass control, Boulder 6.3, alone or in combination with Tordon or Alligare Picloram K or Tordon 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

## Broadcast Applications in All Other States (Except those listed as Southern States)

- To control susceptible woody plants and broadleaf weeds, apply 2 to 3.75 quarts per acre of Boulder 6.3. Boulder 6.3 may be applied at a rate of 1 to 2 quarts per acre in a tank mix combination with labeled rates of Tordon 101 Mixture, Tordon or Alligare Picloram K, or 2,4-D low volatile ester to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon 101 Mixture and Tordon or Alligare Picloram K are not registered for use in California and Florida. For grass control, Boulder 6.3, alone or in combination with Tordon or Alligare Picloram K or Tordon 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

**Site Preparation in Southern Coastal Flatwoods** - To control susceptible broadleaf weeds and woody species such as gallberry and wax-myrtle, and for partial control of saw-palmetto, apply 1.25 to 2.5 quarts per acre of Boulder 6.3. To control species such as fetterbush, staggerbush, titi, and grasses, apply Boulder 6.3 at 1.25 to 2 quarts per acre in a tank mix combination with labeled rates of Arsenal Applicator's Concentrate or Alligare Imazapyr 4SL herbicide. To control gallberry, wax-myrtle, broadleaf weeds, and grasses, 1.25 to 2 quarts per acre of Boulder 6.3 may be applied in tank mix combination with labeled rates of Alligare Glyphosate 4 herbicide.

Apply as broadcast applications during site preparation of flat planted or bedded sites; or as bands over the tops of beds on bedded sites. Best results will occur if applications are made in late summer or fall. Efficacy may not be satisfactory for early season applications made prior to August.

**Note: Do not apply after planting pines.**

## Conifer Release Applications

**Note:** Conifer release applications may cause temporary damage and growth suppression

of conifers where direct contact occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

## Directed Sprays

To release conifers from competing hardwoods and brush such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, pin cherry, *Ceanothus* spp., blackberry, chinquapin, and poison oak, mix 2.5 to 13 quarts of Boulder 6.3 in enough water to make 100 gallons of spray mixture. Direct the spray onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent. Make applications any time after the hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct the spray solution away from conifer foliage, particularly foliage of desirable pines. See the **RATES** Table in the **APPLICATIONS DIRECTIONS** section for relationship between mixing rate, spray volume and maximum application rate.

## Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only)

Make broadcast applications of Boulder 6.3 at 1.25 to 2.5 quarts per acre for control of broadleaf weeds and susceptible woody plant species such as gallberry and wax-myrtle. To broaden the spectrum of woody plants controlled to include fetterbush, staggerbush, and titi, apply 1.25 to 2 quarts per acre of Boulder 6.3 in a tank mix with labeled rates of Arsenal Applicator's Concentrate. Saw-palmetto will be partially controlled by use of Boulder 6.3 at 2.5 quarts per acre or by a tank mix of Boulder 6.3 at 1.25 to 2 quarts per acre with either Arsenal Applicator's Concentrate, Alligare Imazapyr 4SL, Escort, or Alligare MSM 60.

These mixtures should be broadcast applied over target understory brush species, **but to prevent injury to pines, make applications underneath the foliage of pines.** For best results, apply 30 or more gallons per acre of spray solution. Make applications in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

## Broadcast Applications for Conifer Release in the Pacific Northwest and California

**Dormant Conifers Before Bud Swell (Excluding Pines)** -To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, alder, scotch broom, or willow **before leaf-out** or evergreen hardwoods such as madrone, chinquapin, and *Ceanothus* spp., use Boulder 6.3 at 1.25 pints to 1.25 quarts per acre. Diesel or fuel oil may be used as diluents. If applying in water, add 1 to 2 gallons per acre of diesel oil, a suitable surfactant, or an oil substitute at manufacturer's recommended rates.

**Conifer Plantations (Excluding Pines) Before Conifer Bud Break and After Hardwoods Begin Growth ("Early Foliar" Hardwood Stage)** – Apply Boulder 6.3 at 1.25 to 2 pints per acre alone or in a tank mix with 2,4-D low volatile ester herbicide in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

**Conifer Plantations (Excluding Pines) After Conifers Harden Off in Late Summer and While Hardwoods Are Still Growing Actively** – Apply Boulder 6.3 at 1.25 to 2 pints per acre alone or in a tank mix with 2,4-D low volatile ester in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

## Broadcast Applications for Conifer Release in the Eastern United States

To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Boulder 6.3 at 1 to 2 quarts per acre alone or in a tank mix with 2,4-D amine or low volatile ester. Apply no more than 4 pounds acid equivalent per acre from both products. Make applications in late summer or early fall after conifers have formed their over-wintering buds; and hardwoods are in full leaf prior to autumn coloration.

## Broadcast Applications for Conifer Release in the Lake States Region

To release spruce, fir, and red pine from competing hardwoods such as aspen, birch, maple, cherry, willow, oak, hazel, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Boulder 6.3 at rates of 1 to 2 quarts per acre. Make applications in late summer or early fall after conifers have formed their over-wintering buds and hardwoods are in full leaf prior to autumn coloration.

## Application Directions for Rangeland, Permanent Grass Pastures, and Conservation Reserve Program (CRP) Acres

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Boulder 6.3.

**Florida:** Boulder 6.3 may be applied to non-irrigation ditchbanks and fencerows on farms and ranches in addition to those uses listed in this section of the label.

## Application Methods

### Foliage Treatment with Ground Equipment

Use sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use higher spray volumes.

### High-Volume Foliage Treatment

To control susceptible woody plants, use the specified rate of Boulder 6.3 alone or in a tank mix to make 100 gallons of spray mixture. For rangeland and permanent pasture sites,

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make 1 application per year and apply no more than 1.25 quarts of Boulder 6.3 (2 lbs. ae of triclopyr) per acre. Boulder 6.3 may be tank mixed with other herbicides at directed rates (see application rates table below) to control a broader spectrum of woody plants and broadleaf weeds. Be sure to follow all applicable use directions, precautions, and limitations on the respective product labels when tank mixing.

Apply sufficient spray volume to thoroughly wet all leaves, stems, and root collars. Minimize spray drift by using the minimum spray pressure that provides adequate plant coverage without forming a mist and direct sprays no higher than the top of the target plants. A drift control additive cleared for application to growing crops may also be used to reduce spray drift. For best results, apply when woody plants and weeds are actively growing.

		Application Rates per 100 Gallons of Spray
Boulder 6.3	Plus Tank Mix Product	Rate (qt)
1.25 pts. - 2.5 qts.	—	—
1.25 pts. – 1.25 qts.	Grazon® P+D specialty herbicide	4
0.63 pt. -1.25 pts.	2,4-D low volatile ester herbicide	1-2
1.25 pts. – 1.25 qts.	Tordon or Alligare Picloram 22K specialty herbicide	1-2
1.25 qts.	Reclaim® specialty herbicide <sup>1,2</sup> or Alligare Clopyralid 3	2

<sup>1</sup>Reclaim® is registered for use only in Arizona, Texas, Oklahoma and New Mexico.

<sup>2</sup>See directions for Mesquite Control Using High Volume Foliage Treatment below.

**Mesquite Control Using High Volume Foliage Treatment:** To control low to moderate density mesquite infestations, apply a tank mixture of Boulder 6.3 and Reclaim to individual plants with a backpack or hand-held sprayer or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 1.25 quarts of Boulder 6.3 with 2 quarts of Reclaim per 100 gallons of total spray solution (1/2% v/v of each product). Apply in water or as an oil-water emulsion as described in the Mixing Directions Section. If an oil-water emulsion is used, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but do not spray to the point of runoff. This application method works best for brush less than 8 feet tall since efficient treatment and thorough coverage of taller brush is difficult to achieve using this method. Do not apply when mesquite foliage is wet. The total amount of Reclaim applied should not exceed 1 1/3 pints per acre. For best results, follow information given elsewhere in this label concerning effect of environmental conditions and application timing on control. To minimize drift, select a spray nozzle and pressure that generates a coarse spray and provides good coverage. Drift may be reduced by directing sprays no higher than the top of target plants and by using the minimum pressure necessary to obtain plant coverage without forming a mist. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

## Broadcast Application With Aerial or Ground Equipment

Brush and weed control results are influenced by environmental conditions and application timing; for best results, apply when woody plants and weeds are actively growing. For woody species, apply when leaf tissue is fully expanded and terminal growth has slowed after the rapid growth period of early spring. To ensure adequate foliage for herbicide absorption, brush regrowth should be at least 4 ft. high prior to treatment. The presence of healthy foliage at the time of application as well as adequate soil moisture before and after treatment are important factors contributing to optimal herbicidal activity.

Apply sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre for ground applications and at least 2 gallons of total spray volume per acre for aerial applications. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use higher spray volumes.

**Mesquite:** The herbicidal response of mesquite is strongly influenced by foliage condition, growth stage and environmental conditions. For best results, apply when soil moisture is adequate for plant growth, the soil temperature is above 75°F at a depth of 12 to 18 inches, and new growth foliage has turned from light to dark green. Apply within 60 days after the 75°F minimum soil temperature at the 12 to 18 inch depth has been reached (the rate of soil warm-up at the 12 to 18 inch depth may vary with soil texture and drainage with coarse-textured (sandy) soils warming up sooner than fine-textured (clay) soils and dry soils warming up more quickly than wet soils). If the application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases, product performance may be adversely affected. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season and to ensure adequate foliage for herbicide absorption, mesquite regrowth should be at least 4 ft. high prior to treatment.

## Mesquite Only

Apply 1/3 to 2/3 pint of Boulder 6.3 per acre in combination with 2/3 to 1 1/3 pints per acre of Reclaim. Refer to the Reclaim label for additional treatment recommendations and information on mesquite control. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

## Mesquite and Prickly Pear Cactus

For prickly pear cactus in association with mesquite, apply a tank mix of 1/3 to 2/3 pint of Boulder 6.3 with 1 to 2 pints of Tordon or Alligare Picloram 22K per acre. For a higher and more uniform plant kill of prickly pear, use the 2 pint per acre rate of Tordon or Alligare Picloram 22K. To control prickly pear while providing improved control of mesquite, Tordon or Alligare Picloram 22K may also be applied in combination with Reclaim. Refer to the Tordon or Alligare Picloram 22K and Reclaim labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

## South Texas Mixed Brush (Mesquite, Prickly Pear Cactus, Blackbrush, Twisted Acacia and Granjeno)

If prickly pear is a problem, apply 2/3 to 1.25 pints of Boulder 6.3 in a tank mixture with 2 pints of Tordon or Alligare Picloram 22K per acre. If mesquite is the prevalent species apply 2/3 to 1.25 pints of Boulder 6.3 with 2/3 to 1 1/3 pints of Reclaim per acre. Boulder 6.3 contributes to the control of non-legume species such as granjeno and oaks; however, for improved control if primarily woody legume species are present, apply 2 pints of Tordon or Alligare Picloram 22K per acre in combination with 2/3 to 1 1/3 pints of Reclaim per acre. Refer to the Tordon or Alligare Picloram 22K and Reclaim labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 15 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application. For acceptable brush control, an oil/water emulsion and good spray coverage is critical.

## Sand Shinnery Oak Suppression

In Texas, New Mexico and Oklahoma, for suppression of shinnery oak growing on sandy soils apply Boulder 6.3 alone at a rate of 1/3 to 1.25 pints per acre. Following suppression, grass response may be significant if rainfall is adequate. Deferring grazing after application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

## Post Oak and Blackjack Oak – Regrowth Stands

Apply when oak leaves are fully developed (expanded) in late spring to early summer (May-July). Use 1.25 quarts of Boulder 6.3 alone or in tank mix combination with 0.5 to 1 pint of 2,4-D low-volatile ester herbicide per acre. Apply as an oil/water emulsion or water surfactant dilution in at least 5 gallons per acre total volume by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre total volume by ground equipment. Use no more than 1 gallon of oil per acre for both aerial and ground application. For suppression only, lower rates may be used. Control will require at least 3 consecutive treatments. **Note:** Because regrowth plants have a large root mass relative to top growth, delay broadcast treatment until top growth is at least 4 ft. tall in order for the top growth to intercept and translocate sufficient herbicide to control the roots.

**High Volume Foliage Treatment:** For regrowth less than 4 ft tall, apply 1.25 quarts of Boulder 6.3 per 100 gallons of water and 2 quarts of ag surfactant alone or in tank mix combination with 1 gallon of Grazon P+D or 1 quart of Tordon or Alligare Picloram 22K. Apply to individual plants as a high volume leaf-stem treatment using ground equipment.

## Post Oak and Blackjack Oak – Mature Stands

To control mature stands (greater than 5 ft tall), apply 1.25 quarts of Boulder 6.3 per acre when oak leaves are fully developed (expanded) in late spring to early summer (May-July). When using Boulder 6.3 alone, some understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will be suppressed or defoliated but not controlled. Where these understory species occur, control may be improved by tank mixing 1.25 quarts of Boulder 6.3 with 1 quart of Tordon or Alligare Picloram 22K or 4 quarts of Grazon P+D per acre. For best results, apply using fixed-wing aircraft or helicopter as an oil/water emulsion in a total volume of 5 or more gallons per acre.

## Other Susceptible Woody Plants

Apply 1.25 pints to 1.25 quarts of Boulder 6.3 alone or in combination with 2 to 3 quarts of 3.8 lb/gal 2,4-D low volatile ester or amine formulation per acre. If applications are made when plants are mature late in the summer, during drought conditions, or if difficult to control species such as ash, choke cherry, elm, maple or oaks are prevalent on the site, use the higher rates of Boulder 6.3, alone or with 2,4-D. For increased control of certain species, Boulder 6.3 may also be applied in a tank mixture with Grazon P+D or Tordon or Alligare Picloram 22K, refer to the labels for Grazon P+D and Tordon or Alligare Picloram 22K for additional information and treatment recommendations. Apply in 4 gallons or more total volume per acre aerially or in 10 gallons or more total volume per acre when using ground equipment. Apply during or after bloom for best results on blackberry. For management of kudzu, use 1.25 pints of Boulder 6.3 per acre. To achieve the desired level of control, repeat applications may be necessary.

## Susceptible Broadleaf Weeds

When weeds are actively growing, apply 1.25 pints of Boulder 6.3 per acre as a broadcast spray in a total volume of 10 or more gallons per acre by ground equipment or in a total volume of 2 or more gallons per acre aerially. Boulder 6.3 at a rate of 1/3 to 2 pints may be tank mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

## Growing Point and Leaf Base (Crown) Treatment of Yucca

Prepare a 2% v/v solution of Boulder 6.3 in diesel or fuel oil (8.25 fl oz of Boulder 6.3 in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

## Conservation Reserve Program (CRP) for Established Permanent Grass Stands

**NOTE:** Use Boulder 6.3 on CRP acres only after perennial grasses are well established.

**Broadcast Application Ground or Aerial:** For small weed control, apply 2/3 to 1.25 pints of Boulder 6.3 per acre. For deep-rooted perennial and susceptible woody species control apply up to 1 quart of Boulder 6.3 per acre. Apply in 2 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications.

## Restrictions:

- Apply no more than 1 quart of Boulder 6.3 per acre per growing season on CRP acres.
- When applying to CRP lands, follow all applicable state and federal regulations. Follow the most severe grazing restriction imposed by the pesticide label or by the USDA Acreage Conservation Reserve Program. After that time period, follow local (CRP) guidelines regarding cropping and haying restrictions. If legumes are a desired cover crop during CRP, do not use Boulder 6.3.



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## Application Directions for Ornamental Turf

Refer to Table 2 for a list of broadleaf weeds controlled by Boulder 6.3.

For spot treatments, do not apply more than 1.25 qts. of Boulder 6.3 per acre in a single application.

Foliar sprays should be applied during warm weather, from early spring through fall, when weeds are actively growing. Broadleaf weeds germinate at different times. Only emerged weeds present at the time of application will be controlled. Newly seeded turf should be mowed 2 or 3 times before being treated. When making applications to mature plants, hard-to-control species, or during drought conditions, use higher rates. Application under drought conditions may provide less than desirable results. Use low pressure sprays to minimize spray drift. Do not water for 24 hours after application.

### Mixing Instructions

When Boulder 6.3 is mixed with water it forms an emulsion (not a solution) and separation may occur unless the spray mixture is agitated continuously.

Add about one-half the required amount of clean water to the spray tank. Start agitation and add the specified amount of Boulder 6.3. Provide moderate agitation while completing the addition of water and during application.

**Reseeding Precaution:** Do not reseed for 3 weeks after application. (This precaution does not apply when bermudagrass turf is overseeded with perennial ryegrass at a minimum reseeding of 400 lbs. per acre.)

### Broadcast Treatment of Ornamental Turf

Apply 2/3 to 1.25 pints per acre of Boulder 6.3 in enough water to provide uniform coverage of the target area to control actively growing broadleaf weeds growing in perennial bluegrass, perennial ryegrass, or tall fescue. Do not use on other turfgrass species (see Use Precautions section of this label) unless injury can be tolerated. To minimize turf injury, do not treat if turf is under heat-or drought-stress and make repeat applications at least 4 weeks apart.

**Tank Mixing:** To improve the spectrum of activity, Boulder 6.3 may be tank mixed at a rate of 1/3 to 2/3 pint per acre with directed rates of low volatile amine or ester formulations of 2,4-D, MCPP, or other labeled postemergence broadleaf herbicides. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

### Spot Treatment of Ornamental Turf

Mix 0.25 to 0.5 ounces of Boulder 6.3 per 1000 square feet in enough water to provide uniform coverage of the target area and apply at any time broadleaf weeds are susceptible.

**Note:** Do not apply more than 1.25 quarts per acre or 1 ounce per 1000 square feet of Boulder 6.3 in a single application.

### Control of Kikuyugrass

Apply Boulder 6.3 at a rate of 2/3 to 1.25 pints per acre. To improve activity, MSMA herbicide may be tank mixed with the 2/3 pint per acre rate of Boulder 6.3. Three to four additional applications at 4 to 6 week intervals may be required to achieve control of kikuyugrass.

### Suppression of Bermudagrass

Apply Boulder 6.3 at the rate of 1.25 pints per acre. Three to four additional applications at 4 week intervals will be required to give adequate suppression of bermudagrass and allow fescue or other desired turfgrass species to dominate. To improve suppression and control of bermudagrass, 1.25 pints per acre of Boulder 6.3 may be tank mixed with a postemergence grass herbicide registered for this use pattern. Three to four additional applications of this tank mix at 4 week intervals should be made to achieve control. Reseeding following application will accelerate the transition to cool season turf (see Reseeding Precautions above).

Table 1  
Woody Plants Controlled by Boulder 6.3

Alder	Gallberry	Poplar
Arrowwood	Gorse	Salmonberry
Ash	Granjeno	Saltbush ( <i>Braccharis</i> spp.)
Aspen	Guajillo	Saltbush (silver myrtle) <sup>3</sup>
Bear Clover (Bearmat)	Guava <sup>3</sup>	Salt Cedar <sup>1</sup>
Beech	Hawthorn	Sassafras
Birch	Hazel	Scotch Broom
Blackberry	Hickory	Sumac
Blackbrush	Hornbeam	Sweetbay Magnolia
Black gum	Huisache (suppression)	Sweet Gum
Boxelder <sup>1</sup>	Kudzu <sup>2</sup>	Sycamore
Brazilian Pepper	Locust	Tan Oak
Buckthorn	Madrone	Thimbleberry
Cascara	Maples	Tree-of-Heaven ( <i>Ailanthus</i> ) <sup>1</sup>
Ceanothus	Milkweed Vine <sup>3</sup>	Trumpet Creeper <sup>3</sup>
Cherry	Mulberry	Tulip Poplar
Chinquapin	Oaks	Twisted Acacia
Choke Cherry	Osage Orange	Virginia Creeper <sup>3</sup>
Cottonwood	Pepper Vine <sup>3</sup>	Wax Myrtle
<i>Crataegus</i> (hawthorn)	Persimmon	Wild Rose
Dogwood	Persimmon, Eastern	Willow
Douglas fir	Pine	Winged elm
Elderberry	Poison Ivy	
Elm	Poison Oak	

<sup>1</sup>For best control, use either a basal bark or cut stump treatment.

<sup>2</sup>For complete control, retreatment may be necessary.

<sup>3</sup>Basal or dormant stem applications only.

Table 2  
Annual and Perennial Broadleaf Weeds Controlled by Boulder 6.3

Black Medic	Field Bindweed	Sericea Lespedeza (1)
Bull Thistle	Goldenrod	Smartweed
Burdock	Ground Ivy	Sulfur Cinquefoil (2)
Canada Thistle	Lambsquarters	Sweet Clover
Chicory	Lespedeza	Tropical Soda Apple (3)
Cinquefoil	Matchweed	Vetch
Clover	Mustard	Wild Carrot (Queen Anne's)
Creeping Beggarweed	Oxalis	Lace)
Dandelion	Plantain	Wild Lettuce
Dogfennel	Purple Loosestrife	Wild Violet
	Ragweed	Yarrow

(1) **Sericea lespedeza:** Apply 2/3 to 1.25 pints of Boulder 6.3 per acre. For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom.

(2) **Sulfur cinquefoil:** Apply 2/3 to 1.25 pints of Boulder 6.3 per acre. For best results, apply to plants in the rosette stage.

(3) **Tropical soda apple:** When plants reach the first flower stage, apply 1.25 pints of Boulder 6.3 per acre. For best results, apply using ground equipment in a total spray volume of 40 gallons per acre. To provide more complete wetting and coverage of the foliage, an agricultural surfactant may be added at the manufacturer's recommended rate. To control sparse plant stands, use spot treatments. For spot treatment use a 1 to 1.5% solution of Boulder 6.3 in water (1 to 1 1/2 gallons of Boulder 6.3 in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage. In Florida, control of tropical soda apple may be improved by using the following management practices:

- Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue mowing on this schedule through April.
- In late May to June (50 to 60 days after the April mowing), apply a broadcast treatment of Boulder 6.3.
- To control any remaining plants or to thin stands of plants that germinate following a broadcast treatment, use spot treatments.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Store above 28°F or agitate before use.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product (that cannot be used according to label instructions) must be disposed of on site or at an approved waste disposal facility.

### CONTAINER DISPOSAL:

#### [NONREFILLABLE CONTAINERS:]

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

#### [REFILLABLE CONTAINERS:]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

## LIMITED WARRANTY, TERMS OF SALE, AND LIMITATION OF LIABILITY

Upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors



as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

**Limitation of Liability:** To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

Grazon, Reclaim and Tordon are registered trademarks of Dow AgroSciences LLC.

EPA 20181226



# Threesome®

## Herbicide

Selective broadleaf weed control for turfgrass including use on sod farms. To control clover, dandelion, henbit, plantains, wild onion, and many other broadleaf weeds. Also for highways, rights-of-way and other similar non-crop areas as listed on this label.

Contains 2,4-D, mecoprop-p, and dicamba.

### ACTIVE INGREDIENTS

Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid*.....	30.56%
Dimethylamine Salt of (+)-R-2-(2-Methyl-4-Chlorophenoxy)propionic Acid***.....	8.17%
Dimethylamine Salt of Dicamba (3,6-Dichloro-o-anisic Acid)***.....	2.77%
<b>OTHER INGREDIENTS:</b> .....	58.5%
<b>TOTAL:</b> .....	100.00%

Isomer Specific Method, Equivalent to:

*2,4-Dichlorophenoxyacetic Acid .....	25.38%, 2.38 lbs/gal
**(+)-R-2-(2-Methyl-4-Chlorophenoxy)propionic Acid....	6.75%, 0.63 lbs/gal
***3,6-Dichloro-o-anisic Acid .....	2.30%, 0.22 lbs/gal

‡CONTAINS THE SINGLE ISOMER FORM OF MECOPROP-p

### KEEP OUT OF REACH OF CHILDREN

## DANGER – PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

*(If you do not understand the label, find someone to explain it to you in detail.)*

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive. Causes irreversible eye damage. Do not get in eyes, or on skin or clothing.

Harmful if swallowed.

### FIRST AID

<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-800-424-9300 for emergency medical treatment information.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

EPA Reg. No: 86064-5

EPA Est. No: 228-IL-1

**NET CONTENTS: 2.5 GAL**

Manufactured for:

United Turf Alliance, LLC

8014 Cumming Highway, Suite 403-282

Canton, GA 30115



## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

### **All mixers, loaders, applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks, and
- Protective eyewear (goggles, face shield or safety glasses)\*
- Chemical-resistant gloves
- Chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

\*Eye protection is not required ONLY when 5 or more parts water is used to dilute 1 part of this product.

See engineering controls for additional requirements.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE.

If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## Engineering Controls Statement

When handlers use closed systems, enclosed cabs, in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

#### **Users should:**

- Wash hands, face, and arms with soap and water before eating, smoking, drinking or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## **ENVIRONMENTAL HAZARDS**

This product is toxic to fish and aquatic invertebrates and may adversely affect non-target plants. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

This product has 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. Application around a cistern or well may result in contamination of drinking water or groundwater.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D and MCPP-p have been associated with mixing/loading and disposal sites. Caution should be exercised when handling these herbicides at such sites to prevent contamination of groundwater supplies. Use of the closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

## **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. READ ENTIRE LABEL BEFORE USING THIS PRODUCT. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

This product is for use on Ornamental Turf Lawns (Residential, Industrial and Institutional), Parks, Cemeteries, Athletic Fields and Golf Courses (Fairways, Aprons, Tees and Roughs) and similar turf areas. Also for use on Sod Farms. For turf use, the maximum number of broadcast applications per treatment site is 2 per year. Product should not be used in or near greenhouses.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Aerial application is prohibited.

Use of this product in certain portions of California, Oregon and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et al. v. EPA, C01-0132C, (W.D. WA). For further information, please refer to <http://www.epa.gov/espp>.

### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls worn over short-sleeved shirt and short pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment areas until spray has dried.

### **SPRAY DRIFT MANAGEMENT**

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of ground application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

#### **Droplet Size**

Use only Medium or coarser spray nozzles according to ASAE (S572) definition for standard nozzles or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

## **Wind Speed**

Do not apply at wind speeds greater than 10 mph. Only apply this product if the wind direction favors an on target deposition and there are not sensitive areas (including, but not limited to residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind.

## **Temperature Inversions**

If applying at wind speeds less than 3 mph, the applicator must determine if: 1) conditions of temperature inversion exist, or 2) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

## **Susceptible Plants**

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to, cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

## **Other State and Local Requirements**

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

## **Equipment**

All ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Do not apply with a nozzle height greater than 4 feet above the crop canopy.

## **USE PRECAUTIONS**

Avoid mist to vegetables, flowers, ornamentals, shrubs, trees and other desirable plants. Do not pour spray solutions near these plants. Do not spray on carpetgrass, dichondra nor on lawns or turf where desirable clovers are present. Avoid fine mists. Except as noted, use only lawn-type sprayers. Coarse sprays are less likely to “wind-drift”. Use coarse spray droplets. Do not spray roots of ornamentals and trees. Do not exceed specified dosages for any area; be particularly careful within the dripline of trees and other species. Do not apply to newly seeded grasses until well established. Avoid broadcast applications when air temperature exceeds 90°F. When using small, spot treatment applications in temperature over 90°F, turf injury may occur. When treating Carpetgrass, avoid broadcast applications when air temperature exceeds 80°F. When air temperatures exceed 80°F, limit application to spot treatment only.

Apply only to dormant St. Augustine (Common, Raleigh and Seville varieties grown in Texas, Louisiana, Mississippi only) and dormant Centipede grasses (Texas, Louisiana, Mississippi only).

Avoid applying during excessively dry or hot periods unless irrigation is used. For optimum results: (1) turf should not be mowed for 1 to 2 days before and after application; (2) do not apply if rain is expected within 4 hours after the application, delay irrigation cycle for 24 hours. Reseed no sooner than three to four weeks after application of this product. Failure to observe all precautions may result in injury to turf and/or susceptible plants.

This product can be mixed with some liquid fertilizers or liquid iron materials. Because liquid fertilizer and liquid iron differ in pH, free ammonia content, density, salt concentration and percentage of water, a compatibility test is recommended prior to mixing in application equipment. All regulations, either State or Federal, relating to the application of liquid fertilizers or liquid iron and this product must be strictly followed.

### **WEEDS CONTROLLED**

Bedstraw	Dandelion	Lespedeza	Poison oak	Wild carrot
Black medic	Dock	Mallow	Purslane	Wild garlic
Buckhorn	Ground ivy	Morningglory	Ragweed	Wild lettuce
Burdock	Healall	Peppergrass	Sheep sorrel	Wild onion
Chicory	Henbit	Pigweed	Shepherdspurse	Yarrow and other
Chickweed	Knotweed	Plaintain	Speedwell	broadleaf weeds
Clover	Lambsquarter	Poison ivy	Spurge	

**TURF, ORNAMENTAL**  
**(golf courses, cemeteries, parks, sports fields, turfgrass, lawns and other grass areas)**  
**AND**  
**TURF (grown for seed or sod)**  
**APPLICATION RATES**

Site	Use Rate (Fluid Ounces)	Spray Volume (Gallons)	Use Rate (Pints)	Spray Volume (Gallons)	Use Directions
	Per 1,000 sq ft		Per Acre		(Normal Applications)
Bahiagrass Bluegrass Common Bermudagrass Fescue Ryegrass Zoysiagrass	1.1 to 1.5	0.5 to 5	3 to 4	5 to 220	<p><b>For Professional Lawn Maintenance</b>            Higher water volumes may be used when tank-mixed with a turf fertilizer. Follow fertilizer labels for proper amounts to add.            Use reduced rates if grass is stressed from heat or drought.            Exercise care when applying during growth stages from dormancy to green-up and from green-up to dormancy. Some temporary discoloration may occur on warm season grasses.</p> <p><b>If Bermudagrass is dormant</b>            Up to 4 pints per acre may be used. However, some hybrid Bermudagrasses may be sensitive to this product. Contact your local extension service weed control specialist.</p>



Site	Use Rate (Fluid Ounces)	Spray Volume (Gallons)	Use Rate (Pints)	Spray Volume (Gallons)	Use Directions
	Per 1,000 sq ft		Per Acre		(Normal Applications)
Dormant St. Augustine (Common, Raleigh and Seville varieties grown in Texas, Louisiana, Mississippi only) Dormant Centipede grasses (Texas, Louisiana, Mississippi only)	0.75 to 0.90 maximum	1 to 5	2 to 2.5 maximum	40 to 200	Use reduced rates if grass is stressed from heat or drought. Exercise care when applying during growth stages from dormancy to green-up and from green-up to dormancy. Some temporary discoloration may occur on warm season grasses.
Bentgrass (Putting and Bowling Greens)	0.67 maximum	3.3	1.8 maximum	145	Apply on closely mowed Bentgrass, preferably in May or mid-August through September. Slight turf yellowing will disappear after about one week. On closely mowed golf course fairways and tees or bowling greens – apply when weeds are actively growing and temperatures are low. Exercise care to avoid over application to prevent injury. Temporary discoloration may occur.

**NOTE:** Care should be taken to avoid overdosing Bentgrass or injury may result. Large volumes of spray water (i.e. one fluid ounce in 5 gallons of water per 1,500 square feet) will aid in obtaining uniform coverage. If hand-type sprayers are used, it is preferable to use a single nozzle sprayer rather than a multiple nozzle boom as sideways application with a boom where the spray from more than one nozzle is allowed to fall on the same area will result in heavy local over-application and subsequent turf discoloration or injury.

Ornamental Turf: Maximum single application rate is 5 pints product (1.49 lbs. 2,4-D ae) per acre. Maximum yearly application rate is 10 pints product (2.97 lbs. 2,4-D ae) per acre. Make no more than 2 applications per year.

Turf Grown for Seed/Sod: Maximum single application rate is 6.5 pints product (1.93 lbs. 2,4-D ae) per acre. Maximum yearly application rate is 13 pints product (3.87 lbs. 2,4-D ae) per acre. Make no more than 2 applications per year. Minimum interval of 30 days between applications.

Equipment	Application	Use Rate		Use Directions
		Fluid Ounces per 1,000 square feet	Pints per Acre	
Controlled Droplet Applicators (CDA), Atomizers and Spinning Disk Applicators	Cool season grasses	1.1 to 1.5	3 to 4	Use in sufficient water to assure coverage (1 to 4 gallons of water per acre is normal for this type of equipment). Do not overlap spray patterns.
	Listed warm season grasses	0.75 to 0.9	2 to 2.5	Use in sufficient water to assure coverage (1 to 4 gallons of water per acre is normal for this type of equipment); and follow CDA spray instructions for cool season grasses. Use reduced rates if grass is stressed from heat, drought, etc.
Lower Volume Equipment	Cool season and listed warm season grasses	1.1 to 1.5	3 to 4	Use as little as 5 gallons of water per acre. Use only application equipment that is capable of spreading a uniform droplet, wetting each weed surface.

### NON-CROPLAND

**(Fencerows, hedgerows, roadsides, ditches, rights-of-way, utility, powerlines, railroads, airports, and industrial sites)**

Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.

### **Roadsides (including aprons and guardrails), rights-of-way and other similar non-crop areas**

For control of broadleaf weeds, mix at a rate of 1.5 to 3.5 quarts of this product per acre in enough water to wet all parts of the foliage. This may require 50 to 300 gallons of water per acre. This mixture will cover 43,560 square feet. Thoroughly saturate all weeds with spray mixture. Apply any time between the time when plants come into full leaf (spring) to when the plants begin to go dormant. Best results are obtained when weeds are young and actively growing. Do not cut weeds until herbicide has translocated throughout the plant causing root death. For small broadleaf weeds, use the lower rate. Heavy, dense stands require the higher rate with the high water volume. For small (spot) applications with small tank sprayers, apply at the

rate of 4 ounces of this product per gallon of water and spray to thoroughly wet all foliage.

Annual/Perennial Control: Make no more than 2 applications per year.

For control of woody plants, apply to both stems and foliage any time from the time foliage is completely matured until the time plants start to go dormant. All leaves, stems and suckers must be completely wet to the ground line for effective control. Regrowth may be anticipated on the more resistant species.

## Woody Brush

Add 1 to 1.5 gallons of this product per acre to wet all parts of the brush foliage, stem and bark. This may require up to 200 to 600 gallons of water per 43,560 square feet depending upon the height and thickness of the brush. Mix thoroughly before spraying. The 1.5 gallon rate is applicable to spot treatment (an area of less than 1,000 square feet) applications only.

Woody Plant Control: Make no more than 1 application per year.

This product will either kill, control or suppress the weeds listed in the label booklet for this product. Some of these species may require repeat spot applications even under ideal conditions for application.

**Maximum Seasonal Application Rate to non-crop sites is 4 pounds 2,4-D Acid equivalent per acre per application site.**

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Always use original container to store pesticides in a secured warehouse or storage building. Store at temperatures above 32°F. If allowed to freeze, remix before using. This does not alter this product. Containers should be opened in well ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Turf Alliance, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Turf Alliance, LLC and Seller harmless for any claims relating to such factors.

United Turf Alliance, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or United Turf Alliance, LLC, and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, UNITED TURF ALLIANCE, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law, neither United Turf Alliance, LLC nor Seller shall be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED TURF ALLIANCE, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED TURF ALLIANCE, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

United Turf Alliance, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of United Turf Alliance, LLC.

ArmorTech® and THREESOME® are registered trademarks of United Turf Alliance, LLC.

EPA 20110323

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** ArmorTech Threesome  
**EPA Reg. No.:** 86064-5  
**Product Type:** Herbicide  
**Company Name:** United Turf Alliance, LLC  
8014 Cumming Highway, Suite 403-282  
Canton, GA 30115  
770-335-3015

**Telephone Numbers:** For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,  
Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call 1-800-222-1222

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

**2. HAZARDS IDENTIFICATION****PHYSICAL HAZARDS:**

None known.

**HEALTH HAZARDS:**

Serious eye damage	Category 1
Acute toxicity, oral	Category 4
Skin Sensitization	Category 1

**ENVIRONMENTAL HAZARDS:**

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

**SIGNAL WORD:**

DANGER

**HAZARD STATEMENTS:**

Causes serious eye damage. Harmful if swallowed. May cause an allergic skin reaction. Toxic to aquatic life with long-lasting effects.

**PRECAUTIONARY STATEMENTS**

Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear eye protection and protective gloves. Avoid breathing mist, vapors, or spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice. Wash contaminated clothing before reuse.

Collect spillage.

Dispose of contents in accordance with local, state, and federal regulations.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

COMPONENT	CAS NO.	% BY WEIGHT
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	29.6 - 31.5
Dimethylamine Salt of Mecoprop-p Acid	66423-09-4	7.75 - 8.6
Dimethylamine Salt of Dicamba (3,6-Dichloro-o-Anisic Acid)	2300-66-5	2.6 – 2.9
Other Ingredients	Trade Secret	Trade Secret

**Synonyms:** Herbicide Mixture of 2,4-D DMA, Mecoprop-p (MCP-p) DMA and Dicamba

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

**4. FIRST AID MEASURES**

**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. Get immediate medical attention.

**If Swallowed:** Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. If symptoms develop, get medical advice.

**If Inhaled:** Move person to fresh air. If breathing is difficult, administer oxygen. If symptoms develop, get medical advice.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. If irritation or rash occurs, get medical advice.

**Most important symptoms/effects, acute and delayed:** Causes severe eye irritation with possible eye damage. May be harmful if swallowed. May cause allergic skin reaction (sensitization).

**Indication of immediate medical attention and special treatment needed, if necessary:** Get immediate medical attention for eye contact. For ingestion there is no specific antidote available. Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

**Unusual Fire and Explosion Hazards:** If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

**Hazardous Decomposition Materials (Under Fire Conditions):** May produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:** Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Environmental Precautions:** Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

**Methods for Containment:** Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

**Methods for Clean-Up and Disposal:** Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

**Other Information:** Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

**7. HANDLING AND STORAGE****HANDLING:**

Do not get in eyes, on skin or on clothing. Users should wash hands, face and arms with soap before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and

## SAFETY DATA SHEET

## ArmorTech Threesome

change into clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

### STORAGE:

Do not store near seed, fertilizer or other pesticides. Always use original container to store pesticides in a secured warehouse or storage building. Store at temperatures above 32° F. If allowed to freeze, remix before using. This does not alter the product. Containers should be opened in well-ventilated areas. Keep container tightly sealed when not in use. Do not contaminate water, food or feed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

### Personal Protective Equipment:

**Eye/Face Protection:** To avoid contact with eyes, wear face shield, goggles or safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

**Skin Protection:** To avoid contact with skin, wear long pants, long-sleeved shirt, shoes plus socks and chemical-resistant gloves. Wear a chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposure to the concentrate. An emergency shower or water supply should be readily accessible to the work area.

**Respiratory Protection:** Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

**General Hygiene Considerations:** Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

### Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
DMA Salt of 2,4-D	10*	NE	10* (inhalable, skin)	NE	mg/m <sup>3</sup>
DMA Salt of Mecoprop-p	NE	NE	NE	NE	
DMA Salt of Dicamba	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

\*Based on adopted limit for 2,4-Dichlorophenoxyacetic acid

NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Dark brown liquid
<b>Odor:</b>	Mild odor- slight phenolic
<b>Odor threshold:</b>	No data available
<b>pH:</b>	6.78(1% dispersion in DIW)
<b>Melting point:</b>	Liquid at room temperature
<b>Initial boiling point and boiling range</b>	No data available
<b>Flash point:</b>	Not applicable due to aqueous solution
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available
<b>Relative density:</b>	1.127 g/cc @ 21° C
<b>Solubility(ies):</b>	Soluble
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Autoignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	7.95 cPs @ 21° C
<b>VOC Emission Potential (%):</b>	2.09

## SAFETY DATA SHEET

## ArmorTech Threesome

**Note:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

### 10. STABILITY AND REACTIVITY

**Reactivity:** This product is not normally reactive.

**Chemical Stability:** This material is stable under normal handling and storage conditions.

**Possibility of Hazardous Reaction:** Will not occur.

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame.

**Incompatible Materials:** Strong oxidizing agents: bases and acids.

**Hazardous Decomposition Products:** Under fire conditions, may produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

### 11. TOXICOLOGICAL INFORMATION

**Likely Routes Of Exposure:** Eye and skin contact.

**Symptoms of Exposure:** Causes severe eye irritation and possible irreversible eye damage. Mildly irritating to the skin based on toxicity studies. Overexposure by skin absorption may cause symptoms similar to those for ingestion. Low inhalation toxicity based on toxicity studies. May be irritating to the respiratory tract. Overexposure by inhalation may cause symptoms similar to those from ingestion. Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

**Delayed, immediate and chronic effects of exposure:** Repeated or prolonged skin exposure may cause allergic skin reaction (sensitization).

#### Toxicological Data:

Data from laboratory studies conducted on this formulation:

**Oral,** Rat LD<sub>50</sub>: 1,697 mg/kg

**Dermal,** Rat or Rabbit LD<sub>50</sub>: >5,000 mg/kg

**Inhalation,** Rat 4-hr LC<sub>50</sub>: >2.14 mg/L (no mortalities at highest dose tested)

**Eye Irritation,** Rabbit: Corrosive

**Skin Irritation,** Rabbit: Slightly irritating

**Skin Sensitization,** Guinea Pig: Not considered to be a contact sensitizer

**Subchronic (Target Organ) Effects:** Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.

**Carcinogenicity / Chronic Health Effects:** The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice, as well as an MCPP lifetime feeding study in rats, did not show carcinogenic potential. Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity).

**Reproductive Toxicity:** No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animal studies. Animal tests with dicamba have not demonstrated reproductive effects.

**Developmental Toxicity:** Studies in laboratory animals with 2,4-D and MCPP have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. Animal tests with dicamba have not demonstrated developmental effects.

**Genotoxicity:** There have been some positive and some negative studies, but the weight of evidence is that neither 2,4-D nor MCPP is mutagenic. Animal tests with dicamba have not demonstrated mutagenic effects.

#### Assessment Carcinogenicity:

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides (2,4-D, MCPP)	No	2B	No	No
DMA Salt of Dicamba	No	No	No	No
Other Ingredients	No	No	No	No



## 12. ECOLOGICAL INFORMATION

**Environmental Hazards:**

This pesticide may be toxic to fish and aquatic invertebrates and may adversely affect non-target plants.

**Ecotoxicity:****Data on 2,4-D Dimethylamine Salt:**

96-hour LC <sub>50</sub> Bluegill:	524 mg/l	Bobwhite Quail Oral LD <sub>50</sub> :	500 mg/kg
96-hour LC <sub>50</sub> Rainbow Trout:	250 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	>5,620 ppm
48-hour EC <sub>50</sub> Daphnia:	184 mg/l		

**Data on Mecoprop-p Dimethylamine Salt:**

96-hour LC <sub>50</sub> Bluegill:	112 mg/l	Bobwhite Quail Oral LD <sub>50</sub> :	>5600 ppm
96-hour LC <sub>50</sub> Rainbow Trout:	111 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	625 ppm
48-hour EC <sub>50</sub> Daphnia:	256 mg/l	72-hour EC <sub>50</sub> Green Algae:	100 mg/l

**Data on Dicamba Acid:**

96-hour LC <sub>50</sub> Bluegill:	135 mg/l	Bobwhite Quail 8-day Dietary LC <sub>50</sub> :	>10,000 ppm
96-hour LC <sub>50</sub> Rainbow Trout:	135 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	>10,000 ppm
48-hour EC <sub>50</sub> Daphnia:	110 mg/l		

**Environmental Fate:**

In laboratory and field studies, 2,4-D DMA salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks. Mecoprop-p DMA rapidly dissociates to parent mecoprop-p in the environment. In soil, mecoprop-p is microbially degraded with a typical half-life of approximately 11 to 15 days. Dicamba has low bioaccumulation potential, is not persistent in soil, is highly mobile in soil and degrades rapidly.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**

Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Handling and Disposal:**

**Nonrefillable Containers 5 Gallons or Less:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable Containers Larger than 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container Larger than 5 Gallons:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

#### 14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this SDS.

**DOT:**

**< 25 gallons per completed package**

Non Regulated

**≥25 but < 119 gallons per completed package**

UN 3082, Environmentally hazardous substances, liquid, n.o.s., (2,4-D salt), 9, III, RQ, (2,4-D salt)

**≥119 gallons per completed package**

UN 3082, Environmentally hazardous substances, liquid, n.o.s., (2,4-D salt), 9, III, RQ (2,4-D salt), Marine Pollutant

**IMDG:**

UN 3082, Environmentally hazardous substances, liquid, n.o.s., (2,4-D salt), 9, III, Marine Pollutant

**IATA:**

UN 3082, Environmentally hazardous substances, liquid, n.o.s., (2,4-D salt), 9, III, Marine Pollutant

#### 15. REGULATORY INFORMATION

##### EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

DANGER. Corrosive, causes irreversible eye damage. Do not get in eyes, or on skin or clothing. Harmful if swallowed.

##### U.S. FEDERAL REGULATIONS

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SARA Hazard Notification/Reporting:**

**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Acute Health

**Section 313 Toxic Chemical(s):**

Dimethylamine Dicamba (CAS No. 2300-66-5), 2.6 – 2.9% by weight in product

**Reportable Quantity (RQ) under U.S. CERCLA:**

Dimethylamine Dicamba (CAS No. 2300-66-5) None given

**RCRA Waste Code:**

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

**State Information:**

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** Not Listed.

**6. OTHER INFORMATION****National Fire Protection Association (NFPA) Hazard Rating:****Rating for this product: Health: 3    Flammability: 1    Reactivity: 0**

Hazards Scale: 0 = Minimal    1 = Slight    2 = Moderate    3 = Serious    4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, United Turf Alliance, LLC makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will United Turf Alliance, LLC be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

**Date of Issue:**                      March 6, 2015**Supersedes:**                      October 1, 2014

# SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



## 1. IDENTIFICATION

**PRODUCT NAME:** Boulder 6.3

**DESCRIPTION:** A liquid herbicide.

**EPA Reg. No.:** 81927-54

**COMPANY IDENTIFICATION:**

**Alligare, LLC**

13 N. 8<sup>th</sup> Street

Opelika, AL 36801

## 2. HAZARD IDENTIFICATION

### WARNING

Harmful if swallowed (H302)

Toxic to aquatic life (H401)

Combustible liquid (H227)



### HAZARD CLASSIFICATION

**Health Hazards**

Acute toxicity, oral

**Category**

4

**Physical Hazards**

Flammable liquids

**Category**

4

**Environmental Hazards**

Hazardous to the aquatic environment, acute

**Category**

2

### HAZARDS NOT REQUIRING CLASSIFICATION

None.

### PRECAUTIONARY STATEMENTS

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)

Do not eat, drink, or smoke when using this product. (P270)

Wash hands and skin thoroughly after handling. (P264)

Wear protective gloves / protective clothing. Refer to Section 8 for specific PPE requirements. (P280)

**IF SWALLOWED:** Call a POISON CENTER/Doctor if you feel unwell. Rinse mouth. (P301+P312+P330)

Avoid release to the environment not in accordance with the product label. (P273)

Store in a well-ventilated place. (P403)

Dispose of contents / container in accordance with local regulations. Refer to the product label for specific disposal instructions. (P501)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Common Name**

Triclopyr (BEE)

**Chemical Name**

(3,5,6-trichloro-2-pyridinyl)oxyacetic acid, butoxyethyl ester

**CAS #**

64700-56-7

**Composition**

83.9%

## 4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

**IF SWALLOWED:** Immediately call a doctor or poison control center. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

## 5. FIREFIGHTING MEASURES

**Flash Point:** 68°C (155°F)

**Flammable Limits (LFL-UFL):** Not applicable

**Fire and Explosion Hazards:** Toxic, irritating vapors may be formed or given off if product is involved in fire.

**Extinguishing Medium:** Water fog, foam, CO<sub>2</sub>, or dry chemical.

**Fire Fighting Equipment:** Firefighters should be equipped with self-contained positive pressure breathing apparatus and full bunker gear.

**Fire Fighting Instructions:** Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

**Hazardous Combustion Products:** Nitrogen oxides, hydrogen chloride and phosgene

**NFPA Ratings:** Health – 1 / Flammability – 2 / Reactivity - 0

## 6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this SDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labeled containers for recycling or salvage. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations.

## 7. HANDLING AND STORAGE

**Keep out of reach of children.**

**Handling:** Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

**Storage:** Store above 28°F or agitate before use. Store in original container in a well ventilated, dry place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

**Protective Clothing:** Long-sleeved shirt and long pants and shoes plus socks.

**General:** Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Amber, slightly viscous liquid	<b>pH:</b>	4.62 (25°C)
<b>Odor:</b>	Aromatic odor	<b>Kinematic viscosity:</b>	Not available
<b>Melting/freezing point:</b>	Not available	<b>Solubility:</b>	Emulsifies
<b>Boiling point/Boiling range:</b>	Not available	<b>Partition coefficient:</b>	Not available
<b>Flammability:</b>	Not available	<b>Vapor pressure:</b>	Not available
<b>Flammability limits (upper/lower):</b>	Not available	<b>Density:</b>	1.25 g/mL (20°C)
<b>Flash point:</b>	155°F	<b>Relative vapor density:</b>	Not available
<b>Auto-ignition temperature:</b>	Not available	<b>Particle characteristics:</b>	Not available
<b>Decomposition temperature:</b>	Not available		

## 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** Freezing temperatures.

**CHEMICAL STABILITY:** Stable under normal use and storage conditions.

**SUBSTANCES TO AVOID:** None known.

**HAZARDOUS REACTIONS:** This product is chemically stable. No hazardous reactions if stored and handled as prescribed/indicated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Nitrogen oxides, hydrogen chloride, and phosgene

**HAZARDOUS POLYMERIZATION:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

**ORAL TOXICITY (rat LD<sub>50</sub>):** 1,750 mg/kg

**DERMAL TOXICITY (rat LD<sub>50</sub>):** > 5,050 mg/kg

**INHALATION TOXICITY (rat LC<sub>50</sub>):** > 2.15 mg/L (4-hour)

**EYE IRRITATION:** Rabbit – Minimally irritating

**SKIN IRRITATION:** Rabbit – Slightly irritating

**SKIN SENSITIZATION:** Guinea Pig – Not a contact sensitizer

**CARCINOGENICITY:**

**EPA:** Not Listed

**ACGIH:** Not Listed

**NTP:** Not Listed

**IARC:** Not Listed

**OSHA:** Not Listed

**MUTAGENIC TOXICITY:** No evidence of mutagenic effects during *in vivo* or *in vitro* studies.

**REPRODUCTIVE TOXICITY:** No evidence in animal studies.

## 12. ECOLOGICAL INFORMATION

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

## 13. DISPOSAL CONSIDERATIONS

**Do not contaminate water, food or feed by disposal.**

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product (that cannot be used according to label instructions) must be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Non-refillable container, do not reuse or refill this container. Refer to the product label for specific disposal instructions.

## 14. TRANSPORT INFORMATION

<b>UN Number:</b>	NA1993
<b>Proper Shipping Name:</b>	Combustible liquid, N.O.S. (contains Petroleum Distillates)
<b>Transport Hazard Class:</b>	Combustible liquid
<b>Packing Group:</b>	III
<b>Hazard Zone:</b>	A
<b>Marine Pollutant:</b>	No
<b>Hazardous Substance RQ:</b>	None
<b>Labels / Placards:</b>	US-DOT: Combustible liquid <sup>1</sup> IMDG, IATA: Not regulated
<b>Emergency Guide:</b>	128 (NAERG – North American Emergency Response Guide)
<b><sup>1</sup> US-DOT Note:</b>	Not regulated for shipments in containers < 119 gal (450 L).

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. REGULATORY INFORMATION

### FIFRA –

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

See inside label booklet for additional Precautionary Statements and Directions for Use including Storage and Disposal Instructions.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

## **15. REGULATORY INFORMATION (CONT.)**

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

### **SARA Title III – Section 302 Extremely Hazardous Substances**

Not listed

### **SARA Title III – Section 311/312 Hazard Categories**

Immediate, Fire

### **SARA Title III – Section 312 Threshold Planning Quantity**

N/A

### **SARA Title III – Section 313 Reportable Ingredients**

None

### **CERCLA –**

None

### **CALIFORNIA PROP 65 STATUS –**

This product does not contain any chemical known to the state of California to cause cancer or reproductive toxicity.

### **CANADA –**

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

## **16. OTHER INFORMATION**

THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

SDS Version: 2.0

Effective Date: 06/28/2018



# BUCCANEER<sup>®</sup> 5 Extra

herbicide

TENKŌZ

AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

**ACTIVE INGREDIENT:**

Glyphosate*, N-(phosphonomethyl)glycine in the form of its isopropylamine salt .....	53.8%
OTHER INGREDIENTS: .....	46.2%
TOTAL .....	100.0%

\*Contains 648 grams per litre or 5.4 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 480 grams per litre or 4 pounds per U.S. gallon of the acid, glyphosate.

## KEEP OUT OF REACH OF CHILDREN CAUTION

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**Wear long sleeved shirt, long pants, shoes, and socks.**

**DOMESTIC ANIMALS:** This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

Glyphosate	Group	9	Herbicide
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### PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product must be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

**DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

**FOR CHEMICAL SPILL, LEAK, FIRE, OR EXPOSURE  
CALL CHEMTREC (800) 424-9300**

**EPA Reg. No. 55467-15      EPA Est. No. 42750-MO-001**

**NET CONTENTS 2.5 GALS**

**Nonrefillable container.** Do not reuse or refill this container. See Storage and Disposal section of label booklet for further directions.

Tenkōz, Inc.  
1725 Windward Concourse  
Suite 410  
Alpharetta, GA 30005

60256 092018 10YR18

## PERSONAL PROTECTIVE EQUIPMENT: (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE (Personal Protective Equipment). If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS:

- User should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

**FOR TERRESTRIAL USE:** Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

**FOR AQUATIC USES:** Do not contaminate water when disposing of equipment waste waters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, are:

- coveralls
- waterproof gloves
- shoes plus socks

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep people and pets off treated areas until spray solution has dried to prevent transfer of this product onto desirable vegetation.

## Resistance-Management Recommendations

For resistance management, Buccaneer 5 Extra is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Buccaneer 5 Extra and other Group 9 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of Buccaneer 5 Extra or other Group 9 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 if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product,

and switch to another management strategy or herbicide with a different mode of action, if available.

- Contact your local extension specialist or certified crop advisors for 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 Tenkoz, Inc. at [Tenkoz.com](http://Tenkoz.com).

## STORAGE AND DISPOSAL

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

**STORAGE:** STORE ABOVE 10° F (-12° C) TO KEEP FROM CRYSTALLIZING. Crystals will settle to the bottom. If crystals form, allow product to warm above 50° F (10° C) and mix well or recirculate to redissolve.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state, or local procedures. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed.

**CONTAINER HANDLING: NOTE:** This product is available in multiple containers. Refer to the Net Contents section of this product's labeling for the applicable "Non-refillable" or "Refillable" designation. Follow the container disposal (handling) instructions below that apply to your container type / size.

**Non-refillable containers (1 and 2.5 gallons):** Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Non-refillable containers (>5 gallons):** Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Refillable containers (> 5 gallons):** Refillable container. Refill this container with glyphosate only. Do not reuse this container for any other purpose.

When this container is empty, replace the cap and seal all openings that have been made during usage and return the container to the point of purchase, or to an alternate location designated by the manufacturer at the time of purchase of this product. If not returned, clean the empty container and offer for recycling, if available.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler.

To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or re-circulate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

If the container cannot be refilled, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Read the entire label before using this product. Use only according to label instructions.

Read the “**CONDITIONS OF SALE AND WARRANTY**” statement at the end of the label before buying or using. If terms are not acceptable, return at once unopened.

## USE INFORMATION

**Product Description:** This product is a postemergent, systemic herbicide with no soil residual activity. It is generally non-selective and gives broad-spectrum control of many annual weeds, perennial weeds, woody brush and trees. It is formulated as a water-soluble liquid. It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water or other carriers according to label instructions.

Surfactant may be included in the tank mixture if desired and should only be done so based on field experience or further instructions from your local extension service, crop consultant or field representative.

**Time to Symptoms:** This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days, but on most perennial weeds may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of aboveground growth and deterioration of underground plant parts.

**Stage of Weeds:** Annual weeds are easiest to control when they are small. Best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity. Refer to the annual, perennial, woody brush and trees rate tables for recommendations for specific weeds.

Always use the higher rate of this product per acre within the labeled range when weed growth is heavy or dense or weeds are growing in an undisturbed (non-cultivated) area.

Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

**Cultural Considerations:** Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the labeled stage for treatment.

**Rainfastness:** Heavy rainfall soon after application may wash this product off of the foliage and a repeat application may be required for adequate control.

**Spray Coverage:** For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

**Mode of Action:** The active ingredient in this product inhibits an enzyme found only in plants and microorganisms that is essential to formation of specific amino acids.

**No Soil Activity:** Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Unemerged plants arising from unattached underground rhizomes or rootstocks of perennials will not be affected by the herbicide and will continue to grow.

When this product comes in contact with soil, it is bound to soil particles. Under labeled use situations, once this product is bound to soil particles, it is not available for plant uptake and will not harm off-site vegetation where roots grow into the treated area or if the soil is transported off-site. The strong affinity of this product to soil particles prevents this product from leaching out of the soil profile and entering ground water.

**Biological Degradation:** Degradation of this product is primarily a biological process carried out by soil microbes.

**Volatility:** BUCCANEER 5 Extra is non-volatile. Therefore, it cannot move as a vapor after application to affect nearby vegetation.

**Toxicology Testing:** Exposure to workers and other applicators generally is expected to pose minimal risks based on results of short-term toxicity studies. Glyphosate has been thoroughly tested and determined not to cause cancer or other adverse long-term health effects.

**Tank Mixing:** This product does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statement of each product in the tank mixture.

Buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly

allowed in this labeling. Mixing this product with herbicides or other materials not labeled on this label may result in reduced performance.

**Annual Maximum Use Rate:** Except as otherwise specified in a crop section of this label, the combined total of all treatments must not exceed 6 quarts of this product per acre per year.

For noncrop uses, the combined total of all treatments must not exceed 8 quarts of this product per acre per year.

## ATTENTION

**AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.**

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product increases when winds are gusty, as wind velocity increases, when wind direction is constantly changing or when there are other meteorological conditions that favor spray drift. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. **AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.**

**NOTE:** Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

## MIXING

Clean sprayer parts immediately after using this product by thoroughly flushing with water.

**NOTE:** REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS VISIBLY MUDDY WATER OR WATER THAT IS NOT CLEAR FROM PONDS AND DITCHES.

## Mixing with Water

This product mixes readily with water. Mix spray solutions of this product as follows: Fill the mixing or spray tank with the required amount of water. Add the labeled amount of this product near the end of the filling process and mix well. Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices where required by state or local regulations. During mixing and application, foaming

of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

## Surfactant

Surfactant may be included in the tank mixture if desired and should only be done so based on field experience or further recommendation of your local extension service, crop consultant or field representative.

## Tank Mixing Procedure

Mix labeled tank mixtures of this product with water as follows:

1. Place a 20 to 35-mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture slowly through the screen into the tank. Continue agitation.
6. Continue filling the spray tank with water and add the required amount of this product near the end of the filling process.
7. When using nonionic surfactant add it to the spray tank before completing the filling process.
8. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water-soluble liquid followed by surfactant.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.

Keep by-pass line on or near the bottom of the tank to minimize foaming. Screen size in nozzle or line strainers should be no finer than 50 mesh.

Always predetermine the compatibility of labeled tank mixtures of this product with water carrier by mixing small proportional quantities in advance.

Refer to the "TANK MIXING" section of "USE INFORMATION" for additional precautions.

## Mixing for Hand-held Sprayers

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

### Spray Solution

Desired Volume	Amount of Buccaneer 5 Extra					
	¼%	1%	1½%	2%	5%	10%
1 Gal	1 fl.oz.	1⅓ fl.oz.	2 fl.oz.	2⅔ fl.oz.	6 ½ fl.oz.	13 fl.oz.
25 Gal	1 ½ pt	1 qt	1 ½ qt	2 qt	5 qt	10 qt
100 Gal	3 qt	1 gal	1 ½ gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, it is suggested that the labeled amount of this product be mixed with water in a larger container. Fill sprayer with the mixed solution.

## Ammonium Sulfate

The addition of 1 to 2 percent dry ammonium sulfate by weight or 8.5 to 17 pounds per 100 gallons of water may increase the performance of this product when tank mixed with certain residual herbicides on annual and perennial weeds. The equivalent rate of ammonium sulfate in a liquid formulation may also be used. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides. Thoroughly rinse the spray system with clean water after use to reduce corrosion.

NOTE: When using ammonium sulfate, apply this product at rates labeled in this label. Lower rates will result in reduced performance.

## Colorants or Dyes

Agriculturally approved colorants or marking dyes may be added to this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's recommendations.

## Drift Control Additives

Drift control additives may be used with all equipment types, except wiper applicators, sponge bars and CDA equipment. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

## APPLICATION EQUIPMENT AND TECHNIQUES

**Do not apply this product through any type of irrigation system.**

This product may be applied with the following application equipment:

**Aerial – Fixed Wing and Helicopter**

**Ground Broadcast Spray** – Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

**Hand-held and High-Volume Spray Equipment** - Knapsack and backpack sprayers, pump-up pressure sprayers, handguns, handwands, mistblowers\*, lances and other hand-held and motorized spray equipment used to direct the spray onto weed foliage.

\*This product is not registered in California or Arizona for use in mistblowers.

**Selective Equipment** – Recirculating sprayers, shielded and hooded sprayers, wiper applicators and sponge bars.

**Injection Systems** - Aerial or ground injection sprayers.

**Controlled Droplet Applicator (CDA)** - Hand-held or boom-mounted applicators which produce a spray consisting of a narrow range of droplet sizes.

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.

## Aerial Equipment

**DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL.**

Use the labeled rates of this herbicide in 3 to 15 gallons of water per acre unless otherwise specified on this label. Unless otherwise specified, do not exceed 24 fluid ounces per acre. Aerial applications of this product may be made in annual cropping conventional tillage systems, fallow and reduced tillage systems and preharvest applications. Refer to the individual use area sections of this label for labeled volumes and application rates.

**NOTE:** For aerial application in California or Arkansas, see below for aerial applications in each of these states for specific instructions, restrictions and requirements. For aerial applications, consult with state or local authorities regarding any additional requirements for aerial treatments. Dicamba tank mixtures may not be applied by air in California.

Avoid direct application to any body of water.



**AVOID DRIFT** – DO NOT APPLY DURING LOW-LEVEL INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH FAVORS DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

Ensure uniform application – To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE. The maintenance of an organic coating (paint), which meets aerospace specification MIL-C-38413, may prevent corrosion.

### **State Information on Aerial Application Aerial Application in ARKANSAS Only**

AVOID DRIFT. DO NOT APPLY INTO STILL AIR WHERE THERE IS A TEMPERATURE INVERSION LAYER LOW ENOUGH FOR FINE SPRAY PARTICLES TO BECOME SUSPENDED AND MOVE OUTSIDE THE TARGET AREA WHEN THE INVERSION LAYER MOVES. DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION THAT FAVORS DRIFT. DRIFT IS LIKELY TO CAUSE DAMAGE TO ANY VEGETATION CONTACTED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Use the labeled rate of this product in 3 to 15 gallons of water per acre.

Use sufficient carrier volume and appropriate equipment set-up to form droplets large enough to avoid drift potential.

Coarse droplets in the 300 to 500 (VMD) micron range are recommended.

Applications should typically be made with the nozzle release point at 8 to 15 feet above the top of the target plants unless a greater height is required for aircraft safety.

The distance of the outermost nozzles on the boom must not exceed 75% of the length of the wingspan or rotor. In many cases reducing this distance to 65% of the length of the wingspan or rotor will improve drift control without affecting the swath width.

Nozzles must always discharge backward parallel with the air stream and never discharge downwards more than 45 degrees on fixed wing aircraft or forward of the prevailing airflow on rotary winged aircraft. Avoid the use of nozzles with wide-angle discharge.

Do not apply this product when wind speeds are in excess of 10 miles per hour.

Do not apply when there is a low-level inversion where fine spray particles could be suspended in still air and move outside the target area when the inversion layer moves. These conditions may occur when wind speeds are less than 2 mph.

Use the following guidelines when applications are made near crops or other desirable vegetation:

1. Do not apply within 100 feet of any desirable vegetation or crops.
2. If wind up to 5 miles per hour is blowing toward desirable vegetation or crops, do not apply within 500 feet upwind of the desirable vegetation or crops.
3. Winds blowing from 5 to 10 miles per hour toward desirable vegetation or crops will likely require buffer zones in excess of 500 feet.

### **Aerial Application in CALIFORNIA Only**

Use the labeled rates of this product in 3 to 15 gallons of water per acre.

Do not apply directly to water, to areas where surface water is present, or, to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

**AVOID DRIFT** – DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH FAVORS DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED.



TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Use the following guidelines when aerial applications are made near crops or desirable perennial vegetation after bud break and before total leaf drop, and/or near other desirable vegetation or annual crops.

1. Do not apply within 100 feet of all desirable vegetation or crop(s).
2. If wind up to 5 miles per hour is blowing toward desirable vegetation or crop(s), do not apply within 500 feet of the desirable vegetation or crop(s).
3. Winds blowing from 5 to 10 miles per hour toward desirable vegetation or crop(s) may require buffer zones in excess of 500 feet.
4. Do not apply when winds are in excess of 10 miles per hour or when inversion conditions exist.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the air-stream and do not increase spray volume by increasing nozzle pressure. Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

**Ensure uniform application** – To avoid streaking, uneven, or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

## CROP USES IN CALIFORNIA

See the "USE INFORMATION" and "MIXING" sections of this label for essential product performance information.

See the "CROPS" section of this label for specific recommendations on the use of this product.

Aerial applications of this product are allowed in the following situations:

1. In fallow and reduced tillage systems prior to the emergence or transplanting of labeled crops.

2. In cotton, prior to harvest. Refer to the Buccaneer 5 Extra label for specific preharvest application instructions.
3. Any crop uses subsequently approved on this label or on Supplemental Labeling for this product by California.

Do not plant subsequent crops other than those listed in the Buccaneer 5 Extra label for 30 days following application.

When applied as recommended under the conditions described, this product controls annual and perennial weeds listed in this label.

**DO NOT EXCEED A MAXIMUM RATE OF 48 FLUID OUNCES PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR IN FALLOW AND REDUCED TILLAGE SYSTEMS.**

**DO NOT EXCEED A MAXIMUM RATE OF 24 FLUID OUNCES PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR IN COTTON, PRIOR TO HARVEST.**

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### **FOR AERIAL APPLICATION IN FRESNO COUNTY, CALIFORNIA ONLY**

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#### **From February 15 through March 31 Only**

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#### **Applicable Area**

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This supplement only applies to the area contained inside the following boundaries within Fresno County, California.

North: Fresno County line  
South: Fresno County Line  
East: State Highway 99  
West: Fresno County Line

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#### **Use Information**

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Always read and follow the label directions and precautionary statements for all products used in the aerial application. Observe the following directions to minimize off-site movement during aerial application of this product. Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

#### **Written Recommendations**

A written recommendation **MUST** be submitted by or on behalf of the applicator to the Fresno County Agricultural Commissioner 24 hours prior to the application. This written

recommendation MUST state the proximity of surrounding crops, and that conditions of each manufacturer's product label and this label have been satisfied.

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## Aerial Applicator Training and Equipment

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Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

Applications at Night – Do not apply this product by air earlier than 30 minutes prior to sunrise and/or later than 30 minutes after sunset without prior permission from the Fresno County Agricultural Commissioner.

Note: For aerial application from April 1 through February 14, refer to the "AERIAL APPLICATION IN CALIFORNIA ONLY" section of this label.

[end of Arkansas and California sections]

## AERIAL SPRAY DRIFT MANAGEMENT

### SPRAY DRIFT MANAGEMENT

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory](#).

## **Aerial Drift Reduction Advisory**

[This section is advisory in nature and does not supersede the mandatory label requirements.]

## INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

## CONTROLLING DROPLET SIZE

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- 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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

## BOOM LENGTH

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

## APPLICATION HEIGHT

Applications must not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

## SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase with increasing drift potential (higher wind, smaller drops, etc.)

## WIND

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

## TEMPERATURE AND HUMIDITY

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

## TEMPERATURE INVERSIONS

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## SENSITIVE AREAS

The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

## Ground Broadcast Equipment

Use the labeled rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, spray volume should be increased within the labeled range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

## Hand-Held and High-Volume Equipment

Apply to foliage of vegetation to be controlled. For applications made on a spray-to-wet basis, spray coverage must be uniform and complete. Do not spray to the point of runoff. Use coarse sprays only.

For control of weeds listed in the annual weeds rate tables, apply a 1/2 percent solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1 percent solution.

For best results, use a 1 1/2 percent solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods which result in less than complete coverage, use a 3.75 percent solution for annual and perennial weeds and a 3.75 to 5 percent solution for woody brush and trees.

## Selective Equipment

This product may be applied through recirculating spray systems, shielded applicators, hooded sprayers, wiper applicators or sponge bars after dilution and thorough mixing with water to listed weeds growing in any noncrop site specified on this label and only when specifically labeled in cropping systems.

A recirculating spray system directs the spray solution onto weeds growing above desirable vegetation, while spray solution not intercepted by weeds is collected and returned to the spray tank for reuse.

A shielded or hooded applicator directs the herbicide solution

onto weeds, while shielding desirable vegetation from the herbicide.

A wiper or sponge applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution.

#### **AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.**

Contact of the herbicide solution with desirable vegetation may result in damage or destruction.

Applicators used above desirable vegetation must be adjusted so that the lowest spray stream or wiper contact point is at least 2 inches above the desirable vegetation. Droplets, mist, foam, or splatter of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction. Applications made above the crops should be made when the weeds are a minimum of 6 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatment may be necessary.

#### **Shielded and hooded applicators**

Use nozzles that provide uniform coverage within the treated area. Keep shields on these sprayers adjusted to protect desirable vegetation. **EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.**

A hooded sprayer is a type of shielded applicator. The spray pattern is completely enclosed on the top and all 4 sides by a hood, thereby shielding the crop from the spray solution. This equipment must be set up and operated in a manner that avoids bouncing or raising the hoods off the ground in any way. If the hoods are raised, spray particles may escape and come into contact with the crop, causing damage or destruction of the crop. The spray hoods must be operated on the ground or skimming across the ground. Tractor speed must be adjusted to avoid bouncing of the spray hoods. Avoid operation on rough or sloping ground where the spray hoods might be raised off the ground.

#### **Wiper applicators and sponge bars**

Wiper applicators are devices that physically wipe appropriate amounts of this product directly onto the weed.

Equipment must be designed, maintained and operated

to prevent the herbicide solution from contacting desirable vegetation. Operate this equipment at ground speeds no greater than 5 mph. Performance may be improved by reducing speed in areas of heavy weed infestations to ensure adequate wiper saturation. Better results may be obtained if 2 applications are made in opposite directions.

Avoid leakage or dripping onto desirable vegetation. Adjust height of applicator to ensure adequate contact with weeds. Keep wiping surfaces clean. Be aware that, on sloping ground, the herbicide solution may migrate, causing dripping on the lower end and drying of the wicks on the upper end of a wiper applicator.

Do not use wiper equipment when weeds are wet.

Mix only the amount of solution to be used during a 1-day period, as reduced activity may result from use of leftover solutions. Clean wiper parts immediately after using this product by thoroughly flushing with water.

Nonionic surfactant at a rate of 10 percent by volume of total herbicide solution is recommended with all wiper applications.

**For Rope or Sponge Wick Applicators** – Mix 3 quarts of this product in 2 gallons of water to prepare a 25 percent solution. Apply this solution to weeds listed in this section.

**For Porous-Plastic Applicators** – Solutions ranging from 25 to 100 percent of this product in water may be used in porous-plastic wiper applicators.

When applied as labeled, this product **CONTROLS** the following weeds:

Corn, volunteer	Sicklepod
Panicum, Texas	Spanishneedles
Rye, common	Starbur, bristly
Shattercane	

When applied as labeled, this product **SUPPRESSES** the following weeds:

Beggarweed, Florida	Ragweed, common
Bermudagrass	Ragweed, giant
Dogbane, hemp	Smutgrass
Dogfennel	Sunflower
Guineagrass	Thistle, Canada
Johnsongrass	Thistle, musk
Milkweed	Vaseygrass
Nightshade, silverleaf	Velvetleaf
Pigweed, redroot	

## Injection Systems

This product may be used in aerial or ground injection spray systems. It may be used as a liquid concentrate or diluted prior to injecting into the spray stream. Do not mix this product with the concentrate of other products when using injection systems.

## CDA Equipment

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount labeled in this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 3 to 15 gallons of water per acre.

For the control of annual weeds with hand-held CDA units, apply a 20 percent solution of this product at a flow rate of 2 fluid ounces per minute and a walking speed of 1.5 mph (1 ½ pints per acre). For the control of perennial weeds, apply a 20 to 40 percent solution of this product at a flow rate of 2 fluid ounces per minute and a walking speed of 0.75 mph (3 to 6 pints per acre).

Controlled droplet application equipment produces a spray pattern which is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation, as damage or destruction may result.

## CROPS (Alphabetical)

This section is organized alphabetically by crop category. There may be several labeled crops listed in a crop category.

Unless otherwise specified, applications may be made to control any weeds listed in the annual, perennial and woody brush tables. Also refer to the "SELECTIVE EQUIPMENT" section.

The maximum use rates stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or separately. Calculate application rates and ensure that the total use of this and other glyphosate or sulfosate containing products does not exceed stated maximum use rate.

For any crop not listed in this "CROPS" section, applications must be made at least 30 days prior to planting.

For broadcast postemergent treatments, do not harvest or feed treated vegetation for 8 weeks following application, unless otherwise specified.

When applying this product prior to transplanting crops into plastic mulch, residues may be removed from the plastic by 0.5 inches of water via sprinkler irrigation or natural rainfall.

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## ALFALFA, CLOVER, AND OTHER FORAGE LEGUMES

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**LABELED CROPS:** Alfalfa, clover, kudzu, lespedeza, lupin, sainfoin, trefoil, velvet bean, vetch, crown vetch, milk vetch

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment (alfalfa and clover only), wiper applicators (alfalfa and clover only), renovation, preharvest (alfalfa only)

### Preplant, Preemergence and At-planting

**USE INSTRUCTIONS:** This product may be applied before, during or after planting crops listed in this section. Applications must be made prior to emergence of the crop.

**RESTRICTIONS:** Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

### Preharvest (Alfalfa only)

**USE INSTRUCTIONS:** This product may be used in declining alfalfa stands or any stand of alfalfa where crop destruction is acceptable. This application will severely injure or destroy the stand of alfalfa. This product will control annual and perennial weeds including quackgrass, when applied prior to the harvest of alfalfa. The treated crop and weeds can be harvested and fed to livestock after 36 hours. Allow a minimum of 36 hours between application and harvest. Applications may be made at any time of the year. Make only one application to an existing stand of alfalfa per year. For control of quackgrass, apply in the spring, late summer or fall when quackgrass is actively growing. Treatments for quackgrass must be followed by deep tillage for complete control.

**PRECAUTIONS:** Do not use for alfalfa grown for seed, as a reduction in germination or vigor may occur.

**RESTRICTIONS:** Do not apply more than 1.5 pints of this product per acre as a preharvest treatment.

### Spot treatment or Wiper applications (Alfalfa and Clover only)

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in alfalfa or clover. This product may be applied with wiper applicators to control or suppress the weeds listed under

“WIPER APPLICATORS” in the “SELECTIVE EQUIPMENT” section of this label. Applications may be made in the same area at 30-day intervals.

**RESTRICTIONS:** For spot treatment and wiper applications, this product must be applied in areas where the movement of domestic livestock can be controlled. No more than one-tenth of any acre must be treated at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

### Renovation

**USE INSTRUCTIONS:** This product may be applied as a broadcast spray to existing stands of alfalfa, clover, and other labeled forage legumes. Labeled crops may be planted into the treated area.

**RESTRICTIONS:** Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

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## ASPARAGUS

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**TYPES OF APPLICATIONS:** Preplant, preemergence, spot treatment, postharvest

### Preplant, Preemergence

**USE INSTRUCTIONS:** This product may be applied prior to emergence of asparagus.

**RESTRICTIONS:** Do not apply within a week before the first spears emerge.

### Spot treatment

**USE INSTRUCTIONS:** This product may be applied immediately after cutting, but prior to the emergence of new spears.

**RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. Do not harvest within 5 days of treatment.

### Postharvest

**USE INSTRUCTIONS:** This product may be applied after the last harvest and all spears have been removed. If spears are allowed to regrow, delay application until ferns have developed. Delayed treatments must be applied as a directed or shielded spray in order to avoid contact of the spray with ferns, stems or spears.

**PRECAUTIONS:** Direct contact of the spray with the asparagus may result in serious crop injury. Select and use recommended types of spray equipment for postemergence postharvest applications. A directed spray is any application where the spray pattern is aligned in such a way as to avoid direct contact of the spray with the crop. A shielded spray is any application where a physical barrier is positioned and maintained between the spray and the crop to prevent contact of spray with the crop.

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## CANOLA

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**TYPES OF APPLICATIONS:** Preplant, preemergence.

**USE INSTRUCTIONS:** This product may be applied before, during or after planting canola. Applications must be made prior to emergence of the crop.

**RESTRICTIONS:** Do not apply more than 1.5 quarts of this product per acre by ground.

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## CEREAL CROPS

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**LABELED CROPS:** Barley, Buckwheat, Millet (Pearl, Proso), Oats, Rice, Rye, Teosinte, Triticale, Wheat (All), Wild rice.

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment (except rice), post-harvest, preharvest (wheat only), wiper applicators (wheat only)

Do not treat rice fields or levees when the field contains floodwater.

### Preplant, Preemergence and At-planting

**USE INSTRUCTIONS:** This product may be applied before, during or after planting of cereal crops. Applications must be made prior to emergence of the crop.

### Spot treatment (except rice)

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in cereal crops. Apply this product before heading in small grains.

**RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in the treated area will be killed. Avoid drift or spray outside target area for the same reason.

## Postharvest

**USE INSTRUCTIONS:** This product may be applied after harvest of cereal crops. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.

**RESTRICTIONS:** For any crop not listed on this label, applications must be made at least 30 days prior to planting the next crop. Do not harvest or feed treated vegetation for 8 weeks following application.

### Preharvest (wheat only)

**USE INSTRUCTIONS:** This product provides weed control when applied prior to harvest of wheat. Apply after the hard-dough stage of grain (30% or less grain moisture) and at least 7 days prior to harvest. Wheat stubble may be grazed immediately after harvest.

This product may be applied using either aerial or ground spray equipment. For ground applications, apply this product in 10 to 20 gallons of water per acre. For aerial applications, apply this product in 3 to 10 gallons of water per acre.

**RESTRICTIONS:** Do not apply more than 1.5 pints of this product per acre. Do not apply to wheat grown for seed, as a reduction in germination or vigor may occur.

### Wiper applications (wheat only)

**USE INSTRUCTIONS:** Wiper applications may be used in wheat. To control common rye or cereal rye, apply after the weeds have headed and achieved maximum growth, when the rye is at least 6 inches above the wheat crop.

**RESTRICTIONS:** Allow at least 35 days between application and harvest. Do not use roller applicators.

**RED RICE CONTROL PRIOR TO PLANTING RICE:** Apply 1.5 pints of this product in 5 to 10 gallons of water per acre. Flush fields prior to application to obtain uniform germination and stand of red rice. Make application when the majority of the red rice plants are in the 2-leaf stage and no more than 4 inches tall. Red rice plants with less than 2 true leaves may be only partially controlled. Avoid spraying during low humidity conditions, as reduced control may result.

**DO NOT TREAT RICE FIELDS OR LEVEES WHEN THE FIELDS CONTAIN WATER. DO NOT RE-FLOOD TREATED FIELDS FOR 8 DAYS FOLLOWING APPLICATION.**

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## CHRISTMAS TREES

**TYPES OF APPLICATIONS:** Post-directed, spot treatment, site preparation

### Post-directed, Spot treatment

**USE INSTRUCTIONS:** This product may be used as a post-directed spray and spot treatment around established Christmas trees.

**RESTRICTIONS:** Desirable plants must be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material. THIS PRODUCT IS NOT LABELED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN CHRISTMAS TREES. Avoid contact of spray, drift or mist with foliage or green bark of established Christmas trees.

### Site preparation

**USE INSTRUCTIONS:** This product may be used prior to planting Christmas trees.

**PRECAUTIONS:** Precautions must be taken to protect nontarget plants during site preparation applications.

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## CITRUS CROPS

**LABELED CROPS:** Calamondin, Chironja, Citron, Citrus Hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Orange (All), Pummelo, Tangelo, Tangor

**TYPES OF APPLICATIONS:** Weed control, middles (between rows of trees), strips (in row of trees), selective equipment

**NOTE:** FOR USE DIRECTIONS, SEE THE "TREE, NUT AND VINE (GENERAL)" SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO CITRUS CROPS.

**Florida and Texas only:** For burndown or control of the weeds listed below, apply the labeled rates of this product in 3 to 30 gallons of water per acre. Where weed foliage is dense, use 10 to 30 gallons of water per acre.

For goatweed, apply 3 to 4.5 pints of this product per acre. Apply in 20 to 30 gallons of water per acre when plants are actively growing. Use 3 pints per acre when plants are less than 8 inches tall and 4.5 pints per acre when plants are greater than 8 inches tall. If goatweed is greater than 8 inches tall, the addition of Krovar® II or Karmex® may improve control.



Refer to the individual product labels for specific crops, rates, geographic restrictions and precautionary statements.

#### Perennial weeds:

S=Suppression  
PC=Partial Control

B=Burndown  
C=Control

Weed Species	BUCCANEER 5 Extra Rate Per Acre			
	1.5 PT	3 PT	4.5 PT	7.5 PT
Bermudagrass	B	-	PC	C
Guineagrass				
Texas and Florida	B	C	C	C
Ridge				
Florida Flatwoods	-	B	C	C
Paragrass	B	C	C	C
Torpedograss	S	-	PC	C

**PRECAUTIONS:** Allow a minimum of 1 day between last application and harvest.

### CONSERVATION RESERVE PROGRAM (CRP)

**TYPES OF APPLICATIONS:** Renovation (rotating out of CRP), site preparation, dormant, wiper, Rotating out of CRP, Site preparation

**USE INSTRUCTIONS:** This product may be used to prepare CRP land for crop production.

#### Dormant, Wiper

**USE INSTRUCTIONS:** This product may be used to suppress competitive growth and seed production of undesirable vegetation in CRP acres. Such applications may be made with wiper application equipment or as a broadcast or spot treatment to dormant CRP grasses. For selective applications with broadcast spray equipment, apply 9 to 12 fluid ounces of this product per acre in early spring before desirable CRP grasses, such as crested and tall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy.

**PRECAUTIONS:** Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant.

### CORN

**TYPES OF CORN:** Field corn, seed corn, sweet corn and popcorn

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, hooded sprayers, preharvest, post-harvest

#### Preplant, Preemergence and At-planting

**USE INSTRUCTIONS:** This product may be applied before, during or after planting corn. Applications must be made prior to emergence of the crop.

The following tank mixtures may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue.

Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre.

For Southern states, do not apply in nitrogen solutions to tough-to-control grasses such as barnyardgrass, fall panicum, broadleaf signalgrass, annual ryegrass and any perennial weeds. See the map in the "ANNUAL WEEDS" section of this label for areas included in this recommendation.

ATRAZINE	EXTRAZINE®	LOROX®
DICAMBA DMA SALT	FRONTIER®	MICRO-TECH®
BICEP®	GUARDSMAN®	PARTNER®
BICEP® II	HARNESS®	PROWL®
BROADSTRIKE®	HARNESS® XTRA	SIMAZINE
BULLET®	HARNESS® EXTRA 5.6L	SURPASS®
DUAL®	LARIAT®	SURPASS® 100
DUAL® II	LASSO®/ALACHLOR	TOPNOTCH®
	LINEX®	

For improved burndown, this product may be tank mixed with 2,4-D or dicamba.

**Annual weeds** – for difficult-to-control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 1.5 pints per acre in these tank mixtures. For other labeled annual weeds, apply 12 fluid ounces to 18 fluid ounces of this product per acre when weeds are less than 6 inches tall, and 1.5 to 2.25 pints when weeds are over 6 inches tall.

**RESTRICTIONS:** Applications of 2,4-D or dicamba must be made at least 7 days prior to planting corn.



The tank mix recommendations in this section are not registered in California.

### **Hooded Sprayers**

**USE INSTRUCTIONS:** This product may be used through hooded sprayers for weed control between the rows of corn. Only hooded sprayers that completely enclose the spray pattern may be used.

When applying to corn that is grown on raised beds, ensure that the hood is designed to completely enclose the spray solution. If necessary, extend the front and rear flaps of the hoods to reach the ground in deep furrows.

#### **Follow these requirements:**

- The spray hoods must be operated on the ground or skimming across the ground.
- Do not apply more than 1.5 pints of this product per acre per application.
- Corn must be at least 12 inches tall, measured without extending leaves.
- Leave at least an 8 inch untreated strip over the drill row. For example, if the crop row width is 38 inches, the maximum width of the spray hood should be 30 inches.
- Maximum tractor speed: 5 mph.
- Maximum wind speed: 10 mph.
- Use low-drift nozzles.

Crop injury may occur when the foliage of treated weeds comes into direct contact with leaves of the crop. Do not apply this product when the leaves of the crop are growing in direct contact with weeds to be treated. Droplets, mist, foam or splatter of the herbicide solution may contact the crop and cause discoloration, stunting or destruction.

**PRECAUTIONS:** Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

**RESTRICTIONS:** Do not graze or feed corn forage or fodder following applications of this product through hooded sprayers. Do not apply more than 4.5 pints of this product per acre per year for hooded sprayer applications.

### **Spot treatment**

**USE INSTRUCTIONS:** For spot treatments, apply this product prior to silking of corn.

**RESTRICTIONS:** Do not treat more than 10 percent of the

total field area to be harvested. The crop receiving spray in the treated area will be killed. Avoid drift or spray outside target area for the same reason.

### **Preharvest**

**USE INSTRUCTIONS:** Make applications at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed). For ground applications, apply up to 4.5 pints of this product per acre. For aerial applications, apply up to 1.5 pints of this product per acre.

**RESTRICTIONS:** Allow a minimum of 7 days between application and harvest. Do not treat corn grown for seed because a reduction in germination or vigor may result.

### **Post-harvest**

**USE INSTRUCTIONS:** This product may be applied after harvest of corn. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.

**RESTRICTIONS:** Do not harvest or feed treated vegetation for 8 weeks following application.

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## **COTTON**

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, hooded sprayer, selective equipment, spot treatment, preharvest

### **Preplant, Preemergence, and At-planting**

**USE INSTRUCTIONS:** This product may be applied before, during or after planting cotton. Applications must be made prior to emergence of the crop.

### **Hooded sprayer, Selective equipment**

**USE INSTRUCTIONS:** This product may be applied through hooded sprayers, recirculating sprayers, shielded applicators or wiper applicators in cotton. Allow at least 7 days between application and harvest.

**PRECAUTIONS:** See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

### **Spot treatment**

**USE INSTRUCTIONS:** For spot treatments, apply this product prior to boll opening of cotton.

**RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in treated area will be killed. Avoid drift or spray outside target area for the same reason.

### Preharvest

**USE INSTRUCTIONS:** This product provides weed control and cotton regrowth inhibition when applied prior to harvest of cotton. For weed control, apply at rates given in the annual, perennial and woody brush tables. Apply 12 fluid ounces to 3 pints of this product per acre for cotton regrowth inhibition. Allow a minimum of 7 days between application and harvest of cotton.

This product may be applied using either aerial or ground spray equipment. For ground applications, apply this product in 10 to 20 gallons of water per acre. For aerial applications, apply this product in 3 to 10 gallons of water per acre.

Apply after sufficient bolls have developed to produce the desired yield of cotton. Applications made prior to this time could affect maximum yield potential.

This product may be tank mixed with DEF® 6, Folex®, or Prep™ to provide additional enhancement of cotton leaf drop.

**RESTRICTIONS:** Do not feed or graze treated cotton forage or hay following preharvest applications. DO NOT APPLY MORE THAN 1.5 PINTS OF THIS PRODUCT PER ACRE BY AIR. Do not apply more than 1.5 quarts of this product per acre by ground. Do not apply to cotton grown for seed, as a reduction in germination or vigor may occur.

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## FALLOW SYSTEMS

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**TYPES OF APPLICATIONS:** Chemical fallow, preplant fallow beds, aid-to-tillage.

### Chemical fallow

**USE INSTRUCTIONS:** This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label. For any crop not listed on this label, applications must be made at least 30 days prior to planting. This product may be used as a substitute for tillage to control annual weeds in fallow fields. Also, broadcast or spot treatments will control or suppress many perennial weeds in fallow fields. Ground or aerial application equipment may be used. Tank mixtures with 2,4-D and dicamba may be used.

**RESTRICTIONS:** DO NOT APPLY DICAMBA TANK

### MIXTURES BY AIR IN CALIFORNIA.

Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if dicamba is applied within 45 days of planting.

### Preplant fallow beds

**USE INSTRUCTIONS:** This product may be applied to fallow beds prior to planting or emergence of any crop listed on this label. For any crop not listed on this label, applications must be made at least 30 days prior to planting. This product will control weeds listed in the annual, perennial and woody brush tables. In addition, 9 fluid ounces of this product plus 2 to 4 oz of Goal® 2XL per acre will control the following weeds with the maximum height or length indicated: 3" – common cheeseweed, chickweed, groundsel; 6" – London rocket, shepherd's purse.

12 fluid ounces of this product plus 2 to 4 oz of Goal® 2XL per acre will control the following weeds with the maximum height or length indicated: 6" – common cheeseweed, groundsel, marehail (*Conyza canadensis*), 12" – chickweed, London rocket, shepherd's purse.

### Aid-to-tillage

**USE INSTRUCTIONS:** This product may be used in conjunction with tillage practices in fallow systems or preplant to labeled crops to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail. Apply 6 fluid ounces of this product in 3 to 10 gallons of water per acre. Make applications before weeds are 6 inches in height. Application must be followed by conventional tillage practices no later than 15 days after treatment and before regrowth occurs. Allow at least 1 day after application before tillage.

**PRECAUTIONS:** Tank mixtures with residual herbicides may result in reduced performance.

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## GRAIN SORGHUM (MILO)

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, wiper applicators, hooded sprayers, preharvest, post-harvest

### Preplant, Preemergence, At-planting

**USE INSTRUCTIONS:** This product may be applied before, during or after planting grain sorghum. Applications must be made prior to emergence of the crop.

## Spot treatment and Wiper applications

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in grain sorghum. Make spot treatments before heading of milo. This product may be applied with wiper applicators to control or suppress the weeds listed under WIPER APPLICATORS" in the "SELECTIVE EQUIPMENT" section of this label.

**RESTRICTIONS:** For spot treatment, do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in treated area will be killed. Avoid drift or spray outside target area for the same reason.

For wiper applicators, allow at least 40 days between application and harvest. Do not use roller applicators. Do not feed or graze treated milo fodder. Do not ensile treated vegetation.

## Hooded Sprayers

**USE INSTRUCTIONS:** This product may be used through hooded sprayers for weed control between the rows of milo. Only hooded sprayers that completely enclose the spray pattern may be used.

When applying to milo that is grown on raised beds, ensure that the hood is designed to completely enclose the spray solution. If necessary, extend the front and rear flaps of the hoods to reach the ground in deep furrows.

## Follow these requirements:

- The spray hoods must be operated on the ground or skimming across the ground.
- Do not apply more than 1.5 pints of this product per acre per application.
- Milo must be at least 12 inches tall, measured without extending leaves. Treat before milo sends tillers between the drill rows. If such tillers are contacted with the spray solution, the main plant may be killed.
- Leave at least an 8 inch untreated strip over the drill row. For example, if the crop row width is 38 inches, the maximum width of the spray hood should be 30 inches.
- Maximum tractor speed: 5 mph.
- Maximum wind speed: 10 mph.
- Use low-drift nozzles.

Crop injury may occur when the foliage of treated weeds comes into direct contact with leaves of the crop. Do not apply this product when the leaves of the crop are growing in direct contact with weeds to be treated. Droplets, mist, foam or splatter of the herbicide solution may contact the crop and cause discoloration, stunting or destruction.

**RESTRICTIONS:** Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator. Do not graze or feed milo forage or fodder following applications of this product through hooded sprayers. Do not apply more than 4.5 pints of this product per acre per year for hooded sprayer applications.

## Preharvest

**USE INSTRUCTIONS:** Make applications at 30% grain moisture or less.

**RESTRICTIONS:** Do not apply more than 3.0 pints of this product per acre. Allow a minimum of 7 days between application and harvest of sorghum. Do not treat sorghum grown for seed, as a reduction in germination or vigor may occur. The use of this product for preharvest grain sorghum (milo) is not registered in California.

## Post-harvest

**USE INSTRUCTIONS:** This product may be applied after harvest of grain sorghum. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.

This product may be applied to grain sorghum (milo) stubble following harvest to suppress or control regrowth. Apply 1.5 pints of this product per acre for control, or 1.25 pints of this product per acre for suppression.

**RESTRICTIONS:** Do not harvest or feed treated vegetation for 8 weeks following application.

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## GRASS SEED PRODUCTION

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**TYPES OF APPLICATIONS:** Preplant, preemergence, renovation, site preparation, shielded sprayers, wiper applicators, spot treatments, creating rows in annual ryegrass.

**USE INSTRUCTIONS:** This product may be applied before, during, or after planting or renovation of turf or forage grass areas grown for seed production. Applications **MUST** be made prior to the emergence of the crop to avoid crop injury. For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control.

**RESTRICTIONS:** Do not disturb soil or underground plant parts before treatment.

Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts.

Do not feed or graze treated areas for 8 weeks following application.

### **Shielded Sprayers**

**USE INSTRUCTIONS:** Apply 1.5 pints to 4.5 pints of this product as a broadcast spray in 10 to 20 gallons of water per acre to control weeds in the rows. Uniform planting in straight rows aids in shielded sprayer applications. Best results are obtained when the grass seed crop is small enough to easily pass by or through the protective shields.

**PRECAUTIONS:** Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

### **Wiper Applications**

**PRECAUTIONS:** Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators must be adjusted so that the wiper contact point is at least two (2) inches above the desirable vegetation. Weeds should be a minimum of six (6) inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when height of weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. Better results may be obtained if 2 applications are made in opposite directions.

### **Spot Treatments**

**USE INSTRUCTIONS:** Use a 1 to 5 percent solution on a volume to volume basis with water. See the "SELECTIVE EQUIPMENT" section for additional application recommendations.

**RESTRICTIONS:** Apply this product prior to heading of grasses. Do not treat more than 10 percent of the total field to be harvested. The crop receiving the spray in the treated area will be killed. Avoid drift or spray outside the target area for the same reason.

## **Creating Rows in Annual Ryegrass**

**USE INSTRUCTIONS:** Use 12-24 fluid ounces of this product per acre mixed with water. Use the higher rate when the ryegrass is greater than 6 inches tall. Best results are obtained when applications are made before the ryegrass reaches 6 inches in height.

Set nozzle heights to allow the establishment of the desired row spacing while preventing spray droplets, spray fines, or drift to contact the ryegrass plants not treated. Use of low-pressure nozzles, or drop nozzles designed to target the application over a narrow band are recommended.

Grower assumes all responsibility for crop losses from misapplication.

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## **HERBS**

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**TYPES OF HERBS:** Peppermint, spearmint

**USE INSTRUCTIONS:** This product may be used as a spot treatment in spearmint and peppermint. Apply spray-to-wet with hand-held equipment, such as backpack and knapsack sprayers, pump-up pressure sprayers, hand-guns, hand-wands or any other hand-held or motorized spray equipment used to direct the spray solution on to a limited area.

**RESTRICTIONS:** You must allow at least 7 days between application and harvest. Do not treat more than one-tenth of any acre must be treated at one time. The crop receiving spray in the treated area will be killed. Avoid drift or spray outside the target area for this reason.

**PRECAUTIONS:** Further applications may be made in the same area at 30-day intervals.

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## **PASTURES**

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**TYPES OF PASTURES:** Bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa and clover

**TYPES OF APPLICATIONS:** Spot treatment, wiper application, preplant, preemergence, pasture renovation

### **Spot treatment and Wiper Application**

**USE INSTRUCTIONS:** This product may be applied as a spot treatment or with wiper applicators in pastures. Applications may be made in the same area at 30-day intervals.

**PRECAUTIONS:** For spot treatment and wiper applications, apply in areas where the movement of domestic livestock can be controlled.

**RESTRICTIONS:** Do not treat more than one-tenth of any acre at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

#### **Preplant, Preemergence and Pasture renovation**

**USE INSTRUCTIONS:** This product may be applied prior to planting or emergence of forage grasses and legumes. In addition, this product may be used to control perennial pasture species listed on this label prior to re-planting.

**PRECAUTIONS:** Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

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## **PEANUTS**

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting

**USE INSTRUCTIONS:** This product may be applied before, during or after planting peanuts. Applications must be made prior to the emergence of the crop.

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## **SMALL FRUITS AND BERRIES**

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**LABELED CROPS:** Blackberry, Blueberry, Boysenberry, Cranberry, Currant, Dewberry, Elderberry, Gooseberry, Huckleberry, Loganberry, Olallieberry, Raspberry (Black, Red), Youngberry

**TYPES OF APPLICATIONS:** Preplant, preemergence, directed spray (except cranberry), wiper application

**USE INSTRUCTIONS:** This product may be applied as a preplant or preemergence broadcast application or as a wiper application for crops listed in this section. Directed sprays may be applied to any crop except cranberries. For wick or wiper applicators, mix 3 quarts of this product in 4 gallons of water. In severe infestations, reduce equipment ground speed to ensure that adequate amounts of this product are wiped on the weeds. A second treatment in the opposite direction may be beneficial.

**RESTRICTIONS:** Do not permit herbicide solution to contact desirable vegetation, including green shoots, canes or foliage. Allow a minimum of 30 days between last application and harvest of cranberries. For other small fruits and berries, allow a minimum of 14 days between last application and harvest.

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## **SOYBEANS**

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, preharvest, selective equipment, hooded sprayers

#### **Preplant, Preemergence and At-planting**

**USE INSTRUCTIONS:** This product may be applied before, during or after planting soybeans. Applications must be made prior to emergence of the crop.

The following tank mixtures may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue.

CANOPY®	LASO®/ ALACHLOR	PROWL®
COMMAND®	LINEX®	PURSUIT®
DUAL®	LOROX®/ LINURON	PURSUIT® PLUS
DUAL® II	LOROX® PLUS	SCEPTER®
FRONTIER®	MICRO-TECH®	SENCOR®/ LEXONE®
FUSION®	PARTNER®	SQUADRON®
GEMINI®	PREVIEW®	TURBO®

For improved burndown, this product may be tank-mixed with products containing 2,4-D or 2,4-DB. See the 2,4-D label for intervals between application and planting.

**Annual weeds:** For difficult-to-control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 1.5 pints per acre in these tank mixtures. For other labeled annual weeds, apply 12 fluid ounces to 18 fluid ounces of this product per acre when weeds are less than 6 inches tall, and 1.5 to 2.25 pints when weeds are over 6 inches tall.

**RESTRICTIONS:** The tank mix recommendations in this section are not registered in California.

#### **Spot treatment**

**USE INSTRUCTIONS:** For spot treatments, apply this product prior to initial pod set in soybeans.

**RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in treated area will be killed. Avoid drift or spray outside target area for the same reason.

## Preharvest

**USE INSTRUCTIONS:** This product provides weed control when applied prior to harvest of soybeans.

Apply at rates given in the annual, perennial and woody brush tables. This product may be applied using either aerial or ground spray equipment. For ground applications, apply this product in 10 to 20 gallons of water per acre. For aerial applications, apply this product in 3 to 10 gallons of water per acre.

Apply after pods have set and lost all green color. Allow a minimum of 7 days between application and harvest of soybeans. Care must be taken to avoid excessive seed shatter loss due to ground application equipment.

**RESTRICTIONS:** Do not graze or harvest treated crop for livestock feed within 25 days of last preharvest application. DO NOT APPLY MORE THAN 4 QUARTS PER ACRE OF THIS PRODUCT FOR PREHARVEST APPLICATIONS. DO NOT APPLY MORE THAN 1.5 PINTS PER ACRE OF THIS PRODUCT BY AIR. Do not apply to soybeans grown for seed as a reduction in germination or vigor may occur.

## Selective equipment

**USE INSTRUCTIONS:** This product may be applied through recirculating sprayers, shielded applicators, hooded sprayers, wiper applicators or sponge bars in soybeans. Allow at least 7 days between application and harvest.

**PRECAUTIONS:** See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

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## SUGARCANE

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**TYPES OF APPLICATIONS:** Preplant, preemergence, spot treatment, fallow, hooded sprayers

## Preplant, Preemergence

**USE INSTRUCTIONS:** This product may be applied in or around sugarcane fields or in fields prior to the emergence of plant cane.

**RESTRICTIONS:** Do not apply to vegetation in or around ditches, canals or ponds containing water to be used for irrigation.

## Spot Treatment

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in sugarcane. For control of volunteer or diseased sugarcane, make a 3/4 percent solution of this product in water and spray to wet the foliage of vegetation to be controlled. Volunteer or diseased sugarcane should have at least 7 new leaves.

**RESTRICTIONS:** Avoid spray contact with healthy cane plants since severe damage or destruction may result. Do not feed or graze treated sugarcane foliage following application.

## Fallow treatments

**USE INSTRUCTIONS:** This product may be used as a replacement for tillage in fields that are lying fallow between sugarcane crops. This product may also be used to remove the last stubble of ratoon cane. For removal of last stubble of ratoon cane, apply 3 to 3 3/4 quarts of this product in 10 to 40 gallons of water per acre to new growth having at least 7 new leaves. Allow 7 or more days after application before tillage.

## Hooded sprayers

**USE INSTRUCTIONS:** This product may be used through hooded sprayers for weed control between the rows of sugarcane. A hooded sprayer is a type of shielded applicator. The spray pattern is completely enclosed on the top and all 4 sides by a hood, thereby shielding the crop from the spray solution.

Minimize the potential for spray particles to escape from under the hood by operating the sprayer at appropriate ground speeds, nozzle pressures and wind speeds. Operation on rough or sloping ground may result in spray particles escaping from the hood.

When applying to sugarcane that is grown on raised beds, ensure that the hood is designed to completely enclose the spray. If necessary, extend the front and rear flaps of the hoods to reach the ground in furrows between the rows.

Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting the crop. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

**PRECAUTIONS:** Droplets, mist, foam or splatter of the herbicide solution settling on the crop may result in discoloration, stunting or destruction.

**RESTRICTIONS:** Do not allow treated weeds to come in contact with the crop.

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## SUNFLOWERS

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**TYPES OF APPLICATIONS:** Preplant, preemergence

**USE INSTRUCTIONS:** This product may be applied before, during or after planting sunflowers.

Applications must be made prior to emergence of the crop.

A tank mixture with Prowl® may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue.

**RESTRICTIONS:** Do not apply more than 24 fluid ounces (1.5 pints) of this product per acre for sunflowers. Make only one preplant or preemergent application per year. Do not feed or graze sunflower forage following application of this product.

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## TREE AND VINE CROPS (GENERAL)

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**TYPES OF APPLICATIONS:** Weed control, middles (between rows of trees), strips (in row of trees), selective equipment (except kiwi), perennial grass suppression

**NOTE:** THIS SECTION GIVES DIRECTIONS THAT APPLY TO ALL CITRUS CROPS, TREE FRUITS, TREE NUTS AND VINE CROPS. SEE THE INDIVIDUAL CROP SECTIONS FOR INSTRUCTIONS, PREHARVEST INTERVALS, PRECAUTIONS AND RESTRICTIONS FOR SPECIFIC CROPS.

This product may be applied in middles, strips and for weed control in established citrus groves, tree fruit and tree nut orchards, and vineyards. Apply at rates given in the annual, perennial and woody brush tables. Repeat applications may be made up to a maximum of 8 quarts per acre per year. This product may also be used for site preparation prior to transplanting these crops. Allow a minimum of 3 days between application and transplanting. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high-volume wands, lances, orchard guns or with wiper applicator equipment, except as directed.

### Middles (between rows)

**USE INSTRUCTIONS:** This product will control or suppress annual and perennial weeds and ground covers growing between the rows of labeled tree and vine crops. If weeds are under drought stress, irrigate prior to application. Reduced control may result if weeds have been mowed prior to application.

A tank mixture of this product plus Goal® 2 XL may be used for annual weeds in middles between rows of citrus crops, tree fruits, tree nuts and vine crops. This mixture is recommended when weeds are stressed or growing in dense populations. 12 to 24 oz/A of this product plus the labeled rate of Goal® 2 XL will control annual weeds with a maximum height or diameter of 6 inches, including crabgrass, hairy fleabane (*Conyza bonariensis*), common groundsel, junglerice, common lambsquarters, redroot pigweed, London rocket, common ryegrass, shepherd's purse, annual sowthistle, common cheeseweed (malva), filaree (suppression), horseweed/marestail (*Conyza canadensis*), stinging nettle and common purslane (suppression). 9 to 24 oz/A of this product plus the labeled rate of Goal® 2 XL will control common cheeseweed (malva) with a maximum height or diameter of 3 inches.

### Strips (in rows)

**USE INSTRUCTIONS:** This product may be applied in rows of tree or vine crops and may also be tank mixed with the following products.

DEVIRINOL® 50 DF	PRINCEP® CALIBER 90
DIREX® 4L	SIMAZINE 4L
GOAL® 2XL	SIMAZINE 80W
KARMEX® DF	SIM-TROL™ 4L
KROVAR® I	SOLICAM® DF
KROVAR® II	SURFLAN® AS
PROWL®	SURFLAN® 75W

Do not apply these tank mixtures in Puerto Rico.

Refer to the individual product labels for specific crops, rates, geographic restrictions and precautionary statements.

Apply 12 fluid ounces to 7.5 pints of this product per acre in these tank mixtures. Use rates at the higher end of the labeled rate range when weeds are stressed, growing in dense populations or are greater than 12 inches tall.

### Perennial grass suppression

This product will suppress perennial grasses such as bahiagrass, bermudagrass, tall fescue, orchardgrass, Kentucky bluegrass, and quackgrass that are grown as ground covers in tree and vine crops.

For suppression of tall fescue, fine fescue, orchardgrass and quackgrass, apply 6 fluid ounces of this product in 10 to 20 gallons of water per acre.

For suppression of Kentucky bluegrass covers, apply 4.5 fluid ounces of this product per acre. Do not add ammonium sulfate.



For best results, mow cool season grass covers in the spring to even their height and apply this product 3 to 4 days after mowing.

For suppression of vegetative growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 4.5 fluid ounces of this product in 10 to 25 gallons of water per acre. Apply 1 to 2 weeks after full green-up or after mowing to a uniform height of 3 to 4 inches. This application must be made prior to seedhead emergence.

For suppression up to 120 days, apply 3 fluid ounces of this product per acre, followed by an application of 1.5 to 3 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

For burndown of bermudagrass, apply 1.5 pints to 3 pints of this product in 3 to 20 gallons of water per acre. Use this treatment only if reduction of the bermudagrass stand can be tolerated. When burndown is required prior to harvest, allow at least 21 days to ensure sufficient time for burndown to occur.

For suppression of bermudagrass, apply 4.5 to 12 fluid ounces of this product per acre east of the Rocky Mountains and 12 fluid ounces of this product per acre west of the Rocky Mountains. Apply in a total spray volume of 3 to 20 gallons per acre, no sooner than 1 to 2 weeks after full green-up. If the bermudagrass is mowed prior to application, maintain a minimum of 3 inches in height. Sequential applications may be made when regrowth occurs and bermudagrass injury and stand reduction can be tolerated. East of the Rocky Mountains, rates of 4.5 to 7.5 fluid ounces per acre must be used in shaded conditions or where a lesser degree of suppression is desired.

### Selective equipment

Shielded and wiper applicators may be used in tree crops and grapes. Refer to the individual crop sections for time interval between application and harvest.

**RESTRICTIONS:** For citron and olives, apply as a post-directed spray only. **EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE SOLUTION, SPRAY, DRIFT OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, SUCKERS, FRUIT OR OTHER PARTS OF TREES AND VINES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.**

**AVOID PAINTING CUT STUMPS WITH THIS PRODUCT AS INJURY RESULTING FROM ROOT GRAFTING MAY OCCUR IN ADJACENT TREES.**

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## TREE FRUITS

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**LABELED CROPS:** Apple, Apricot, Cherry (Sweet, Sour), Crabapple, Loquat, Mayhaw, Nectarine, Olive, Peach, Pear, Plum/Prune (All), Quince

**TYPES OF APPLICATIONS:** Weed control, middles (between rows of trees), strips (in row of trees), selective equipment

**NOTE:** FOR USE DIRECTIONS, SEE THE "TREE, NUT AND VINE (GENERAL)" SECTION.

THE FOLLOWING DIRECTIONS ARE SPECIFIC TO TREE FRUITS.

### Restrictions on application equipment

For cherries, any application equipment listed in this section may be used in all states.

Any application equipment listed in this section may be used in apricots, nectarines, peaches and plums/prunes growing in Arizona, California, Colorado, Idaho, Kansas, Kentucky, New Jersey, North Dakota, Oklahoma, Oregon, Texas, Utah and Washington, except for peaches grown in the states specified in the following paragraph. In all other states use wiper equipment only.

For PEACHES grown in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee only, apply with a shielded boom sprayer or shielded wiper applicator, which prevents any contact of this product with the foliage or bark of trees. Apply no later than 90 days after first bloom. Applications made after this time may result in severe damage. Remove suckers and low-hanging limbs at least 10 days prior to application. Avoid applications near trees with recent pruning wounds or other mechanical injury. Apply only near trees which have been planted in the orchard for 2 or more years. **EXTREME CARE MUST BE TAKEN TO ENSURE NO PART OF THE PEACH TREE IS CONTACTED.**

**PRECAUTIONS:** Allow a minimum of 1 day between last application and harvest for apple, crabapple, loquat, mayhaw, pear, quince.

Allow a minimum of 17 days between last application and harvest for apricot, cherry, nectarine, olive, peach, plum/prune.

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## TREE NUTS

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**LABELED CROPS:** Almond, Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (Hazelnut), Hickory nut,



Macadamia, Pecan, Pistachio, Walnut (Black, English)

**TYPES OF APPLICATIONS:** Weed control, middles (between rows of trees), strips (in row of trees), selective equipment.

**NOTE:** FOR USE DIRECTIONS, SEE THE "TREE, NUT AND VINE (GENERAL)" SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO TREE NUTS.

**PRECAUTIONS:** Allow a minimum of 3 days between last application and harvest of tree nuts.

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## TROPICAL CROPS

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**LABELED CROPS:** Atemoya, Avocado, Barbados Cherry (acerola), Banana, Breadfruit, Canistel, Carambola, Cherimoya, Cocoa beans, Coconuts, Coffee, Dates, Durian, Figs, Guava, Jaboticaba, Jackfruit, Longan, Lychee, Mango, Mangosteen, Marmaladebox (genip), Papaya, Passion fruit, Persimmon, Pineapple, Plantain, Pomegranate, Rambutan, Sapodilla, Sapote (black, mamey, white), Soursop, Sugar apple, Tamarind, Tea.

**USE INSTRUCTIONS:** This product may be applied for weed control or for site preparation prior to transplanting crops listed in this section. In coffee and banana, delay applications 3 months after transplanting to allow the new coffee or banana plant to become established.

**PRECAUTIONS:** Allow a minimum of 14 days between last application and harvest of acerola, atemoya, avocado, banana, breadfruit, canistel, carambola, cherimoya, cocoa beans, coconuts, dates, figs, genip, jaboticaba, jackfruit, longan, lychee, mango, mayhaw, passion fruit, persimmon, pomegranate, sapodilla, sapote, soursop, sugar apple, tamarind, and tea.

Allow a minimum of 28 days between last application and harvest of coffee.

Allow a minimum of 1 day between last application and harvest of banana, guava, papaya and plantain.

Do not feed or graze treated pineapple forage following application.

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## VEGETABLE CROPS

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**LABELED CROPS:** Amaranth, Arrugula, Artichoke (Jerusalem), Beans (All), Beet greens, Garden beets, Broccoli (All), Brussels sprouts, Cabbage (All), Cabbage (Chinese), Cantaloupe, Cardoon, Cavalo Broccolo, Carrot, Cauliflower,

Casaba melon, Celery, Celery (Chinese), Celeriac, Celtuce, Chard (Swiss), Chayote, Chervil, Chick peas, Chicory, Chrysanthemum, Collards, Corn salad, Crenshaw melon, Cress, Cucumber, Dandelion, Dock (sorrel), Eggplant, Endive, Fennel (florencia), Garlic, Gherkin, Ginseng, Gourds, Ground cherry, Guar, Honeydew melon, Honey ball melon, Horseradish, Kale, Kohlrabi, Leek, Lentils, Lettuce, Mango melon, Melons (All), Mizuna, Muskmelon, Mustard greens, Okra, Onion, Oriental radish, Parsley, Parsnips, Peas (All), Pepinos, Pepper (All), Persian melon, Potato (Irish), Pumpkin, Purslane, Radish, Rape greens, Rhubarb, Rutabaga, Salsify, Shallot, Spinach (All), Mustard Spinach, Squash (Summer, Winter), Sugar beets, Sweet potato, Tomatillo, Tomato, Turnip, Watercress, Watermelon, Yams.

**USE INSTRUCTIONS:** This product may be applied prior to the emergence of direct seeded vegetables or prior to transplanting vegetables.

**PRECAUTIONS:** Residues can be removed by a single 0.5 inch application of water, either by natural rainfall or via a sprinkler system. Applications made at emergence will result in injury or death to emerged seedlings.

**RESTRICTIONS:** When applying this product prior to transplanting crops into plastic mulch, care must be taken to remove residues of this product, which could cause crop injury, from the plastic prior to transplanting.

For the following crops, apply only prior to planting. Allow at least 3 days between application and planting of cantaloupe, casaba melon, crenshaw melon, cucumber, eggplant, gherkin, gourds, ground cherry, honeydew melon, honey ball melon, mango melon, melons (all), muskmelon, pepper (all), persian melon, pumpkin, squash (summer, winter), tomatillo, watercress, and watermelon.

Wiper applicators may be used in rutabagas. Allow at least 14 days between application and harvest.

**California:** prior to the emergence of tomatoes

When applied as directed under the conditions described in this label, this product controls annual and perennial weeds listed in the label, prior to the emergence of tomatoes.

See the "USE INFORMATION" and "MIXING" sections of this label for essential product performance information.

**Recommendations:** This product will control annual and perennial weeds listed in this label prior to the emergence of direct seeded tomatoes.

**Annual Weed Control** – Apply 6 to 36 fluid ounces of this product per acre plus 0.5 to 1 percent nonionic surfactant in 3 to 40 gallons of water per acre. If weeds are less than 6 inches tall, 24 fluid ounces of this product applied in 10 to 40 gallons of water per acre will control most common annual weeds. If weeds are greater than 6 inches tall, use 36 fluid ounces per acre. See the detailed directions in the “ANNUAL WEED RATE TABLES” in this label for specific treatment directions.

**Perennial Weed Control** – Apply 1.5 to 7.5 pints of this product per acre when weeds are actively growing and most have reached early head or early bud stage of growth. See the “PERENNIAL WEEDS RATE TABLE” section of this label for specific treatment directions.

This product may be applied by ground or aerial application equipment. FOR AERIAL APPLICATION IN CALIFORNIA, REFER TO THE AERIAL RESTRICTIONS SECTION OF THIS LABEL FOR AERIAL APPLICATIONS IN CALIFORNIA FOR SPECIFIC INSTRUCTIONS, RESTRICTIONS, AND REQUIREMENTS. DO NOT EXCEED 24 FLUID OUNCES OF THIS PRODUCT PER ACRE FOR AERIAL APPLICATIONS.

Applications made to light, sandy soils with low organic matter may result in injury to seedling tomatoes. Apply prior to tomato seed germination. Applications made at emergence will result in injury or death to emerged seedlings.

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## VINE CROPS

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**LABELED CROPS:** Grape (raisin, table, wine), Kiwi fruit

**TYPES OF APPLICATIONS:** Weed control, middles (between rows), strips (in row), selective equipment

**NOTE:** FOR USE DIRECTIONS, SEE THE “TREE, NUT AND VINE (GENERAL)” SECTION.

THE FOLLOWING DIRECTIONS ARE SPECIFIC TO VINE CROPS.

Applications must not be made when green shoots, canes or foliage are in the spray zone.

In the northeast and Great Lakes regions, applications must be made prior to the end of bloom stage of grapes to avoid injury, or make applications with shielded sprayers or wiper equipment.

**PRECAUTIONS:** Allow a minimum of 14 days between last application and harvest.

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## ROUNDUP READY® CROPS

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The following instructions include applications which can be made onto Roundup Ready® crops during the complete cropping season. **Do NOT** combine these treatment instructions with those made for those crops in the CROPS (ALPHABETICAL) section of this label that do not contain a glyphosate tolerant (Roundup Ready®) gene.

USE THIS PRODUCT FOR POSTEMERGENCE (IN-CROP) APPLICATION ONLY ON CROPS DESIGNATED AS CONTAINING THE ROUNDUP READY® GENE.

Applying this product to crop varieties which are not designated as Roundup Ready® will result in severe crop injury and yield loss. AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, OR ANY DESIRABLE PLANTS WHICH DO NOT CONTAIN THE ROUNDUP READY® GENE, SINCE SEVERE INJURY OR DESTRUCTION WILL RESULT.

The Roundup Ready® designation indicates that the crop variety contains a patented gene which provides tolerance to Tenkoz's glyphosate herbicides. Information on Roundup Ready® crop varieties may be obtained from your seed supplier. NOTE: Roundup Ready seed, and the method of selectivity controlling weeds using glyphosate on a Roundup Ready crop, are protected under several U.S. Patents. A license to use Roundup Ready seed must be obtained prior to use.

### Spray Drift Management

For Ground Applications with broadcast equipment, apply this product in 5 to 20 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment use flat spray nozzles. Check for even distribution of spray droplets.

For Aerial Applications apply this product in 3 to 15 gallons of water per acre. See the “APPLICATION EQUIPMENT AND TECHNOLOGIES” section of the product label for procedures to avoid spray drift that may cause injury to any vegetation not intended for treatment. Use of appropriate buffer zones will help prevent injury to adjacent vegetation.

**ATTENTION:** AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN A GLYPHOSATE TOLERANT GENE.

See the MIXING and APPLICATION EQUIPMENT AND TECHNIQUES sections of this labeling for additional directions and restrictions on the application of this product.

DO NOT exceed a maximum rate of 24 fluid ounces per acre of this product when making applications by air unless otherwise directed. For aerial application in California or Arkansas, refer to the "State Information on Aerial Application" section of this label for specific instructions, restrictions and requirements in these two states.

To prevent crop injury, tank mixtures with other herbicides, insecticides, fungicides, micronutrients or fertilizers may result in reduced weed control or crop injury and are NOT recommended for over-the-top applications of this product unless otherwise specified in this product label, or supplemental labeling published separately by Tenkoz.

Ammonium sulfate may be mixed with this product for applications to Roundup Ready crops. Refer to the "MIXING" section for USE DIRECTIONS for ammonium sulfate.

**Sprayer Preparation:** . THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT. Follow the cleaning procedures specified on the label of the product(s) previously used. Many crops can be very sensitive to herbicides at extremely low concentrations and care must be taken to thoroughly clean all equipment prior to use.

**NOTE:** The following use directions are based on a clean start at planting by using a burn down application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, a preplant burn-down treatment of 18 to 48 fluid ounces per acre of this product is required to control existing weeds prior to crop emergence. Some weeds, such as black nightshade, broadleaf signalgrass, sicklepod, Texas panicum, sandbur, annual morningglory, wooly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed with multiple germination times or suppressed (stunted) weeds may require a second application of this product for complete control. The second application should be made after some regrowth has occurred and at least 10 days after a previous application of this product.

There are no rotational crop restrictions following the application of this product.

For over-the-top uses on Roundup Ready® crop varieties, crop safety and weed control performance are not warranted by Tenkoz, Inc. when this product is used in conjunction with

"brown bag" or "bin run" seed saved from previous year's production and replanted.

## ALFALFA WITH THE ROUNDUP READY® GENE

**TYPES OF APPLICATIONS:** Preplant, at-planting, pre-emergence, post-emergence and over-the-top

### USE INSTRUCTIONS:

#### Maximum allowable yearly application rates of this Product

- |   |                                   |
|---|-----------------------------------|
| 1. Combined total for all applications, including preplant during the year of establishment | 5.8 quarts (186 fl. oz.) per acre |
| 2. Combined total for in-crop applications for newly established stands                     | 4.5 quarts (144 fl. oz.) per acre |
| 3. Preplant, at-planting and preemergence single applications                               | 3 pints (48 fl. oz.) per acre     |

**Preplant, at-planting, preemergence and post-emergence applications:** This product will control many troublesome emerged weeds with over-the-top applications in Roundup Ready alfalfa.

For ground applications with broadcast equipment, apply this product in 3 to 40 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

For aerial application, use the labeled rates of this product in 3 to 15 gallons of spray solution per acre.

### New Stand Establishment (seeding year)

Prior to First Cutting During New Stand Establishment:

- |  |                               |
|--|-------------------------------|
| From emergence up to 4 trifoliate leaves                   | 3 pints (48 fl. oz.) per acre |
| From 5 trifoliate leaves up to 5 days before first cutting | 3 pints (48 fl. oz.) per acre |

After First Cutting in Newly Established Stands:

- |   |                               |
|---|-------------------------------|
| In-crop application, per cutting, up to 5 days before cutting | 3 pints (48 fl. oz.) per acre |
|---|-------------------------------|

### Established Stands (non-seeding year):

- |  |                               |
|--|-------------------------------|
| In-Crop applications, per cutting, up to 5 days before cutting | 3 pints (48 fl. oz.) per acre |
|--|-------------------------------|

During stand establishment, due to the biology and breeding constraints of alfalfa, up to 10% of the seedlings may not contain the Roundup Ready gene and will not survive after the first application of this product. To eliminate the undesirable effects of stand gaps created by the loss of plants not containing a Roundup Ready gene, a single application of at least 1.5 pints (24 Fl. oz.) per acre of this product should be applied at or before the 3 to 4 trifoliate growth stage.

In both newly seeded and established stands, in order to maximize yield and quality potential of forage and hay, applications of this product should be made after weeds have emerged but before alfalfa growth or re-growth interferes with application spray coverage of the target weeds.

In addition to those weeds listed in the BUCCANEER 5 EXTRA HERBICIDE label booklet, this product will suppress or control the parasitic weed, Dodder (*Cuscuta* spp) in Roundup Ready alfalfa. Repeat applications may be necessary for complete control.

#### **RESTRICTIONS:**

Do not exceed 3 pints (48 fl. oz.) of this product per acre when making applications by air.

Any single over-the-top application of this product must not exceed 3 pints (48 fl. oz.) per acre.

Sequential applications of this production must be at least 7 days apart.

The combined total per year for all in-crop applications in newly established and established stands must not exceed 4.5 quarts (144 fl. oz.) per acre.

Remove domestic livestock before application and wait a minimum of 5 days after last application before grazing, or cutting and feeding of Roundup Ready alfalfa forage and hay.

**Over-the-top applications:** This product may be applied post-emergence to Roundup Ready alfalfa from emergence until 5 days prior to cutting. Any single over-the-top applications of this product must not exceed 3 pints (48 fl. oz.) per acre.

**ATTENTION:** Where Roundup Ready alfalfa is grown with a companion or cover crop, or is over seeded with a second species, over-the-top applications of this product will eliminate the non-Roundup Ready species.

#### **RESTRICTIONS:**

Sequential applications of this product must be at least 7 day apart.

Tank mixtures with other herbicides, insecticides, or fungicides may result in crop injury or reduced weed control and must not be used for over-the-top applications of this product.

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## **CANOLA WITH THE ROUNDUP READY® GENE**

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**TYPES OF APPLICATIONS:** Preplant, preemergence, postemergence

#### **USE INSTRUCTIONS:**

##### **Maximum Allowable Combined Application Quantities of this Product Per Season**

- |   |                          |
|---|--------------------------|
| 1. Preplant and preemergence applications             | 48 fluid ounces per acre |
| 2. Total in-crop application from emergence to 6-leaf | 24 fluid ounces per acre |

**For ground applications** with broadcast equipment, apply this product in 5 to 20 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment use flat fan nozzles. Check for even distribution of spray droplets.

**For aerial applications** apply this product in 3 to 15 gallons of water per acre.

**Preplant or Pre-emergent applications:** This product may be applied by aerial or ground application equipment prior to planting or emergence of canola.

**Over-the-top applications:** This product may be applied by aerial or ground application equipment postemergence to Roundup Ready® canola from emergence through the six leaf stage of development. To maximize yield potential spray canola early to eliminate competing weeds. Any single over-the-top broadcast application must not exceed 10 fluid ounces per acre. No more than two over-the-top broadcast applications may be made from crop emergence through the six leaf stage of development. Sequential over-the-top applications of this product must be at least 10 days apart.

**Weeds controlled.** For specific rates of application and instructions for control of various annual and perennial weeds, refer to the "ANNUAL" and "PERENNIAL" weed rate tables of this labeling.

Some weeds with multiple germination times or suppressed (stunted) weeds may require sequential applications of this product for control. The second application must be made after some regrowth has occurred and at least 10 days after a previous application of this product.

This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.

**PRECAUTIONS:** Allow a minimum of 60 days between last application and canola harvest.

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## CORN WITH THE ROUNDUP READY® GENE

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, postemergence, spot treatment, post-harvest

When applied as directed, this product controls labeled annual grass and broadleaf weeds in Roundup Ready® corn. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more applications of this product. Applications must be made to actively growing weeds before they reach the maximum size listed in the "ANNUAL" and "PERENNIAL" weed rate tables. Refer to the "MIXING" section of this labeling for proper use instructions.

This product may be applied postemergence to Roundup Ready® corn from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 30 inches, whichever comes first. Single in-crop applications of this product are not to exceed 24 fluid ounces per acre. Sequential in-crop applications of this product from emergence through the V8 stage or 30 inches must not exceed 48 fluid ounces per acre per growing season.

### Maximum Allowable Application Rates of this Product

1. Combined total per year for all applications	6 quarts per acre
2. Preplant, Preemergence applications	3.75 quarts per acre
3. Total in-crop applications from emergence through the V8 stage or 30 inches	48 fluid ounces per acre
4. Maximum preharvest application rate after maximum kernel fill is complete and the crop is physiologically mature (black layer formation) until 7 days before harvest	24 fluid ounces per acre

The addition of 1 to 2 percent dry ammonium sulfate by weight

or 8.5 to 17 pounds per 100 gallons of water may increase the performance of this product under hard water conditions, drought conditions or when tank mixed with Bullet®, Micro-Tech®, or Partner® Herbicides. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides. Thoroughly rinse the spray system with clean water after use to reduce corrosion. The addition of other additives, including fertilizers and micronutrients are not recommended with this product since this may result in increased potential for crop injury.

**For ground applications:** Use the labeled rates of this product in 5 to 20 gallons of spray solution per acre as a broadcast spray. Carefully select correct nozzles and spray pressure to avoid spraying a fine mist. Check for even distribution of spray droplets.

**For aerial applications:** Use the labeled rates of this product in 3 to 15 gallons of spray solution per acre.

**PRECAUTIONS:** Allow a minimum of 50 days between application of this product and harvest of corn forage and 7 days between application and harvest of corn grain. Allow a minimum of 10 days between in-crop applications of this product.

### **Weed Control Directions**

Apply 18 to 24 fluid ounces of BUCCANEER 5 Extra per acre for control of labeled grasses and broadleaf weeds in conventional and no-till corn production systems. Refer to the "ANNUAL WEED RATE TABLE" of the labeling rates for specific annual weeds. BUCCANEER 5 Extra applied at up to 24 fluid ounces per acre will control or suppress the growth of perennial weeds such as: bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, Horsenettle, nutsedge, quackgrass, rhizome Johnsongrass, redbvine, Trumpet creeper, swamp smartweed, and wirestem muhly. For additional information on perennial weeds, see the "PERENNIAL WEED RATE TABLE" in this labeling.

### Preemergence followed by Postemergence Weed Control Program

This product may be applied postemergence in-crop following any labeled preemergence herbicide application. The post application of this product must be made before the weeds reach a height and/or density that the weeds become competitive with the crop. A single in-crop application of this product at the labeled rate will provide control of emerged weeds listed on this label. This product may be applied postemergence to

Roundup Ready® corn from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 30 inches (free standing), whichever comes first.

### **Postemergence Only Weed Control Program**

This product may be applied alone as a postemergence in-crop application to provide control of emerged weeds listed on this label. The postemergence application of this product must be made before the weeds reach a height and/or density that the weeds become competitive with the crop. If new flushes of weeds occur, a sequential application of this product at 18 to 24 fluid ounces per acre will control the labeled grasses and broadleaf weeds. This product may be applied postemergence to Roundup Ready® corn from emergence through the V8 stage or until corn height reaches 30 inches (free standing), whichever comes first.

This product may be applied in tank mixture with a labeled rate of Harness®, Harness® Xtra, Harness® Xtra 5.6L, Micro-Tech®, Bullet®, Partner®, Permit® or Atrazine. Refer to the specific product label and observe all precautions and limitations on the label for all products used in tank mixtures, including application timing restrictions, soil restrictions, minimum recropping interval and rotational guidelines – the more restrictive requirements apply.

<b>Tank Mix Partner</b>	<b>Maximum Height of Corn For Application</b>
Harness® Harness® Xtra Harness® Xtra 5.6	11 inches
Bullet®* Micro-Tech®* Partner®*	5 inches
Permit®	24 inches
Atrazine	12 inches

\*Bullet, Micro-Tech and Partner are not registered for use as a postemergence application in Texas.

### **COTTON WITH THE ROUNDUP READY® GENE**

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, over-the-top, post-directed, hooded sprayer, preharvest

**ATTENTION:** This product is for use only over-the-top of or directed onto improved cotton varieties that are designated

as cotton with the Roundup Ready® gene. SEVERE INJURY OR DEATH OF COTTON WILL RESULT IF ANY COTTON VARIETIES NOT PROPERLY DESIGNATED AS HAVING THE ROUNDUP READY® GENE ARE SPRAYED WITH THIS PRODUCT.

ROUNDUP READY® COTTON VARIETIES MUST BE PURCHASED FROM AN AUTHORIZED LICENSED SEED SUPPLIER. THE DESIGNATION, "ROUNDUP READY", INDICATES THE COTTON VARIETY CONTAINS A PATENTED PROPRIETARY TRAIT.

### **USE INSTRUCTIONS:**

#### **Maximum Allowable Yearly Rates of this Product**

- |  |                      |
|--|----------------------|
| 1. Combined total per year for all applications      | 6 quarts per acre    |
| 2. Preplant, Preemergence applications               | 3.75 quarts per acre |
| 3. Total in-crop applications from cracking to layby | 3 quarts per acre    |
| 4. Maximum preharvest application rate               | 1.5 quarts per acre  |

**For ground applications** with broadcast equipment, apply this product in 5 to 20 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

**For aerial applications**, apply this product in 3 to 15 gallons of water per acre.

**PRECAUTIONS:** The combined total application from crop emergence until harvest must not exceed 4.5 quarts per acre.

**Over-the-top applications:** This product may be applied by aerial or ground application equipment postemergence to Roundup Ready® cotton from the ground cracking stage until the four leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Over-the-top applications made after the four leaf (node) stage of development may result in boll loss, delayed maturity and/or yield loss. Any single over-the-top broadcast application must not exceed 24 fluid ounces per acre. No more than two over-the-top broadcast applications may be made from crop emergence through the

four leaf (node) stage of development. Sequential over-the-top applications of this product must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications.

**Post-directed or hooded applications:** This product may be applied using precision post-directed or hooded sprayers to Roundup Ready® cotton through layby. At this stage, post-directed equipment should be used which directs the spray to the base of the cotton plants. Contact of the spray with cotton leaves must be avoided to the maximum extent possible. To minimize spray onto the leaves of the cotton plants, place nozzles in a low position directing a horizontal spray pattern under the cotton leaves to contact weeds in the row, and maintain low spray pressure (less than 30 PSI). For best results, make applications while weeds are small (less than 3 inches). Any single post-directed application must not exceed 24 fluid ounces per acre of this product. No more than two applications can be made from the fifth leaf through layby. Sequential in-crop applications of this product must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications.

**ATTENTION:** USE OF BUCCANEER 5 EXTRA IN ACCORDANCE WITH LABEL DIRECTIONS IS EXPECTED TO RESULT IN NORMAL GROWTH OF ROUNDUP READY® COTTON, HOWEVER, VARIOUS ENVIRONMENTAL CONDITIONS, AGRONOMIC PRACTICES AND OTHER FACTORS MAKE IT IMPOSSIBLE TO ELIMINATE ALL RISKS ASSOCIATED WITH THIS PRODUCT, EVEN WHEN APPLICATIONS ARE MADE IN CONFORMANCE WITH THE LABEL SPECIFICATIONS. IN SOME CASES, THESE FACTORS CAN RESULT IN BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS.

**Salvage Treatment:** This treatment may be used after the four leaf stage of development and must only be used where weeds threaten to cause the loss of the crop. 24 fluid ounces per acre may be applied either as an over-the-top application or as a post-directed treatment sprayed higher on the cotton plants and over the weeds.

**NOTE:** SALVAGE TREATMENTS WILL RESULT IN SIGNIFICANT BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS. MAKE NO MORE THAN ONE SALVAGE TREATMENT PER GROWING SEASON.

**Weeds controlled:** For specific rates of application and instructions for control of specific weed species, refer to the "ANNUAL" and "PERENNIAL" weed rate tables of this label. BUCCANEER 5 Extra applied at 24 fluid ounces per acre will

burndown or suppress the growth of the following perennial weeds and reduce crop competition: yellow and purple nutsedge, rhizome Johnsongrass, common bermudagrass, silverleaf nightshade, trumpet creeper, and redvine. Fall preharvest applications may be required for control of these perennial weeds.

Some weeds with multiple germination times or suppressed (stunted) weeds may require sequential applications of this product for control.

**Preharvest applications:** This product may be applied for preharvest annual and perennial weed control as a broadcast treatment to Roundup Ready® cotton after 20% boll crack. Allow a minimum of 7 days between final application and harvest of cotton or feeding of cotton forage or hay.

**NOTE:** BUCCANEER 5 Extra will not enhance the performance of harvest aids when applied to Roundup Ready® cotton. **DO NOT** apply BUCCANEER 5 Extra preharvest to crops grown for seed.

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## ROUNDUP READY® FLEX COTTON

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, post-emergence, preharvest

**ATTENTION:** Use of this product in accordance with label directions is expected to result in normal growth of Roundup Ready cotton; however, various environmental conditions, agronomic practices and other factors make it impossible to eliminate all risks associated with this product, even when applications are made in conformance with the label specifications. In some cases, these factors can result in boll loss, delayed maturity and/or yield loss.

### USE INSTRUCTIONS:

#### Maximum allowable yearly rates of this Product

- |   |                                    |
|---|------------------------------------|
| 1. Combined total per year for all applications                             | 6 quarts (192 fl. oz.) per acre    |
| 2. Total of all preplant, at-planting, preemergence applications            | 3.75 quarts (120 fl. oz.) per acre |
| 3. Total in-crop applications from ground cracking to 60 percent open bolls | 4.5 quarts (144 fl. oz.) per acre  |
| 4. Maximum allowed from 60 percent bolls open to 7 days prior to harvest    | 1.5 quarts (48 fl. oz.) per acre   |



**Preplant, preemergence or at-planting applications:** This product may be applied before, during or after planting Roundup Ready Flex cotton. Always plant into a weed free seedbed. In no-till and stale seedbed systems, always burn down existing weeds before cotton emerges. Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush & Trees rate tables in this label. See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.

**Post-emergence (Over-the-Top) applications:** When applied in accordance with this label, BUCANEER 5 EXTRA HERBICIDE will control labeled annual grasses and broadleaf weeds in Roundup Ready Flex cotton. To maximize yield potential spray cotton early to eliminate competing weeds. Many perennial weeds will be controlled or suppressed with one or more applications of this product. In-crop application rates above 1.5 pints (24 fl. oz.) per acre made alone or with the addition of other crop chemical products containing surfactant may cause a crop response including leaf speckling or leaf necrosis. Make an initial application of 1.5 pints (24 fl. oz.) per acre on 1 to 3 inch tall annual grass and broadleaf weeds. This product may be applied by ground application equipment at rates up to 2.25 pints (36 fl. oz.) per acre per application post-emergence to Roundup Ready Flex cotton. In addition to broadcast applications, post-directed equipment may be used to achieve weed coverage. Application after 10th leaf or 10th node may result in plant injury and yield loss. **NOTE:** For specific rates of application and instructions, refer to the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTION" in this label booklet.

**RESTRICTIONS:**

The maximum rate for any single in-crop application of this product is 2.25 pints (36 fl. oz.) per acre made using ground application equipment.

Except for pre-harvest use, do not exceed a maximum rate of 1.5 pints (24 fl. oz.) per acre of this product when making applications by air.

Between layby and 60 percent open bolls, the maximum combined total rate of this product that may be applied is 3 pints (48 fl. oz. per acre).

The maximum combined total of all applications made from crop emergence through 60 percent open bolls must not exceed 144 oz. (4.5 quarts) per acre.

**Pre-harvest applications:** This product may be applied for pre-harvest annual and perennial weed control as a broadcast

treatment to Roundup Ready Flex cotton after 60 percent boll crack. Up to 3 pints (48 fl. oz.) of this product may be applied using either aerial or ground spray equipment. **NOTE:** This product will not enhance the performance of harvest aids when applied to Roundup Ready Flex cotton.

**RESTRICTIONS:**

Allow a minimum of 7 days between application and harvest of cotton.

Do not apply this product to cotton grown for seed, as a reduction in germination or vigor may occur.

The use of additives, other than those listed on this label, for preharvest application to cotton is prohibited.

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**SOYBEANS WITH THE ROUNDUP READY® GENE**

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**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, postemergence, preharvest, post-harvest

**USE INSTRUCTIONS:** When applied as directed, this product will control labeled annual grasses and broadleaf weeds in Roundup Ready® soybeans. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more applications of this product.

**Maximum Allowable Application Rates of this Product**

- |   |                          |
|---|--------------------------|
| 1. Combined total per year for all applications                                 | 6 quarts per acre        |
| 2. Preplant, Preemergence applications  | 3.75 quarts per acre     |
| 3. Total in-crop applications from emergence from cracking throughout flowering | 2.25 quarts per acre     |
| 4. Maximum preharvest application rate  | 24 fluid ounces per acre |

**PRECAUTIONS:** The combined total application from crop emergence through harvest must not exceed 2.25 quarts per acre. The maximum rate for any single in crop application is 48 fluid ounces per acre. The maximum combined total of this product which can be applied during flowering is 48 fluid ounces per acre. Allow a minimum of 14 days between final application and harvest or feeding of soybean grain, forage or hay.

**NOTE:** The use of this product for in-crop applications over Roundup Ready® soybeans is not registered in California.



## Annual Weed Rate Tables

The following rates will provide control of labeled grasses and broadleaf weeds in conventional and no-till Roundup Ready® soybean production systems. Refer to the "ANNUAL WEED RATE TABLES" of this label for rates for specific annual weeds.

Tenkoz, Inc. will not warrant crop safety or weed control when Roundup Ready® soybeans are treated with herbicides not specified on this label. Because of the potential for: 1) crop injury, 2) poor weed control from antagonism, and/or 3) rotational crop restrictions, herbicides not specified on this label should not be used, whether applied preemergence or applied postemergence as a tank mixture with BUCCANEER 5 Extra herbicide.

This product may be used up to 48 fluid ounces per acre in any single in-crop application for control of annual weeds, where heavy weed densities exist.

## Midwest/Mid-Atlantic Instructions

**Narrow row or drilled soybeans:** A single in-crop application of this product will provide effective control of labeled weeds. Use an initial application of 24 fluid ounces per acre, on 4-8" weeds. Weeds will generally be 4-8" tall 3 to 5 weeks after planting. If the initial application is delayed and weeds are 8-18" tall, use 36 fluid ounces per acre.

Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this product at 18 to 24 fluid ounces per acre may be necessary to control late flushes of weeds.

**Wide row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. Use an initial application of 24 fluid ounces per acre, on 4-8" weeds. Weeds will generally be 4-8" tall 3 to 5 weeks after planting. If new flushes of weeds occur, they can be controlled by sequential applications of this product.

### Initial and Sequential (if needed) Applications

Weed Height (inches)	Rate of this Product (fl oz/A)
1-3	18
4-8	24
8-18	36

Giant ragweed: Apply 24 fluid ounces per acre when the weed is 8-12" tall to avoid the need for sequential application.

Black nightshade, Pennsylvania smartweed, ladythumb smartweed, velvetleaf and waterhemp: Apply 24 fluid ounces per acre to weeds 3-6" tall and 36 fluid ounces per acre when weeds are up to 12 inches tall. For Morningglory species apply 24 fluid ounces per acre when weeds are up to 4 inches tall, and 36 fluid ounces per acre when weeds are up to 6 inches tall.

Some weeds, such as black nightshade, woolly cupgrass, shattercane, wild proso millet, burcumber, and giant ragweed, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications should be made after some regrowth has occurred. Use a minimum of 18 fluid ounces of this product per acre for sequential applications.

## Southeast Instructions

**Narrow row, drilled, or wide-row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. Use an initial application of 24 fluid ounces per acre, on 3-6" weeds. Weeds will generally be 3-6" tall 2 to 3 weeks after planting.

### Initial Treatment

Weed Height (inches)	Rate of this Product (fl oz/A)
3-6	24
6-12	36

Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this product at 12 to 24 fluid ounces per acre may be necessary to control late flushes of weeds.

### Sequential Application (if needed)

Weed Height (inches)	Rate of this Product (fl oz/A)
2-3	12
3-6	18
6-12	24

Florida pusley, hemp sesbania and spurred anoda: Apply 24 fluid ounces per acre to weeds 2-4" for the initial application. Apply 24 fluid ounces per acre when these weeds are 3-6" tall if a sequential application is necessary.

Morningglory, black nightshade, groundcherry, and Pennsylvania smartweed: Apply 18 fl ounces per acre on 1-3" weeds, 24 fluid ounces per acre on 3-6" weeds, or 36 fluid ounces per acre on 6-12" weeds for the initial application.

Some weeds, such as black nightshade, broadleaf signalgrass, Texas panicum, burcumber, and sicklepod, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications of this product should be made after some regrowth has occurred. Use a minimum of 12 fluid ounces of this product per acre for sequential applications.

### **Delta/Mid-South Instructions**

**Narrow row, drilled, or wide row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. A sequential application will be required to control new flushes of weeds. Use an initial application of 24 fluid ounces per acre, on 2-4" weeds is recommended. Weeds will generally be 2-4" tall 2 to 3 weeks after planting.

#### **Initial Treatment**

Weed Height (inches)	Rate of this Product (fl oz/A)
2-4	24
5-12	36

#### **Sequential Application**

Weed Height (inches)	Rate of this Product (fl oz/A)
2-3	12
3-6	18
6-12	24

Hemp sesbania and spurred anoda: Apply a sequential treatment of 24 fl ounces per acre on 3-6" weeds if necessary.

Some weeds, such as black nightshade, broadleaf signalgrass, Texas panicum, burcumber, and sicklepod, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications should be made after some regrowth has occurred. Use a minimum of 12 fluid ounces of this product per acre for sequential applications.

### **Perennial Weeds Rate Instructions**

A 24 to 48 fluid ounces per acre rate (single or multiple applications) of this product will control or suppress perennial weeds such as: bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, horsenettle, marestail (horseweed), nutsedge, quackgrass, rhizome johnsongrass, redvine, trumpet creeper, swamp smartweed, and wirestem muhly.

Allow perennial weed species to achieve at least 6" of growth before spraying with BUCCANEER 5 Extra herbicide.

## **SUGAR BEETS WITH THE ROUNDUP READY® GENE**

**TYPES OF APPLICATIONS:** Preplant, at-planting, pre-emergence, post-emergence (in-crop)

#### **Maximum allowable yearly rates of this Product**

- |   |                                  |
|---|----------------------------------|
| 1. Combined total per year for all applications     | 6 quarts (192 fl. oz.) per acre  |
| 2. Total of all preplant, preemergence applications | 7.5 pints (120 fl. oz.) per acre |
| 3. Emergence to 8 leaf stage                        | 3.75 pints (60 fl. oz.) per acre |
| 4. Between 8 leaf stage and canopy closure          | 3 pints (48 fl. oz.) per acre    |

#### **Preplant, at-planting, and preemergence applications:**

This product may be applied before, during or after planting of Roundup Ready sugar beets. Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush & Trees rate tables in this label.

#### **RESTRICTIONS:**

Maximum quantity of this product that may be applied for all preplant, at-planting and preemergence applications combined is 3.75 quarts (120 fl. oz.) per acre per season.

**Post-emergence (in-crop) applications:** This product may be applied over the top of Roundup Ready sugar beets for control of annual grasses and broadleaf weeds from emergence to 30 days prior to harvest. To maximize yield potential, spray sugar beets early to eliminate competing weeds. Up to 4 sequential applications of this product may be made with at least 10 days between applications. This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.

## RESTRICTIONS:

The combined total application from crop emergence through harvest must not exceed 6.75 pints (108 fl. oz.) per acre.

The maximum rate for any single application between emergence to the 8 leaf stage is 2.25 pints (36 fl. oz.) per acre.

The maximum rate for any single application between the 8 leaf stage and canopy closure is 1.5 pints (24 fl. oz.) per acre.

Allow a minimum of 30 days between last application and sugar beet harvest.

## FARMSTEADS

**TYPES OF APPLICATIONS:** Nonselective weed control, trim-and-edge, chemical mowing, cut stumps, habitat management

### Nonselective weed control, Trim-and-edge

**USE INSTRUCTIONS:** This product may be used to control annual weeds, perennial weeds and woody brush which are found in any part of the farmstead, including building foundations, along and in fences, in dry ditches and canals, along ditchbanks, farm roads, shelterbelts, prior to landscape plantings and equipment storage areas.

This product may be tank mixed with the following products. Refer to these product labels for approved farmstead sites and application rates. For annual weeds, use 1.5 pints per acre of this product when weeds are less than 6 inches tall and 2.25 pints per acre when weeds are greater than 6 inches tall. For perennial weeds, apply 3 to 7.5 pints per acre in these tank mixes. For tank mixtures with these products through backpack sprayers, handguns or other high-volume spray-to-wet applications, see the "HAND-HELD AND HIGH VOLUME EQUIPMENT" section of this label for labeled rates.

Arsenal®	Plateau®
Banvel®	Princep® DF
Barricade® 65WG	Princep® Liquid
Diuron	Ronstar® 50 WP
Endurance®	Sahara®
Escort®	Simazine
Karmex® DF	Surflan®
Krovar® I DF	Telar®
Oust®	Vanquish®
Pendulum® 3.3 EC	2,4-D
Pendulum® WDG	

Dicamba mixtures may not be applied by air in California.

## Greenhouse/Shadehouse

This product may be used to control weeds in and around greenhouses and shadehouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

### Chemical mowing

**USE INSTRUCTIONS:** This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Apply this product at a rate of 4.5 to 6 fluid ounces per acre. Use 6 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass or quackgrass covers. Use 4.5 fluid ounces of this product per acre when treating Kentucky bluegrass. Apply treatments in 10 to 20 gallons of spray solution per acre. Chemical mowing applications may be made along farm ditches and other parts of farmsteads.

**PRECAUTIONS:** Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

### Cut Stumps

**TYPES OF APPLICATION:** Treating cut stumps in any noncrop site listed on this label.

**USE INSTRUCTIONS:** This product will control regrowth of cut stumps and resprouts of many types of woody brush and tree species, some of which are listed below. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or resprouts close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, applications must be made during periods of active growth and full leaf expansion.

Alder	Salt-cedar
Eucalyptus	Sweetgum
Madrone	Tan oak
Oak	Willow
Reed, giant	

**RESTRICTIONS:** DO NOT MAKE CUT STUMP APPLICATIONS WHEN THE ROOTS OF DESIRABLE WOODY BRUSH OR TREES MAY BE GRAFTED TO THE ROOTS OF THE CUT STUMP. INJURY RESULTING FROM ROOT GRAFTING MAY OCCUR IN ADJACENT WOODY BRUSH OR TREES.

### Habitat Management

**TYPES OF USES:** Habitat restoration and maintenance, wildlife food plots

## Habitat restoration and maintenance

**USE INSTRUCTIONS:** This product may be used to control exotic and other undesirable vegetation in habitat management areas. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broadspectrum vegetation control requirements in habitat management areas. Spot treatments can be made to selectively remove unwanted plants for habitat maintenance and enhancement. The tank mixtures listed in this section of the label may be used for habitat restoration and maintenance.

### Wildlife food plots

**USE INSTRUCTIONS:** This product may be used as a site preparation treatment to control annual and perennial weeds prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after application before tillage.

### Rangelands

**TYPES OF APPLICATIONS:** Postemergence

**USE INSTRUCTIONS:** This product will control or suppress many annual weeds growing in perennial cool and warm season grass rangelands.

Preventing viable seed production is key to the successful control and invasion of annual grassy weeds in rangelands. Follow-up applications in sequential years should eliminate most of the viable seeds.

Grazing of treated areas should be delayed to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

**RESTRICTIONS:** Do not use ammonium sulfate when spraying rangeland grasses with this product. Do not make more than one application per year.

### Postemergence

Apply 9-12 fluid ounces of this product to control or suppress many weeds, including downy brome, cheat grass, cereal rye and jointed goatgrass in rangelands. Apply when most mature brome plants are in early flower and before the plants including seedheads turn color. Allowing for secondary weed flushes to occur in the spring following rain events further depletes the seed reserve, and encourages perennial grass conversion on weedy sites. Fall applications are possible, and recommended where spring moisture is usually limited and fall germination allows for good weed growth.

Apply 12 fluid ounces when the medusahead has reached the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Fire may be useful in eliminating the thatch layer produced by slow decaying culms prior to application. Allow new growth to occur before spraying after a burn. Repeat applications in subsequent years may be necessary to eliminate the seedbank before reestablishing desirable perennial grasses in medusahead-dominated rangelands.

Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off.

## SILVICULTURAL SITES AND UTILITY RIGHTS-OF-WAY

**TYPES OF APPLICATIONS:** This product is labeled for the control or partial control of woody brush, trees and herbaceous weeds. This product is labeled for use in forestry and utility sites. This product is also labeled for use in preparing or establishing wildlife openings within these sites and maintaining logging roads, and for side trimming along utility rights-of-way.

In forestry, this product is labeled for use in site preparation prior to planting any tree species, including Christmas trees and silvicultural nursery sites.

In utilities, this product is labeled for use along electrical power, pipeline and telephone rights-of-way, and in other utility sites associated with these rights-of-way, such as substations.

### APPLICATION RATES AND TIMING:

Application	BUCCANEER 5 Extra	Spray Volume (Gal of Spray Solution/A)
<b>Broadcast:</b>		
Aerial	1.5 to 7.5 qts/A	5 to 30
Ground	1.5 to 7.5 qts/A	10 to 60
<b>Spray-to-Wet:</b>		
Handgun, Backpack, Mistblower	0.6% to 2% by volume	spray-to-wet
<b>Low Volume Directed Spray:</b>		
Handgun, Backpack, Mistblower	4% to 7.5% by volume	partial coverage*

\*For low volume directed spray applications, coverage must be uniform with at least 50 percent of the foliage contacted. Coverage of the top one-half of the plant is important for best results.

In forestry site preparation and utility rights-of-way applications, this product requires use with a nonionic surfactant. Use a nonionic surfactant with greater than 80 percent active ingredient and labeled for use with herbicides. Use of this product without surfactant will result in reduced performance. See the MIXING" section of this labeling for more information.

Mix 2 or more quarts of the nonionic surfactant per 100 gallons of spray solution (0.5 percent or more by spray volume). Use of surfactant concentrations greater than 1.5 percent by spray volume with handgun applications or 2.5 percent by spray volume with broadcast applications is not recommended.

Use higher rates of this product within the labeled range for control or partial control of woody brush, trees and hard-to-control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before fall color and leaf drop. Increase rates within the labeled range for control of perennial herbaceous weeds any time after emergence and before seedheads, flowers or berries appear.

Use the lower rates of this product within the labeled range for control of annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to the foliage of actively growing annual herbaceous weeds any time after emergence.

This product has no herbicidal or residual activity in the soil. Where repeat applications are necessary, do not exceed 8 quarts of this product per acre per year.

### Tank Mixtures

Tank mixtures of this product may be used to increase the spectrum of vegetation controlled. When tank mixing, read and carefully observe the label claims, cautionary statements and all information on the labels of both products used. Use according to the most restrictive precautionary statements for each product in the mixture. Any labeled rate of this product may be used in a tank mix. See tank mix product label for appropriate rates for broadcast, spray-to-wet, and low volume directed sprays.

**NOTE:** For forestry site preparation, make sure the tank-mix product is approved for use prior to planting the desired species. Observe planting interval restrictions. For side

trimming treatments in utility rights-of-way, tank mixtures with Arsenal® 2WSL are not recommended. For side trimming treatments, it is recommended that this product be used alone as recommended, or as a tank mixture with Garlon® 4.

Product	Use Sites
Arsenal® Applicators Concentrate**	Forestry site preparation
Chopper®	Forestry site preparation
Escort®**	Forestry site preparation
Oust®	Forestry site preparation, Utility sites
Garlon® 3A*, Garlon® 4	Forestry site preparation, Utility sites
Arsenal® 2WSL**	Utility sites

\*Ensure that Garlon® 3A is thoroughly mixed with water according to label directions before adding this product. Have spray mixture agitating at the time this product is added to avoid spray compatibility problems.

\*\*Arsenal® and Escort® are not registered in the state of California.

For control of herbaceous weeds, use the lower labeled tank mixture rates. For control of dense stands or tough-to-control woody brush and trees, use the higher labeled rates.

## FORESTRY CONIFER AND HARDWOOD RELEASE

### Directed Spray and Selective Equipment

This product may be applied as a directed spray or by using selective equipment in forestry conifer and hardwood sites, including Christmas tree plantations and silvicultural nurseries. Mix 2 to 6 quarts of a nonionic surfactant per 100 gallons of spray solution (0.5 to 1.5 percent by spray volume) for all spray applications. Use a surfactant with greater than 80 percent active ingredient.

In hardwood plantations, tank mixtures with Oust® may be used. In pine plantations, tank mixtures with Garlon® 4 or Arsenal® AC

may be used. Comply with all site restrictions, forestry species limitations and precautions on the tank mix product label.

Avoid contact of spray, drift, mist or drips with foliage, green bark or non-woody surface roots of desirable species.

See all sections in the "APPLICATION EQUIPMENT AND TECHNIQUES" portion of this labeling for specific equipment recommendations, precautions, and directions.

For spray-to-wet applications, use a 1.5 percent spray solution for the control of undesirable woody brush and trees. To control herbaceous weeds, use a 0.75 to 1.5 percent solution.

For low volume directed spray applications, use a 4 to 7.5 percent spray solution. Coverage must be uniform with at least 50 percent of the foliage contacted. Coverage of the top one-half of the unwanted vegetation is important.

For equipment calibrated for broadcast applications, use 1.5 to 7.5 quarts of this product per acre. Apply in 10 to 60 gallons of clean water per acre. Shielded application equipment may be used to avoid contact of the spray solution with desirable plants. Shields must be adjusted to prevent spray contact with the foliage or green bark of desirable vegetation.

Wiper application equipment may be used. See the "SELECTIVE EQUIPMENT" portion of this labeling for equipment and rate recommendations.

### Broadcast Spray

Except where specifically labeled below, use only where conifers have been established for more than one year.

Application must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in the spring.

Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied. Damage can be accentuated if applications are made when conifers are actively growing, or are under stress from drought, flood water, improper planting, insects, animal damage or diseases.

This product may require use with a surfactant. Follow the instructions under the "MIXING" portion of this labeling.

### For release of the following conifer species outside the Southeastern United States:

Douglas fir	Pines*
<i>Pseudotsuga menziesii</i>	<i>Pinus</i> spp.
Fir	Redwood, California**
<i>Abies</i> spp.	<i>Sequoia</i> spp.
Hemlock**	Spruce
<i>Tsuga</i> spp.	<i>Picea</i> spp.

\*Includes all species except loblolly pine, longleaf pine, shortleaf pine or slash pine.

\*\*Do not use a surfactant for release of hemlock species or California redwood. In mixed conifer stands, injury to these species may result if a surfactant is used.

Apply 0.75 to 1.5 quarts of this product per acre as a broadcast spray.

Note: For release of Douglas fir with this product or labeled tank mixtures of this product, Entry™ II or a nonionic surfactant labeled for over-the-top foliar sprays may be used. To avoid possible conifer injury, Entry™ II rates should not exceed 20 fluid ounces per acre at elevations above 1500 feet, or 10 fluid ounces per acre in the coastal range or at elevations below 1500 feet in Washington and Oregon. Nonionic surfactants may be used at 2 fluid ounces per acre at elevations above 1500 feet, or 1 fluid ounce per acre in the coastal range or at elevations below 1500 feet. Use of surfactant rates exceeding those listed above may result in unacceptable conifer injury and are not allowed. Ensure that the nonionic surfactant has been adequately tested for Douglas fir safety before use.

In Maine, up to 2.25 quarts per acre of this product or a tank mix with the labeled rate of Arsenal® Applicators Concentrate may be used for the control of difficult species.

To release Douglas fir, pine and spruce species at the end of the first growing season (except in California), apply 0.75 to 1.125 quarts of this product per acre. Ensure that the conifers are well hardened off.

Oust® Tank Mixtures – To release jack pine, white pine and white spruce, apply 0.75 to 1.5 quarts of this product per acre with the labeled rate of Oust®. Make applications to actively growing weeds as a broadcast spray over the top of established conifers. Applications at these rates must be made after formation of conifer resting buds in the late summer or fall.

Arsenal® Applicators Concentrate Tank Mixtures – This product may be tank mixed with Arsenal® Applicators Concentrate for release of Douglas fir. Use 0.75 to 1.125 quarts of this product per acre tank mixed with the labeled rate of Arsenal®. For release of balsam fir and red spruce, apply a mixture of 1.5 quarts of this product and the labeled rate of Arsenal® Applicators Concentrate per acre.

For release of the following conifer species in the Southeastern United States:

Eastern white pine	Shortleaf pine
<i>Pinus strobus</i>	<i>Pinus echinata</i>
Loblolly pine	Slash pine
<i>Pinus taeda</i>	<i>Pinus elliotii</i>
Longleaf pine	Virginia pine
<i>Pinus palustris</i>	<i>Pinus virginiana</i>

Apply 1.125 to 1.875 quarts of this product per acre as a broadcast spray during late summer or early fall after the conifers have hardened off. For applications at the end of the first growing season, use 0.75 quart per acre of this product alone or in a labeled tank mixture.

Arsenal® Applicators Concentrate Tank Mixtures – Apply 0.75 to 1.5 quarts of this product per acre with the labeled rate of Arsenal® Applicators Concentrate per acre as a broadcast spray for conifer release. Use only on conifer species that are labeled for over-the-top sprays for both products. Use the higher labeled rates for dense, tough-to-control woody brush and trees.

Read and carefully observe the label claims, cautionary statements and all information on the labels of each product used in these tank mixtures. Use according to the most restrictive precautionary statements for each product in the mixture.

### Herbaceous Release

When applied as directed, this product plus listed residual herbicides provides postemergence control of the annual weeds and control or suppression of the perennial weeds listed in this label, and residual control of the weeds listed in the residual herbicide label. Make applications to actively growing weeds as a broadcast spray over the top of labeled conifers.

Oust® Tank Mixtures – To release loblolly pines, apply 12 to 18 fluid ounces of this product per acre, plus the labeled rate of Oust®. To release slash pines, apply 9 to 12 fluid ounces of this product per acre, plus the labeled rate of Oust®.

Mix up to 3.2 fluid ounces per acre of Entry™ II with the labeled

rate of this product plus Oust®. Applications can be made over newly planted pines after the emergence of herbaceous weeds in the spring or early summer. Best results are obtained from applications made in May and June.

Weed control may be reduced if water volumes exceed 25 gallons per acre for these treatments.

**Atrazine Tank Mixtures** – To release Douglas fir, apply 0.75 quart of this product, plus the labeled rate of atrazine per acre. Apply only over Douglas fir that has been established for at least one full growing season. Apply in the early Spring, usually mid-March through early April. Injury will occur if applications are made after bud swell in the Spring. Do not add surfactant to this mix for this use.

Always read and follow the manufacturer's label directions for all herbicides and surfactants used.

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## WETLAND SITES

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This product may be used in and around water (aquatic areas) and wetlands found in forestry and in power, telephone and pipeline rights-of-way sites, including where these sites are adjacent to or surrounding domestic water supply reservoirs, supply streams, lakes and ponds. Read and observe the following before making applications in and around water.

Consult local public water control authorities before applying this product in and around public water.

Permits may be required to treat in such areas.

There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.

**Note:** Do not apply this product directly to water within ½ mile up-stream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within ½ mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within ½ mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. These aquatic applications may be made ONLY in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.

Do not spray open bodies of water where woody brush, trees and herbaceous weeds do not exist. The maximum

application rate of 3.75 quarts per acre must not be exceeded in a single over-water broadcast application except as follows, where any labeled rate may be applied:

- Stream crossings in utility rights-of-way.
- Where applications will result in less than 20 percent of the total water area being treated.

## **ANNUAL WEEDS RATE TABLES ALPHABETICALLY BY SPECIES**

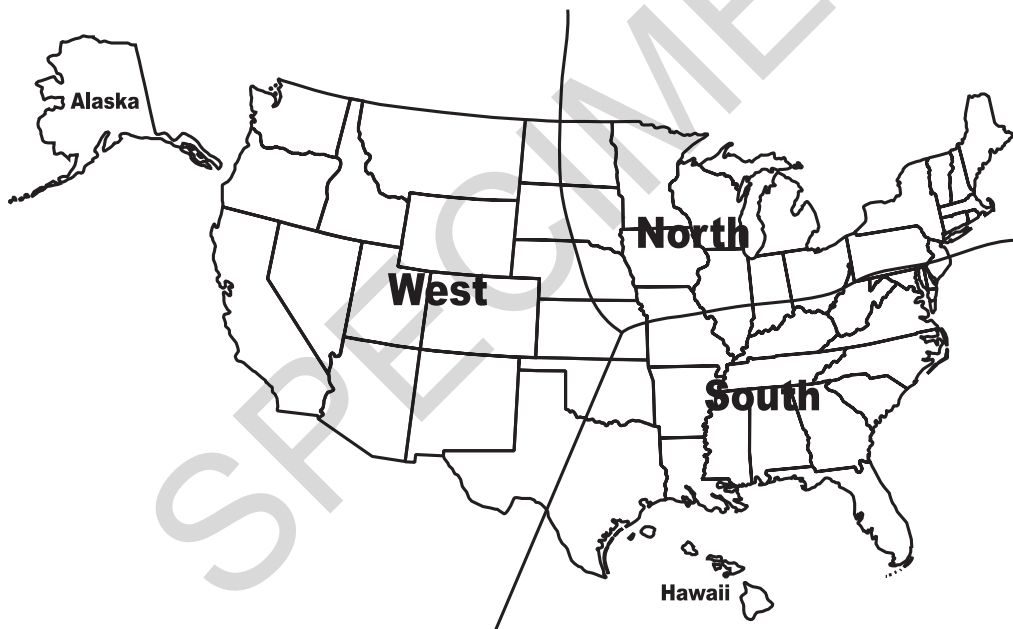
Water carrier volumes of 3 to 10 gallons per acre for ground applications and 3 to 5 gallons per acre for aerial applications are required.

Do not tank mix with soil residual herbicides when using these rates unless otherwise specified.

For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

For those rates less than 36 fluid ounces per acre, this product may be used up to 36 fluid ounces per acre where heavy weed densities exist.

Refer to this map for location of the regions listed in the annual weed tables below.





## ANNUAL WEEDS RATE TABLE, NORTH AND SOUTH REGIONS

		RATE OF THIS PRODUCT					
WEED SPECIES		(FLUID OUNCES PER ACRE)					
	REGION	9	12	18	24	30	36
		MAXIMUM HEIGHT/LENGTH					
Annoda, spurred		-	1"	2"	3"	5"	8"
Barley		-	18"	18"+	-	-	-
Barnyardgrass	South	-	3"	5"	7"	9"	12"
	North	-	-	6"	12"	-	-
Bassia, fivehook		-	-	-	6"	-	-
Bittercress		-	12"	20"	-	-	-
Bluegrass, annual		-	10"	-	-	-	-
Brome, downy		6"	-	-	-	-	-
Brome, Japanese		-	6"	-	24"	-	-
Browntop panicum		-	6"	8"	12"	-	24"
Burcucumber		-	-	6"	12"	-	-
Buttercup		-	12"	20"	-	-	-
Carolina foxtail		-	20"	-	-	-	-
Carolina geranium		-	-	-	4"	-	9"
Carpetweed		-	-	6"	12"	-	-
Cheat		-	6"	20"	-	-	-
Chervil		-	20"	-	-	-	-
Chickweed		-	12"	18"	-	-	-
Cocklebur		-	12"	18"	24"	-	-
Copperleaf, hophornbeam		-	1"	2"	3"	4"	6"
Copperleaf, Virginia		-	1"	2"	3"	4"	6"
Corn		-	12"	20"	-	-	-
Corn speedwell		-	12"	-	-	-	-
Crabgrass		-	12"	18"	-	-	-
Cutleaf evening primrose		-	-	-	3"	3"	6"
Dwarf dandelion		-	20"	-	-	-	-
Eastern mannagrass		-	8"	12"	-	-	-
Eclipta		-	4"	8"	12"	-	-
Fall panicum	South	-	4"	6"	8"	12"	24"
	North	-	6"	12"	18"	-	-
Falsedandelion		-	20"	-	-	-	-
Falseflax, smallseed		-	12"	-	-	-	-
Fiddleneck		-	-	-	6"	6"	12"
Field pennycress		-	6"	12"	-	-	-
Filaree		-	-	-	-	-	12"

		RATE OF THIS PRODUCT					
WEED SPECIES		(FLUID OUNCES PER ACRE)					
	REGION	9	12	18	24	30	36
		MAXIMUM HEIGHT/LENGTH					
Fleabane, annual		-	6"	20"	-	-	-
Fleabane, hairy ( <i>Conyza bonariensis</i> )		-	6"	-	-	-	-
Fleabane, rough		-	3"	6"	12"	-	-
Florida pusley		-	-	-	4"	4"	6"
Foxtail	South	-	8"	12"	20"	-	-
	North	18"	18"+	-	-	-	-
Goatgrass, jointed		-	6"	-	-	-	-
Goosegrass		-	3"	5"	8"	-	18"
Grain sorghum (milo)		-	6"	12"	20"	-	-
Groundsel, common		-	6"	-	-	-	-
Hemp sesbania		-	-	2"	4"	6"	8"
Henbit		-	-	-	6"	-	20"
Horseweed/Marestail ( <i>Conyza canadensis</i> )	South	-	-	12"	30"	-	-
	North	-	6"	12"	18"	-	-
Itchgrass		-	6"	12"	18"	-	-
Johnsongrass, seedling	South	-	-	18"	-	-	-
	North	-	12"	18"	-	-	-
Junglerice		-	3"	5"	7"	9"	12"
Knotweed		-	3"	8"	12"	-	20"
Kochia <sup>1</sup>		-	3 to 6"	12"	-	-	-
Lambsquarters		-	6"	8"	12"	-	20"
Little barley		-	20"	-	-	-	-
London rocket		-	6"	-	-	-	-
Mayweed		-	-	2"	6"	12"	18"
Morningglory ( <i>Pomoea spp.</i> )		-	-	2"	4"	-	6"
Mustard, blue		6"	-	-	-	-	-
Mustard, tansy		6"	12"	20"	-	-	-
Mustard, tumble		6"	-	-	-	-	-
Mustard, wild		6"	12"	18"	-	-	-
Nightshade, black		-	6"	12"	-	-	-
Nightshade, hairy		-	6"	12"	-	-	-
Oats		-	-	6"	20"	-	-
Pigweed		-	12"	18"	24"	-	-
Prickly lettuce		-	6"	12"	20"	-	-
Purslane		-	-	-	6"	6"	12"
Ragweed, common	South	-	4"	6"	8"	-	11"

		RATE OF THIS PRODUCT					
WEED SPECIES		(FLUID OUNCES PER ACRE)					
	REGION	9	12	18	24	30	36
		MAXIMUM HEIGHT/LENGTH					
Ragweed, common	North	-	6"	12"	18"	-	-
Ragweed, giant		-	-	4"	6"	-	11"
Red rice		-	-	-	4"	-	-
Russian thistle		-	-	-	6"	-	-
Rye	South	-	6"	20"	60"	-	-
	North	-	18"	18"+	-	-	-
Ryegrass		-	-	-	6"	-	7"+
Sandbur, field		12"	-	-	-	-	-
Shattercane		-	12"	18"	-	-	-
Shepherd's purse		-	6"	12"	-	-	-
Sicklepod		-	-	2"	4"	-	8"
Signalgrass, broadleaf		-	3"	5"	7"	9"	12"
Smartweed, ladysthumb		-	4"	6"	8"	-	12"
Smartweed, Pennsylvania		-	4"	6"	8"	-	12"
Sowthistle, annual		-	-	-	6"	-	12"
Spanishneedles		-	-	-	8"	-	18"
Speedwell, purslane		-	12"	-	-	-	-
Sprangletop		-	6"	12"	20"	-	-
Spurge, prostrate		-	6"	12"	20"	-	-
Spurge, spotted		-	6"	12"	20"	-	-
Spurry, umbrella		6"	-	-	-	-	-
Stinkgrass		12"	-	-	-	-	-
Sunflower		-	12"	18"	-	-	-
Teaweed/Prickly sida		-	1"	2"	3"	4"	6"
Texas panicum		-	6"	8"	12"	-	24"
Velvetleaf	South	-	2"	3"	4"	5"	8"
	North	-	3"	6"	12"	-	-
Virginia pepperweed		-	18"	-	-	-	-
Waterhemp		-	-	6"	12"	-	-
Wheat	South	-	6"	30"	-	-	-
	North	-	18"	18"+	-	-	-
Wheat (overwintered)		-	6"	18"	-	-	-
Wild oats		-	12"	-	-	-	-
Wild Proso Millet		-	-	6"	12"	12"	18"
Witchgrass		-	12"	-	-	-	-
Woolly cupgrass		-	6"	12"	-	-	-
Yellow rocket		-	-	12"	20"	-	-

<sup>1</sup>Do not treat kochia in the button stage.

# ANNUAL WEEDS RATE TABLE, WEST REGION

WEED SPECIES	RATE OF THIS PRODUCT				
	(FLUID OUNCES PER ACRE)				
	9	12	18	24	36
	MAXIMUM HEIGHT/LENGTH				
Barley	12"	-	-	-	-
Barnyardgrass	6"	-	-	-	-
Bluegrass, annual	6"	-	-	-	-
Bluegrass, bulbous	-	6"	-	-	-
Brome, downy <sup>1</sup>	6"	-	-	-	-
Buttercup	-	12"	-	-	-
Cheat	-	6"	-	-	-
Chickweed	-	6"	-	-	-
Cocklebur	-	12"	-	-	-
Corn	-	6"	-	-	-
Crabgrass	-	12"	-	-	-
Dwarf dandelion	-	12"	-	-	-
Fall panicum	-	12"	-	-	-
Falseflax, smallseed	-	12"	-	-	-
Field pennycress	-	6"	-	-	-
Filaree	-	-	-	-	12"
Fleabane, hairy ( <i>Conyza bonariensis</i> )	-	6"	-	-	-
Florida pusley	-	-	-	12"	-
Foxtail	6 fl. oz. for up to 12"				
Goatgrass, jointed	-	6"	-	-	-
Groundsel, common	-	6"	-	-	-
Henbit	-	6"	-	-	-
Horseweed/Marestail ( <i>Conyza canadensis</i> )	-	6"	-	-	-
Johnsongrass, seedling	-	12"	-	-	-
Lambsquarters	-	6"	-	-	-
London rocket	-	6"	-	-	-
Morningglory ( <i>Ipomoea spp.</i> )	-	2"	-	-	-
Mustard, blue	6"	-	-	-	-
Mustard, tansy	6"	-	-	-	-
Mustard, tumble	6"	-	-	-	-
Mustard, wild	6"	-	-	-	-
Pigweed	-	12"	-	-	-
Rye	12"	-	-	-	-

	RATE OF THIS PRODUCT				
WEED SPECIES	(FLUID OUNCES PER ACRE)				
	9	12	18	24	36
	MAXIMUM HEIGHT/LENGTH				
Ryegrass, Italian	-	6"	-	-	-
Sandbur, field	12"	-	-	-	-
Shattercane	12"	-	-	-	-
Shepherd's purse	-	6"	-	-	-
Sowthistle, annual	-	6"	-	-	-
Spurge, annual	-	6"	-	-	-
Stinkgrass	12"	-	-	-	-
Texas panicum	-	12"	-	-	-
Wheat	18"	-	-	-	-
Wild oats	-	12"	-	-	-
Witchgrass	-	12"	-	-	-

\*For control of Downy brome in no-till systems, use 12 fluid ounces per acre.

### Annual Weeds – 10 to 40 Gallons Per Acre in Water

Apply 1-½ pints to 2 ¼ pints of this product per acre. Use 1-½ pints per acre if weeds are less than 6 inches tall and 2 ¼ pints per acre if weeds are over 6 inches tall.

These rates will provide control of weeds listed in the annual weed control tables when water carrier volumes are 10 to 40 gallons per acre for ground applications.

### Annual Weeds – Tank Mixtures with 2,4-D or dicamba

9 to 12 fluid ounces of this product plus the labeled rate of dicamba or the labeled rate of 2,4-D per acre will control the following weeds with the maximum height or length indicated: 6" – prickly lettuce, maretail/horseweed (*Coryza canadensis*), morningglory (*Ipomoea spp.*), kochia (dicamba only); 12" – cocklebur, lambsquarters, pigweed, Russian thistle.

12 fluid ounces of this product plus the labeled rate of 2,4-D per acre will control the following weeds when they are a maximum height or length of 6 inches: common ragweed, giant ragweed, Pennsylvania smartweed, and velvetleaf.

9 fluid ounces of the product plus the labeled rate of dicamba

or the labeled rate of 2,4-D per acre will control foxtail up to 18".

Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if dicamba is applied within 45 days of planting.

DO NOT APPLY DICAMBA TANK MIXTURES  
BY AIR IN CALIFORNIA.

### PERENNIAL WEEDS RATE TABLE ALPHABETICALLY BY SPECIES

Apply to actively growing perennial weeds.

**NOTE:** If weeds have been mowed or tilled, do not treat until plants have resumed active growth and have reached the labeled stages.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed. Repeat treatments must be made prior to crop emergence.

Unless otherwise stated, allow 7 or more days after application before tillage.

Best results are obtained when soil moisture is adequate for active weed growth.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Alfalfa	1.5-3	3-10	1.5%	Make applications after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Applications should be followed with deep tillage at least 7 days after treatment, but before soil freeze-up.
Alligatorweed	6	3-20	1.25%	Partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain control.
Anise (fennel)	-	-	.75-1.5%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Bahiagrass	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early head stage.
Bentgrass	2.25	10-20	1.5%	For suppression in grass seed production areas. For ground applications only. Ensure entire crown area has resumed growth prior to a fall application. Bentgrass should have at least 3 inches of growth. Tillage prior to treatment should be avoided. Tillage 7 to 10 days after application is recommended for best results.
Bermudagrass	4.5-7.5	3-20	1.5%	For control, apply 7.5 pints of this product per acre. For partial control, apply 4.5 pints per acre. Treat when bermudagrass is actively growing and seedheads are present. Retreatment may be necessary to maintain control.
Bermudagrass, water (knotgrass)	1.5-2.25	5-10	1.5%	Apply 2.25 pints of this product in 5 to 10 gallons of water per acre. Apply when water bermudagrass is 12 to 18 inches in length. Allow 7 or more days before tilling, flushing or flooding the field. <b>Fall applications only:</b> Apply 1.5 pints of this product in 5 to 10 gallons of water per acre. Fallow fields should be tilled prior to application. Apply prior to frost on water bermudagrass that is 12 to 18 inches in length. This product is not registered in California for use on water bermudagrass.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Bindweed, field	.75-7.5	3-20	1.5%	<p>Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.</p> <p>For control, apply 6 to 7.5 pints of this product per acre west of the Mississippi River and 4.5 to 6 pints east of the Mississippi River. Apply when the weeds are at or beyond full bloom. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.</p> <p>Also for control, apply 3 pints of this product plus the labeled rate of dicamba in 10 to 20 gallons of water per acre. Do not apply by air.</p> <p>For suppression on irrigated agricultural land, apply 1.5 to 3 pints of this product plus the labeled rate of 2,4-D in 10 to 20 gallons of water per acre with ground equipment only.</p> <p>Applications should be made following harvest or in fall fallow ground when the bindweed is actively growing and the majority of runners are 12 inches or more in length. The use of at least one irrigation will promote active bindweed growth.</p> <p>For suppression, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre for ground applications and 3 to 5 gallons of water per acre for aerial applications. Apply by air in fallow and reduced tillage systems only. Delay applications until maximum emergence has occurred and when vines are between 6 to 18 inches in length.</p> <p><b>In California only</b>, apply 1.5 to 7.5 pints of this product per acre. Actual rate needed for suppression or control will vary within this range depending on local conditions. For suppression on irrigated land where annual tillage is performed, apply 1.5 pints of this product in 3 to 10 gallons of water per acre. Apply to bindweed that has reached a length of 12 inches or greater. Allow maximum weed emergence and runner growth. Allow 3 or more days after application before tillage.</p>
Bluegrass, Kentucky	1.5-3	3-40	1.5%	<p>Apply 3 pints of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.</p>

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Blueweed, Texas	4.5-7.5	3-40	1.5%	Apply 6 to 7.5 pints of this product per acre west of the Mississippi River and 4.5 to 6 pints per acre east of the Mississippi River. Apply when plants are at or beyond full bloom. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.
Brackenfern	4.5-6	3-40	.75-1.5%	Apply to fully expanded fronds which are at least 18 inches long.
Bromegrass, smooth	1.5-3	3-40	1.5%	Apply 3 pints of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.
Bursage, woolly-leaf	-	3-20	1.5%	For control, apply 3 pints of this product plus the labeled rate of dicamba per acre. For partial control, apply 1.5 pints of this product plus the labeled rate of dicamba per acre. Apply when plants are producing new active growth which has been initiated by moisture for at least 2 weeks and when plants are at or beyond flowering.
Canarygrass, reed	3-4.5	3-40	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Cattail	4.5-7.5	3-40	1.5%	Apply when most plants have reached the early head stage.
Clover; red, white	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early bud stage.
Cogongrass	4.5-7.5	10-40	1.5%	Apply when cogongrass is at least 18 inches tall in late summer or fall. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.
Dallisgrass	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early head stage.
Dandelion	4.5-7.5	3-40	1.5%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre.



Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Dock, curly	4.5-7.5	3-40	1.5%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre.
Dogbane, hemp	6	3-40	1.5%	Apply when most plants have reached the late bud to flower stage of growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to treatment. For best results, apply in late summer or fall. For suppression, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre for ground applications and 3 to 5 gallons of water per acre for aerial applications. Delay applications until maximum emergence of dogbane has occurred.
Fescue (except tall)	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early head stage.
Fescue, tall	1.5-4.5	3-40	1.5%	Apply 4.5 pints of this product per acre when most plants have reached boot-to-early seedhead stage of development. <b>Fall applications only:</b> Apply 1.5 pints of this product in 3 to 10 gallons of water per acre. Apply to fescue in the fall when plants have 6 to 12 inches of new growth. A sequential application of 12 fluid ounces per acre of this product will improve long-term control and control seedlings germinating after fall treatments or the following spring.
Guineagrass	4.5	3-40	.75%	Apply when most plants have reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment.
Horsenettle	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early bud stage.
Horseradish	6	3-40	1.5%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.
Iceplant	-	-	1.5%	Iceplant should be at or beyond the early bud stage of growth. Thorough coverage is necessary for best control.
Jerusalem artichoke	4.5-7.5	3-20	1.5%	Apply when most plants are in the early bud stage.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Johnsongrass	.75-4.5	3-40	.75%	In annual cropping systems apply 1.5 to 3 pints of this product per acre. Apply 1.5 pints of this product in 3 to 10 gallons of water per acre. Use 3 pints of this product when applying 10 to 40 gallons of water per acre. In noncrop, or areas where annual tillage (no-till) is not practiced, apply 3 to 4.5 pints of this product in 10 to 40 gallons of water per acre. For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Allow 7 or more days after application before tillage. Do not tank-mix with residual herbicides when using the 1-quart per acre rate. For burndown of Johnsongrass, apply 12 fluid ounces of this product in 3 to 10 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage. Spot treatment (partial control or suppression) – Apply a 3/4 percent solution of this product when Johnsongrass is 12 to 18 inches in height. Coverage must be uniform and complete.
Kikuyugrass	3-4.5	3-40	1.5%	Spray when most kikuyugrass is at least 8 inches in height (3 or 4-leaf stage of growth). Allow 3 or more days after application before tillage.
Knapweed	6	3-40	1.5%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.
Lantana	-	-	.75-1.0%	Apply at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.
Lespedeza	4.5-7.5	3-20	1.5%	Apply when most plants have reached the early bud stage.
Milkweed, common	4.5	3-40	1.5%	Apply when most plants have reached the late bud to flower stage of growth.
Muhly, wirestem	1.5-3	3-40	1.5%	Use 1.5 pints of this product in 3 to 10 gallons of water per acre. Use 3 pints of this product when applying 10 to 40 gallons of water per acre or in pasture, sod, or noncrop areas. Spray when the wirestem muhly is 8 inches or more in height. Do not till between harvest and fall applications or in the fall or spring prior to spring applications. Allow 3 or more days after application before tillage.
Mullein, common	4.5-7.5	3-20	1.5%	Apply when most plants are in the early bud stage.
Napiergrass	4.5-7.5	3-20	1.5%	Apply when most plants are in the early head stage.
Nightshade, silverleaf	3	3-10	1.5%	Applications should be made when at least 60 percent of the plants have berries. Fall treatments must be applied before a killing frost.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Nutsedge; purple, yellow	.75-4.5	3-40	.75-1.5%	<p>Apply 4.5 pints of this product per acre or apply a ¾ to 1 ½ percent solution for control of nutsedge plants and immature nutlets attached to treated plants. Treat when plants are in flower or when new nutlets can be found at rhizome tips. Nutlets which have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control of ungerminated tubers.</p> <p>Sequential applications: 1.5 to 3 pints of this product in 3 to 10 gallons of water per acre will also provide control. Make applications when a majority of the plants are in the 3 to 5-leaf stage (less than 6 inches tall). Repeat this application, as necessary, when newly emerging plants reach the 3 to 5-leaf stage. Subsequent applications will be necessary for long-term control.</p> <p>For partial control of existing plants, apply 12 fluid ounces to 3 pints of this product in 3 to 40 gallons of water per acre. Treat when plants have 3 to 5 leaves and most are less than 6 inches tall. Repeat treatments will be required to control subsequent emerging plants or regrowth of existing plants.</p>
Orchardgrass	1.5-3	3-40	1.5%	<p>Apply 3 pints of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.</p> <p>Orchardgrass sods going to no-till corn: Apply 1.5 to 2.25 pints of this product in 3 to 10 gallons of water per acre. Apply to orchardgrass that is a minimum of 12 inches tall for spring applications and 6 inches tall for fall applications. Allow at least 3 days following application before planting. A sequential application of atrazine will be necessary for optimum results.</p>
Pampasgrass	-	-	1.5%	Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.
Paragrass	4.5-7.5	3-20	1.5%	Apply when most plants are in the early head stage.
Phragmites	4.5-7.5	10-40	.75-1.5%	For partial control. For best results, treat during late summer or fall months or when plants are actively growing and in full bloom. Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Poison hemlock	-	-	.75-1.5%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Pokeweed, common	1.5	3-40	1.5%	Apply to actively growing plants up to 24 inches tall.
Quackgrass	1.5-4.5	3-40	1.5%	In annual cropping systems, or in pastures and sods followed by deep tillage: Apply 1.5 pints of this product in 3 to 10 gallons of water per acre. For 10 to 40 gallons of water per acre, apply 3 pints of this product. Do not tank mix with residual herbicides when using the 1.5 pint rate. Spray when quackgrass is 6 to 8 inches in height. Do not till between harvest and fall applications or in fall or spring prior to spring application. Allow 3 or more days after application before tillage. In pastures or sods, use a moldboard plow for best results. In pastures, sods or noncrop areas where deep tillage does not follow application: Apply 3 to 4.5 pints of this product in 10 to 40 gallons of water per acre when the quackgrass is greater than 8 inches tall.
Redvine	1.25-3	5-10	1.5%	For suppression, apply 18 fluid ounces of this product per acre at each of two applications 7 to 14 days apart or a single application of 3 pints per acre. Apply labeled rates in 5 to 10 gallons of water per acre. Apply in late September or early October to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Reed, giant	-	-	1.5%	Best results are obtained when applications are made in late summer to fall.
Ryegrass, perennial	1.5-4.5	3-40	.75%	In annual cropping systems apply 1.5 to 3 pints of this product per acre. Apply 1.5 pints of this product in 3 to 10 gallons of water per acre. Use 3 pints of this product when applying 10 to 40 gallons of water per acre. In noncrop, or areas where annual tillage (no-till) is not practiced, apply 3 to 4.5 pints of this product in 10 to 40 gallons water per acre. For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Do not tank-mix with residual herbicides when using the 1.5 pint per acre rate.
Smartweed, swamp	4.5-7.5	3-40	1.5%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Sowthistle, perennial	3-4.5	3-40	1.5%	Apply when most plants are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product. Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage.
Spurge, leafy	-	3-10	1.5%	For suppression, apply 12 fluid ounces of this product plus the labeled rate of 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall. If mowing has occurred prior to treatment, apply when most of the plants are 12 inches tall.
Starthistle, yellow	3	10-40	1.5%	Best results are obtained when applications are made during the rosette, bolting and early flower stages.
Sweet potato, wild	-	-	1.5%	Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.
Thistle, artichoke	-	-	1.5%	Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.
Thistle, Canada	3-4.5	3-40	1.5%	Apply when most plants are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product. Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage. For suppression, apply 1.5 pints of this product, or 12 fluid ounces of this product plus the labeled rate of 2,4-D, in 3 to 10 gallons of water per acre in the late summer or fall after harvest, mowing or tillage. Allow rosette regrowth to a minimum of 6 inches in diameter before treating. Applications can be made as long as leaves are still green and plants are actively growing at the time of application. Allow 3 or more days after application before tillage.
Timothy	3-4.5	3-40	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Torpedograss	6-7.5	3-40	1.5%	For partial control. Apply when most plants are at or beyond the seedhead stage of growth. Repeat applications will be required to maintain control. Fall treatments must be applied before frost.
Trumpetcreeper	3	5-10	1.5%	Partial control. Apply in late September or October, to plants which are at least 18 inches tall and have been growing 45-60 days since the last tillage operation. Make applications at least 1 week before a killing frost.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Vaseygrass	4.5-7.5	3-20	1.5%	Apply when most plants are in the early head stage.
Velvetgrass	4.5-7.5	3-20	1.5%	Apply when most plants are in the early head stage.
Wheatgrass, western	3-4.5	3-40	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.

## WOODY BRUSH AND TREES RATE TABLE ALPHABETICALLY BY SPECIES

Apply this product after full leaf expansion, unless otherwise directed. Use the higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when applications are made in the spring to early summer when brush species are at high moisture content and are flowering.

Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow 7 or more days after application before tillage, mowing or removal. Repeat treatments may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Alder	4.5-6	3-40	.75-1.5%	For control
Ash	3-7.5	3-40	.75-1.5%	Partial control
Aspen, quaking	3-4.5	3-40	.75-1.5%	For control
Bearmat (Bearclover)	3-7.5	3-40	.75-1.5%	Partial control
Beech	3-7.5	3-40	.75-1.5%	Partial control
Birch	3	3-40	.75%	For control
Blackberry	4.5-6	10-40	.75-1.5%	For control. Make applications after plants have reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. Applications may also be made after leaf drop and until a killing frost or as long as stems are green. After berries have set or dropped in late fall, blackberry can be controlled by applying a ¼ percent solution of this product. For control of blackberries after leaf drop and until a killing frost or as long as stems are green, apply 4.5 to 6 pints of this product in 10 to 40 gallons of water per acre.
Blackgum	3-7.5	3-40	.75-1.5%	For control
Bracken	3-7.5	3-40	.75-1.5%	For control

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Broom; French, Scotch	-	-	1.5%	For control
Buckwheat, California	-	-	.75-1.5%	For partial control. Thorough coverage of foliage is necessary for best results.
Cascara	3-7.5	3-40	.75-1.5%	Partial control
Catsclaw	-	-	.75-1.5%	Partial control
Ceanothus	3-7.5	3-40	.75-1.5%	Partial control
Chamise	-	-	.75%	For control. Thorough coverage of foliage is necessary for best results.
Cherry; bitter, black, pin	3-4.5	3-40	.75-1.5%	For control
Coyote brush	-	-	1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Dogwood	3-7.5	3-40	.75-1.5%	Partial control
Elderberry	3	3-40	.75%	For control
Elm	3-7.5	3-40	.75-1.5%	Partial control
Eucalyptus	-	-	1.5%	For control of eucalyptus resprouts, apply when resprouts are 6 to 12 feet tall. Ensure complete coverage. Avoid application to drought-stressed plants.
Florida holly (Brazilian Peppertree)	3-7.5	3-40	.75-1.5%	Partial control
Gorse	3-7.5	3-40	.75-1.5%	Partial control
Hasardia	-	-	.75-1.5%	Partial control. Thorough coverage of foliage is necessary for best results.
Hawthorn	3-4.5	3-40	.75-1.5%	For control
Hazel	3	3-40	.75%	For control
Hickory	3-7.5	3-40	.75-1.5%	Partial control
Honeysuckle	3-6	3-40	.75-1.5%	For control
Hornbeam, American	3-7.5	3-40	.75-1.5%	Partial control
Kudzu	6	3-40	1.5%	For control. Repeat applications may be required to maintain control.
Locust, black	3-6	3-40	.75-1.5%	Partial control
Madrone resprouts	-	-	1.5%	Partial control. Apply to resprouts that are 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.
Manzanita	3-7.5	3-40	.75-1.5%	Partial control
Maple, red	3-6	3-40	.75-1.5%	For control, apply a 0.75 to 1.5 percent solution when at least 50 percent of the new leaves are fully developed. For partial control, apply 3 to 6 pints of this product per acre.

Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Maple, sugar	-	-	.75-1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Monkey flower	-	-	.75-1.5%	Partial control. Thorough coverage of foliage is necessary for best results.
Oak; black, white	3-6	3-40	.75-1.5%	Partial control
Oak, post	4.5-6	3-40	.75-1.5%	For control
Oak; northern, pin	-	-	.75-1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Oak, southern, red	3-4.5	3-40	.75-1.5%	For control
Persimmon	3-7.5	3-40	.75-1.5%	Partial control
Pine	3-7.5	3-40	.75-1.5%	For control
Poison ivy/ Poison oak	6-7.5	3-40	1.5%	For control. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.
Poplar, yellow	3-7.5	3-40	.75-1.5%	Partial control
Redbud, eastern	3-7.5	3-40	.75-1.5%	For control
Rose, multiflora	3	3-40	.75%	For control. Treatments should be made prior to leaf deterioration by leaf-eating insects.
Russian olive	3-7.5	3-40	.75-1.5%	Partial control
Sage, black	-	-	.75%	For control. Thorough coverage of foliage is necessary for best results.
Sage, white	3-7.5	3-40	.75-1.5%	Partial control
Sage brush, California	-	-	.75%	For control. Thorough coverage of foliage is necessary for best results.
Salmonberry	3	3-40	.75%	For control
Salt-cedar	3-7.5	3-40	.75-1.5%	For control
Sassafras	3-7.5	3-40	.75-1.5%	Partial control
Sourwood	3-7.5	3-40	.75-1.5%	Partial control
Sumac; poison, smooth, winged	3-6	3-40	.75-1.5%	Partial control
Sweetgum	3-4.5	3-40	.75-1.5%	For control
Swordfern	3-7.5	3-40	.75-1.5%	Partial control
Tallowtree, Chinese	-	-	.75%	For control. Thorough coverage of foliage is necessary for best results.
Tan oak sprouts	-	-	1.5%	For partial control. Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.
Thimbleberry	3	3-40	.75%	For control



Weed Species	Rate of this Product (PT/A)	Water Volume	Hand-Held % Solution	Comments
Tobacco, tree	-	-	.75-1.5%	Partial control
Trumpet creeper	3-4.5	3-40	.75-1.5%	For control
Vine maple	3-7.5	3-40	.75-1.5%	Partial control
Virginia creeper	3-7.5	3-40	.75-1.5%	For control
Waxmyrtle, southern	3-7.5	3-40	.75-1.5%	Partial control
Willow	4.5	3-40	.75%	For control

## CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of TENKOZ, INC. or the Seller. All such risks shall be assumed by the Buyer.

TENKOZ, INC. and the Seller warrant that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. To the extent consistent with applicable law, TENKOZ, INC. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS.

To the extent consistent with applicable law, BUYER'S EXCLUSIVE REMEDY AND THE EXCLUSIVE LIABILITY OF TENKOZ, INC. AND THE SELLER FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. When Buyer suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), Buyer must promptly notify Seller in writing of any claims to be eligible to receive either remedy stated above. To the extent consistent with applicable law, IN NO CASE SHALL TENKOZ, INC. OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. TENKOZ, INC. and the Seller offer this product, and the Buyer accepts it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of TENKOZ, INC.

No employee or agent of TENKOZ, INC. or the Seller is authorized to vary or exceed the terms of this Warranty in any other manner.

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EPA approval date: 09-20-2018

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**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****COMPANY ADDRESS:**

Tenkoz, Inc.  
Alpharetta, GA 30005

**EMERGENCY TELEPHONE NUMBERS:**

(800) 424-9300 (CHEMTREC, transportation and spills)

**PRODUCT NAME** : BUCCANEER 5 Extra Herbicide  
**CHEMICAL NAME** : Isopropylamine Salt of Glyphosate  
**PRODUCT USE** : Herbicide  
**PRODUCT CODE** : EPA Reg. No 55467-15

**SECTION 2 - HAZARDS IDENTIFICATION SUMMARY**

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

Clear yellow viscous liquid with slight amine like odor

**HEALTH HAZARDS:** Warning. Mildly irritating to eyes.

**PHYSICAL HAZARDS:** May react with metals such as galvanized or mild steel to produce hydrogen gas which could form a highly combustible gas mixture.

**ENVIRONMENTAL HAZARDS:** Moderately toxic to fish and aquatic plants. May be toxic to non-target plants.

**SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS**

COMPONENT	PERCENTAGE	CAS NUMBER
Isopropylamine Salt of Glyphosate	53.8 %	38641-94-0
Inert Ingredients	46.2 %	n/a

**SECTION 4 - FIRST AID MEASURES**

First Aid responders should use protective equipment in Section 8 if there is a potential for exposure to product.

**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 center or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control center 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 center 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 center 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 mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**SECTION 5 - FIRE FIGHTING MEASURES**

## National Fire Protection Rating (NFPA)

HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**FLASHPOINT:** Will not flash.

**EXTINGUISHING MEDIA:** Use water spray, foam or dry chemical.

**FIRE AND EXPLOSION HAZARD:** May decompose in fire due releasing irritating or toxic gases including carbon monoxide, nitrogen oxides, phosphorous oxides.

**FIRE FIGHTING INSTRUCTIONS:** Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Foam or dry chemical extinguishing systems recommended to prevent environmental damage due to water run off.

**FIRE FIGHTING EQUIPMENT:** Self-contained breathing apparatus with full facepiece. Full firefighting turn-out gear (Bunker gear).

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**IN CASE OF SPILLS OR LEAKS:** Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**SMALL SPILL:** Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.

**LARGE SPILL:** Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, and scrape up for disposal. After removal, scrub the area with detergent and water and neutralize with dilute alkaline solutions of soda ash, or lime.

Do not allow washwaters to enter waterways.

**SECTION 7 - HANDLING AND STORAGE**

**KEEP OUT OF REACH OF CHILDREN!**

**HANDLING:** Use only in a well-ventilated area. Wear appropriate safety equipment when handling.

**STORAGE:** Store in original container with lid tightly closed. Keep away from food, feed and drinking water. Store above 15° F (-10 C). If crystallized, warm to 80-90 F and redissolve by shaking container before using product.

**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

**EXPOSURE LIMITS (8 hour TWA, ppm):**

COMPONENT	OSHA PEL	ACIGH TLV
Isopropylamine salt of glyphosate	Not Est.	Not Est.

**ENGINEERING CONTROLS:** Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**PERSONAL PROTECTIVE EQUIPMENT:**

EYE PROTECTION - Safety goggles when mixing, loading or cleaning equipment is recommended.

CLOTHING – Long-sleeved shirt and long pants, Shoes plus socks,

GLOVES – Waterproof gloves when mixing, loading or cleaning equipment is recommended.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

## **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear yellow viscous liquid
<b>Odor:</b>	Slight amine like
<b>pH:</b>	4.62
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	Will not flash
<b>Evaporation Rate:</b>	No data
<b>Flammability:</b>	Not flammable
<b>Flammability Limits:</b>	Not applicable
<b>Vapor Pressure:</b>	25 mmHg a 24 C
<b>Vapor Density:</b>	Not applicable
<b>Density:</b>	1.15 – 1.21 g/ml (9.60 – 10.10 lb/gal)*
<b>Solubility:</b>	Emulsifies
<b>Partition Coefficient:</b>	log Pow - < 3.2 @ 25 C (glyphosate)
<b>Auto-Ignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	Not available

\*Listed density is an approximate value and does not necessarily represent that of a specific batch.

## **SECTION 10 - STABILITY AND REACTIVITY**

**PRODUCT REACTIVITY:** May react with metals such as galvanized or mild steel to produce hydrogen gas which could form a highly combustible gas mixture.

**CHEMICAL STABILITY:** Stable, however may decompose if heated.

**HAZARDOUS REACTION/POLYMERIZATION:** Product will not undergo polymerization.

**CONDITIONS TO AVOID:** Avoid temperatures above (115°F, 46°C) and below 25°F (-5°C).

**INCOMPATIBLE MATERIALS:** Strong oxidizers or bases, mild and galvanized steel.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide, Nitrogen oxides, phosphorous oxides due to thermal breakdown.

## **SECTION 11 - TOXICOLOGICAL INFORMATION**

### **ACUTE TOXICITY:**

Oral LD <sub>50</sub> (rat)	- >5,000 mg/Kg
Dermal LD <sub>50</sub> (rat)	- >5,000 mg/Kg
Inhalation LC <sub>50</sub> (rat)	- >4.2 mg/L
Eye Irritation (rabbit)	- Slight irritant
Skin Irritation (rabbit)	- Non-irritant
Sensitization (guinea pig)	- Non-sensitizer

### **CARCINOGEN STATUS:**

OSHA	- Not listed
NTP	- Not listed
IARC	- Not listed

**DEVELOPMENTAL TOXICITY/TERATOGENICITY:** Effects on offspring only noted with maternal toxicity

**MUTAGENICITY:** No evidence of mutagenic effects during *in vivo* or *in vitro* studies.

## **SECTION 12 - ECOLOGICAL INFORMATION**

**ENVIRONMENTAL SUMMARY:** Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

### **ENVIRONMENTAL FATE:** (Glyphosate acid)

Bioaccumulation -	Whole fish BCF <1
Soil Half-life -	2 - 174 days (adsorbs strongly to soil)
Water Half-life -	<7 days

### **FISH TOXICITY:** (Glyphosate acid)

96 hour LC <sub>50</sub> , Rainbow trout –	> 1,000 mg/L
96 hour LC <sub>50</sub> , Bluegill –	> 1,000 mg/L

### **AVIAN TOXICITY:** (Glyphosate acid)

Dietary LC <sub>50</sub> , Bobwhite quail –	>4,600 mg/Kg
Dietary LC <sub>50</sub> , Mallard duck –	>4,600 mg/Kg

### **BEE TOXICITY:** (Glyphosate acid)

Contact LD <sub>50</sub> -	>100 ug/bee
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## **SECTION 13 - DISPOSAL CONSIDERATIONS**

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures. Emptied container retains vapor and product residue.

**CONTAINER:** Non-refillable containers: Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Refillable containers: Refill this container with glyphosate only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler.



If the container cannot be refilled, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### **SECTION 14 - TRANSPORT INFORMATION**

**SHIPPING DESCRIPTION:** Not regulated by DOT  
**DOT HAZARD CLASS:** N/A  
**UN NUMBER:** N/A  
**DOT PACKING GROUP:** III

### **SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:** Not listed

**SARA TITLE III STATUS:**  
311/312 Hazard Categories – Immediate Health  
313 Toxic Chemicals – None known

**CALIFORNIA PROP 65:** Not listed

**TSCA INVENTORY:** All components listed on US EPA TSCA Inventory

### **SECTION 16 - OTHER INFORMATION**

HMIS HAZARD RATINGS	HEALTH	1
	FLAMMABILITY	0
	PHYSICAL HAZARD	1
	4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**DISCLAIMER:** The information presented herein is based on available data from reliable sources and is correct to the best of Tenkoz' knowledge. Tenkoz makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling.

It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

**REVISED DATE:** August, 2014  
**REFERENCE:** Revised for GHS compliance

# ALLIGARE

## IMAZAPYR 4 SL

### SPECIMEN LABEL

For the control of undesirable vegetation in forestry sites, aquatic sites, grass pasture, rangeland, fence rows, maintenance of wildlife openings, and industrial noncropland areas including railroad, utility, pipeline rights-of-way, utility plant sites, petroleum tank farms, pumping installations, storage areas, building perimeters, irrigation and non-irrigation ditchbanks, roads, transmission lines, and industrial bare ground areas.

In the State of New York, aquatic uses are not allowed.

#### ACTIVE INGREDIENT:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)\* . . . . . 52.6%

**OTHER INGREDIENTS** . . . . . 47.4%

**TOTAL** . . . . . 100.0%

\*Equivalent to 42.9% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 4 pounds acid per gallon.

EPA Reg. No. 81927-24 EPA Est. No. 37429-GA-001<sup>BT</sup>; 37429-GA-002<sup>BO</sup>; 81927-AL-001<sup>PM</sup>  
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN CAUTION!/PRECAUCION!

**PRECAUCION AL USUARIO:** Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID	
<b>If swallowed:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• <b>DO NOT</b> induce vomiting unless told to do so by the poison control center or doctor.</li><li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li></ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies involving this product, call 1-800-424-9300.	

Manufactured for: Alligare, LLC  
13 N. 8th Street • Opelika, AL 36801

#### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION!** Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing and wash before reuse.

#### Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistant category selection chart.

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves for all mixers and loaders, plus applicators using handheld equipment

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

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

#### User Safety Recommendations:

- Users should wash hands with plenty of soap and water before eating, drinking, chewing gum, using tobacco or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This product is toxic to plants. Drift and run-off may be hazardous to plants in water adjacent to treated areas. Do not apply to water except as specified on this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. Do not treat more than one-half the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatments along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate. See Directions for Use for additional precautions and requirements.

#### PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of **Alligare Imazapyr 4 SL** should be mixed, stored and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

**DO NOT** mix, store or apply **Alligare Imazapyr 4 SL** or spray solutions of **Alligare Imazapyr 4 SL** in unlined steel (except stainless steel) containers or spray tanks.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Alligare Imazapyr 4 SL** should be used only in accordance with directions on the booklet label. Keep containers closed to avoid spills and contamination.

**Alligare Imazapyr 4 SL** may be applied using helicopters, ground operated sprayers, low-volume hand-operated spray equipment such as back-pack and pump-up sprayers, and tree injection equipment.

Observe all cautions and limitations in the labels of products used in combination with **Alligare Imazapyr 4 SL**.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. The requirements in this box apply to use on trees being grown for sale or other commercial use, or for commercial seed production, or for production of timber or wood products, or for research purposes.

**DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of **48 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material
- Protective eyewear

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter treated areas until sprays have dried.

#### IMPORTANT

**DO NOT** use on food or feed crops. **DO NOT** use on Christmas trees. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in **APPLICATION TO WATERS USED FOR IRRIGATION** section of this label. Keep from contact with fertilizers, insecticides, fungicides, and seeds to prevent unintentional exposure of desirable vegetation to this product. **DO NOT** apply or drain or flush equipment on or near sensitive desirable plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** apply to lawns. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants. Clean application equipment after using this product by thoroughly flushing with water.

# IMAZAPYR 4 SL

# Specimen Label

## RESISTANCE

When herbicides with the same mode of action are used repeatedly over several years to control the same weed species in the same application site, naturally occurring resistant weed biotypes may survive a correctly applied herbicide treatment, propagate and become dominant in that site. These resistant weed biotypes may not be adequately controlled. Using herbicides with different modes of action within these sites can aid in delaying the proliferation and possible dominance of herbicide resistant weed biotypes. It is advisable that each user of this product check with the local extension service for a current list of resistant weed biotypes.

## PRODUCT INFORMATION

**Alligare Imazapyr 4 SL** is an aqueous solution intended to be mixed in water and surfactants(s) and applied as a post-emergent spray for control of most annual and perennial grasses, broadleaf weeds, vines, brambles, hardwood brush, trees for forestry site preparation and release of conifers from woody and herbaceous competition. This product may be used for selective woody and herbaceous weed control in natural regeneration of certain conifers (see pine release). This product may also be mixed in water and used for stump and cut-stem treatment for control of unwanted woody vegetation. This product can be applied along forest roads to control undesirable vegetation. This product can be used for the control of undesirable vegetation along non-irrigation ditchbanks and for the establishment and maintenance of wildlife openings. See use directions for stump and cut stem treatments and herbaceous weed control and use directions for spot treatment of undesirable hardwood vegetation.

This product may be applied on forestry sites that contain areas of temporary surface water caused by the collection of water between planting beds, in equipment ruts, or in other depressions created by forest management activities, except in the states of California and New York. It is permissible to treat drainage ditches, intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains, and transitional areas between upland and lowland sites when no water is present, except in the states of California and New York. Only the edge of drainage ditches can be treated for drainage ditches that contain water. It is also permissible to treat marshes, swamps, and bogs after water has receded, as well as seasonally dry flood deltas, except in the states of California and New York.

When applied postemergence to weeds, **Alligare Imazapyr 4 SL** will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species. **Alligare Imazapyr 4 SL** will provide residual control of labeled weeds which germinate in the treated areas. Postemergence application with a surfactant is the method of choice in most situations, particularly for perennial weeds. For maximum affect, weeds should be growing vigorously at postemergence application and the spray solution should include a surfactant. **Alligare Imazapyr 4 SL** solutions may be broadcast by using ground or aerial equipment, or may be applied as a spot treatment by using low-volume techniques. In addition, **Alligare Imazapyr 4 SL** may be used for stump and cut stem treatments.

**Alligare Imazapyr 4 SL** controls vegetation by absorption through foliage and roots, from which it is translocated rapidly throughout the plant, where it accumulates in rapidly-growing meristematic tissue. Treated plants stop growing soon after spray treatment. Chlorosis (yellowing of plant tissue) first appears in the newest leaves and necrosis spreads from this point. In perennials, **Alligare Imazapyr 4 SL** is translocated into and kills the roots and underground storage tissues to prevent most regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species for several weeks after application and may take months for various woody plants, brush and trees.

## PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of this product from treated soil. Injury or loss of desirable plants may result if this product is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where this product has been applied generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, **DO NOT** use the vegetative matter as mulch or compost on or around desirable species.

Untreated trees can occasionally be affected by root uptake of this product through movement into the top soil. Injury or loss of desirable trees or other plants may result if this product is applied on or near desirable trees or other plants, on areas where their roots extend or in locations where the treated soil may be washed or moved into contact with their roots.

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. 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.

Spray drift from applying this product may damage sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. **DO NOT** apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY AND TEMPERATURE INVERSIONS**).

### Controlling Droplet Size:

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

- Pressure – **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles – use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- 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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. **DO NOT** use nozzles producing a mist droplet spray.

**Application Height:** Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

**Wind:** Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Wind Erosion:** Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

**Aerial Application Methods and Equipment:** Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

### Aerial Applications:

1. Applicators are required to use a coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet; Applicators are required to use a very coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet; Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
2. Applicators are required to use upwind swath displacement.
3. The boom length must not exceed 60% of the wingspan or 90% of the rotor blade diameter to reduce spray drift.
4. Applications with wind speed less than 3 mph and with wind speeds greater than 10 mph are prohibited.
5. Applications into temperature inversions are prohibited.

**Ground Application (Broadcast):** Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

### Ground Boom Applications:

1. Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.
2. Applications with wind speeds greater than 10 mph are prohibited.
3. Applications into temperature inversions are prohibited.

The use of treated waters on irrigated crops within 120 days is prohibited.

## ADJUVANTS

Postemergence applications of this product may require the addition of a spray adjuvant for optimum herbicide performance. Only use spray adjuvants that are labeled for the specific use sites. When using for conifer release treatments, please refer to the conifer release section of this label. The addition of a Chemical Producers and Distributors Association (CPDA) certified adjuvant may increase control. A CPDA certified drift control agent may also be used.

**Nonionic Surfactants:** Use a nonionic surfactant at the rate of 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 90% surfactant in the formulated product (alcohols, fatty

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acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

**Methylated Seed Soils or Vegetable Oil Concentrates:** Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in product deposition and uptake by plants under moisture or temperature stress.

**Silicone Based Surfactants:** See manufacturer's label for specific rates instructions. Silicone-based surfactants may reduce the surface tension of the spray droplet, allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

**Invert emulsions:** This product can be applied as an invert emulsion. Consult the invert chemical label for proper mixing directions.

**Fertilizer/Surfactant Blends:** Nitrogen based liquid fertilizers such as 28%N, 32%N, 10-34-0 or ammonium sulfate, may be added at the rate of 2 to 3 pints per acre in combination with the specified rate of nonionic surfactant, methylated seed oil or vegetable/seed oil concentrate. The use of fertilizers in a tank mix without a nonionic surfactant, methylated seed oil or vegetable/seed oil concentrate is not recommended.

**Other:** An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

## WEEDS CONTROLLED

**Alligare Imazapyr 4 SL** provides postemergence control and some residual control of the following target weed species. The degree of control is both species and rate dependent. Use **Alligare Imazapyr 4 SL** only in accordance with the directions on this label.

### GRASSES:

The species of annual and perennial grasses controlled by **Alligare Imazapyr 4 SL** include the following:

Annual bluegrass (*Poa annua*)  
Bahigrass (*Paspalum notatum*)  
Barnyardgrass (*Echinochloa crus-galli*)  
Beardgrass (*Andropogon* spp.)  
Bermudagrass (*Cynodon dactylon*)<sup>1</sup>  
Big bluestem (*Andropogon gerardii*)  
Broadleaf signalgrass (*Brachiaria platyphylla*)  
Canada bluegrass (*Poa compressa*)  
Cattail (*Typha* spp.)  
Cheat (*Bromus secalinus*)  
Cogongrass (*Imperata cylindrica*)<sup>2</sup>  
Crabgrass (*Digitaria* spp.)  
Crowfootgrass (*Dactyloctenium aegyptium*)  
Dallisgrass (*Paspalum dilatatum*)  
Downy brome (*Bromus tectorum*)  
Fall panicum (*Panicum dichotomiflorum*)  
Feathertop (*Pennisetum villosum*)  
Fescue (*Festuca* spp.)  
Foxtail (*Setaria* spp.)  
Giant reed (*Arundo donax*)  
Goosegrass (*Eleusine indica*)  
Guineagrass (*Panicum maximum*)  
Italian ryegrass (*Lolium multiflorum*)  
Itchgrass (*Rottboellia exaltata*)  
Johnsongrass (*Sorghum halepense*)<sup>1</sup>  
Junglerice (*Echinochloa colonum*)  
Kentucky bluegrass (*Poa pratensis*)  
Lovegrass (*Eragrostis* spp.)<sup>1</sup>  
Orchardgrass (*Dactylis glomerata*)  
*Panicum* spp.  
Paragrass (*Brachiaria mutica*)  
Phragmites (*Phragmites australis*)  
Prairie cordgrass (*Spartina pectinata*)  
Prairie threeawn (*Aristida oligantha*)  
Quackgrass (*Agropyron repens*)  
Reed canarygrass (*Phalaris arundinacea*)  
Saltgrass (*Distichlis stricta*)  
Sand dropseed (*Sporobolus cryptandrus*)  
Sandsbur (*Cenchrus* spp.)  
Smooth brome (*Bromus inermis*)  
Sprangletop (*Leptochloa* spp.)  
Timothy (*Phleum pratense*)  
Torpedograss (*Panicum repens*)  
Vaseygrass (*Paspalum urvillei*)  
Wild barley (*Hordeum* spp.)  
Wild oats (*Avena fatua*)  
Wirestem muhly (*Muhlenbergia frondosa*)  
Witchgrass (*Panicum capillare*)  
Woolly cupgrass (*Eriochloa villosa*)

<sup>1</sup> Use higher labeled rates.

<sup>2</sup> Use minimum of 24 oz. per acre.

### BROADLEAF WEEDS:

The species of annual and perennial broadleaf weeds controlled by **Alligare Imazapyr 4 SL** include the following:

Arrowwood (*Pluchea sericea*)  
Broom snakeweed (*Gutierrezia sarothrae*)

Bull thistle (*Cirsium vulgare*)  
Burclover (*Medicago* spp.)  
Burdock (*Arctium* spp.)  
Camphorweed (*Heterotheca subaxillaris*)  
Canada thistle (*Cirsium arvense*)  
Carolina geranium (*Geranium carolinianum*)  
Carpetweed (*Mullugo verticillata*)  
Chickweed, mouseear (*Cerastium vulgatum*)  
Clover (*Trifolium* spp.)  
Cocklebur (*Xanthium strumarium*)  
Common chickweed (*Stellaria media*)  
Common ragweed (*Ambrosia artemisiifolia*)  
Cudweed (*Gnaphalium* spp.)  
Dandelion (*Taraxacum officinale*)  
Desert camelthorn (*Alhagi pseudalhagi*)  
Diffuse knapweed (*Centaurea diffusa*)  
Dock (*Rumex* spp.)  
Dogfennel (*Eupatorium capillifolium*)  
Fiddleneck (*Amsinckia intermedia*)  
Filaree (*Erodium* spp.)  
Fleabane (*Erigeron* spp.)  
Giant ragweed (*Ambrosia trifida*)  
Goldenrod (*Solidago* spp.)  
Gray rabbitbrush (*Chrysothamnus nauseosus*)  
Henbit (*Lamium alexicaule*)  
Hoary vervain (*Verbena stricta*)  
Horseweed (*Conyza canadensis*)  
Indian mustard (*Brassica juncea*)  
Japanese bamboo/knotweed (*Polygonum cuspidatum*)  
Knotweed, prostrate (*Polygonum aviculare*)  
Kochia (*Kochia scoparia*)  
Lambsquarters (*Chenopodium album*)  
Little mallow (*Malva parviflora*)  
Milkweed (*Asclepias* spp.)  
Miners lettuce (*Montia perfoliata*)  
Mullein (*Verbascum* spp.)  
Nettleleaf goosefoot (*Chenopodium murale*)  
Oxeye daisy (*Chrysanthemum leucanthemum*)  
Pepperweed (*Lepidium* spp.)  
Pigweed (*Amaranthus* spp.)  
Plantain (*Plantago* spp.)  
Pokeweed (*Phytolacca americana*)  
Primrose (*Oenothera kunthiana*)  
Puncturevine (*Tribulus terrestris*)  
Purple loosestrife (*Lythrum salicaria*)  
Purslane (*Portulaca* spp.)  
Pusley, Florida (*Richardia scabra*)  
Rocket, London (*Sisymbrium irio*)  
Rush skeletonweed (*Chondrilla juncea*)  
Russian knapweed (*Centaurea repens*)  
Russian thistle (*Salsola kali*)  
Saltbush (*Atriplex* spp.)  
Shepherd's purse (*Capsella bursa-pastoris*)  
Silverleaf nightshade (*Solanum elaeagnifolium*)  
Smartweed (*Polygonum* spp.)  
Sorrell (*Rumex* spp.)  
Sowthistle (*Sonchus* spp.)  
Spurge, annual (*Euphorbia* spp.)  
Stinging nettle (*Urtica dioica*)  
Sunflower (*Helianthus* spp.)  
Sweet clover (*Melilotus* spp.)  
Tansymustard (*Descurainia pinnata*)  
Texas thistle (*Cirsium texanum*)  
Velvetleaf (*Abutilon theophrasti*)  
Western ragweed (*Ambrosia psilostachya*)  
Wild carrot (*Daucus carota*)  
Wild lettuce (*Lactuca* spp.)  
Wild parsnip (*Pastinaca sativa*)  
Wild turnip (*Brassica campestris*)  
Woollyleaf bursage (*Ambrosia grayi*)  
Yellow starthistle (*Centaurea solstitialis*)  
Yellow woodsorrel (*Oxalis stricta*)

### VINES AND BRAMBLES:

The species of vines and brambles controlled by **Alligare Imazapyr 4 SL** include the following:

Field bindweed (*Convolvulus arvensis*)  
Hedge bindweed (*Calystegia sepium*)  
Honeysuckle (*Lonicera* spp.)<sup>1</sup>  
Morningglory (*Ipomoea* spp.)  
Poison ivy (*Rhus radicans*)  
Redvine (*Brunnichia cirrhosa*)  
Trumpet creeper (*Campsis radicans*)  
Virginia creeper (*Parthenocissus quinquefolia*)  
Wild buckwheat (*Polygonum convolvulus*)  
Wild grape (*Vitis* spp.)  
Wild rose (*Rosa* spp.)<sup>1</sup>  
Including: Multiflora rose (*Rosa multiflora*)  
Macartney rose (*Rosa bracteata*)

<sup>1</sup> Use higher labeled rates.



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## WOODY BRUSH AND TREES:

The species of woody brush and trees controlled by **Alligare Imazapyr 4 SL** include the following:

Alder (*Alnus* spp.)  
American beech (*Fagus grandifolia*)  
Ash (*Fraxinus* spp.)<sup>1</sup>  
Aspen (*Populus* spp.)  
Autumn olive (*Elaeagnus umbellata*)  
Bald cypress (*Taxodium distichum*)  
Bigleaf Maple (*Acer macrophyllum*)  
Birch (*Betula* spp.)<sup>1</sup>  
Black oak (*Quercus kelloggii*)  
Blackgum (*Nyssa sylvatica*)<sup>2</sup>  
Boxelder (*Acer negundo*)  
Brazilian peppertree (*Schinus terebinthifolius*)  
Ceanothus (*Ceanothus* spp.)  
Cherry (*Prunus* spp.)<sup>2</sup>  
Chinaberry (*Melia azedarach*)  
Chinese tallow-tree (*Sapium sebiferum*)  
Chinquapin (*Castanopsis chrysophylla*)  
Cottonwood (*Populus trichocarpa* and *Populus deltoides*)  
Cypress (*Taxodium* spp.)  
Dogwood (*Cornus* spp.)<sup>1</sup>  
Eucalyptus (*Eucalyptus* spp.)  
Hawthorn (*Crataegus* spp.)  
Hickory (*Carya* spp.)<sup>1</sup>  
Huckleberry (*Gaylussacia* spp.)  
*Lyonia* spp.  
Including: Fetterbush (*Lyonia lucida*)  
Staggerbush (*Lyonia mariana*)  
Madrone (*Arbutus menziesii*)  
Maple (*Acer* spp.)  
Melaleuca (*Melaleuca quinquenervia*)  
Mulberry (*Morus* spp.)<sup>1,3</sup>  
Oak (*Quercus* spp.)<sup>1</sup>  
Persimmon (*Diospyros virginiana*)<sup>2</sup>  
Poison oak (*Rhus diversiloba*)  
Popcorn-tree (*Sapium sebiferum*)  
Poplar (*Populus* spp.)  
Privet (*Ligustrum vulgare*)  
Red Alder (*Alnus rubra*)  
Red Maple (*Acer rubrum*)  
Saltcedar (*Tamarix pentandra*)  
Sassafras (*Sassafras albidum*)  
Sourwood (*Oxydendrum arboreum*)<sup>2</sup>  
Sumac (*Rhus* spp.)  
Sweetgum (*Liquidambar styraciflua*)  
Sycamore (*Platanus occidentalis*)  
Tanoak (*Lithocarpus densiflorus*)<sup>1</sup>  
Titi (*Cyrilla racemiflora*)<sup>2</sup>  
Tree of heaven (*Ailanthus altissima*)  
Vaccinium spp.  
Including: Blueberry (*Vaccinium* spp.)  
Sparkleberry (*Vaccinium arboreum*)  
Willow (*Salix* spp.)  
Yellow poplar (*Liriodendron tulipifera*)<sup>1</sup>

<sup>1</sup> Use higher labeled rates.

<sup>2</sup> Best control with applications prior to formation of fall leaf color.

<sup>3</sup> The degree of control may be species dependent.

<sup>4</sup> For Water oak (*Quercus nigra*), Laurel oak (*Q. laurifolia*), Willow oak (*Q. phellos*) and Live oak (*Q. virginiana*) use higher labeled rates.

<sup>5</sup> Suppression only.

## MIXING AND APPLICATION INSTRUCTIONS

### HELICOPTER EQUIPMENT:

Thoroughly mix the specified amount of **Alligare Imazapyr 4 SL** in 5 to 30 gallons of water per acre and apply uniformly with properly calibrated helicopter equipment. Use a nonionic surfactant to improve weed control. A drift control agent may be used at its specified label rate. An anti-foam agent may be added, if needed. Exercise all precautions to minimize or eliminate spray drift. Avoid applications during windy or gusty conditions. Use of a Microfoil™ boom, Thru-Valve™ boom, raindrop nozzles, controlled droplet booms and nozzle configurations is recommended. Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

**IMPORTANT: DO NOT** make applications by fixed wing aircraft.

Thoroughly clean mixing and application equipment by thoroughly flushing with water immediately after using this product. Prolonged exposure of uncoated/unpainted steel (except stainless steel) surfaces to this product may result in corrosion and failure of the exposed part. Maintaining painted surfaces may prevent corrosion.

### GROUND EQUIPMENT:

Thoroughly mix and apply the specified amount of **Alligare Imazapyr 4 SL** in 5 to 100 gallons of water per acre. Use a nonionic surfactant to enhance weed control. A drift control agent and an anti-foam agent may also be added at the specified label rates, if needed. If desired, a spray pattern indicator may be used at the specified label rate. To minimize spray drift, select proper nozzles to avoid spraying a fine mist, use pressures less than 50 psi and **DO NOT** spray under gusty or windy conditions (also refer to **SPRAY DRIFT MANAGEMENT** section). Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

For best results, apply the spray solution to uniformly cover the foliage of the undesirable vegetation to be controlled.

Clean mixing and application equipment immediately after using this product by thoroughly flushing with water.

## FOLIAR APPLICATIONS

### Low Volume Foliar:

For low volume, select proper nozzles to avoid over-application. Moisten, but do not drench target vegetation causing spray solution to run off. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant.

### DIRECTED FOLIAR OR SPOT SPRAY EQUIPMENT:

For directed or spot spray applications with helicopter, ground equipment or low-volume hand-operated spray equipment, thoroughly mix 1.0 to 5.0% **Alligare Imazapyr 4 SL** by volume (v/v) in water with at least 1/4% nonionic surfactant by volume, according to the table below.

## MIXING GUIDE FOR ALLIGARE IMAZAPYR 4 SL

SOLUTION VOLUME	Alligare Imazapyr 4 SL CONCENTRATION (%)			NONIONIC SURFACTANT
	1.0	2.5	5.0	
1 gallon	1-1/3 oz.	3-1/3 oz.	6-2/3 oz.	1/3 oz.
5 gallons	6-2/3 oz.	1 pint	2 pints	1-2/3 oz.
10 gallons	13-1/3 oz.	2 pints	4 pints	3-1/3 oz.
25 gallons	2 pints	5 pints	10 pints	8 oz.
100 gallons	1 gal.	2.5 gal.	5 gal.	2 pints

2 tablespoons = 1 fluid ounce

For optimum performance and efficacy, apply spray to uniformly cover the target vegetation foliage. Direct spray to avoid contacting desirable conifers. Avoid direct application to desired plant species as injury may occur.

**IMPORTANT: DO NOT** over apply to cause run-off from treated foliage. **DO NOT** exceed specified dosage rate per acre.

### CUT STUBBLE:

This product can be applied within 2 weeks after mechanical mowing or cutting of brush. To suppress or control resprouting, uniformly apply a spray solution of this product at the rate of 1 to 2 pints per acre to the cut area. This product may be tank-mixed with picloram, or equivalent labeled product for this use to aid in control or suppression of brush. The addition of 5% (v/v) or more of a penetrating agent can aid in uptake through the bark or exposed roots.

Cut stubble applications are made to the soil and cut brush stumps. This type of application may increase ground cover injury. However, vegetation will recover. Making applications of this product directly to the soil can increase potential root uptake causing injury or death of desirable trees.

Efficacy can be increased and root uptake by desirable vegetation can be decreased if the brush is allowed to regrow and the foliage is treated. See the Brush Control section of this label.

## STUMP AND CUT STEM TREATMENTS

**Alligare Imazapyr 4 SL** will control undesirable woody vegetation in forest management when applied as a water solution to the cambium area of freshly-cut stump surfaces or to cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Tree injection and cut stem treatments are most effective in late summer and early fall. **DO NOT** over-apply to cause run-off or puddling of spray solution.

### MIXING:

Mix **Alligare Imazapyr 4 SL** as either a concentrate or dilute solution for stump and cut stem treatments. Apply dilute solutions to the surface of the stump or to cuts on the stem of the target woody vegetation. Apply concentrate solutions to cuts on the stem. Use of the concentrate solutions permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application directions below to determine proper application techniques for each type of solution.

To prepare a dilute solution, mix 4 to 6 fluid ounces of **Alligare Imazapyr 4 SL** with one gallon of water. Except in the state of California, if temperatures are such that freezing of the spray mixture may occur, antifreeze (ethylene glycol) may be added according to manufacturer's label to prevent freezing. The use of a surfactant or penetrating agent may improve herbicide uptake through partially callused cambium tissue.

To prepare a concentrated solution, use undiluted **Alligare Imazapyr 4 SL** product or mix up to 75% water, by volume.

### APPLICATION WITH DILUTE SOLUTIONS:

**For cut stump treatments:** Spray or brush the solution onto the cambium area of the freshly cut stump surface. Thoroughly wet the entire cambium area (the wood next to the bark of the stump).

**For tree injection treatments:** Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

**For frill or girdle treatments:** Use a hatchet, machete or similar implement to make cuts through the bark around the tree at intervals no more than two inches between cut edges. Spray or brush **Alligare Imazapyr 4 SL** solution into each cut until thoroughly wet.

### APPLICATION WITH CONCENTRATED SOLUTIONS:

**For tree injection treatments:** Using standard injection equipment, apply 1 milliliter of solu-

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tion at each injection site. Make at least one injection cut for every three inches of Diameter at Breast Height (DBH) on the target tree. For example, a three inch DBH tree will receive 1 injection cut while a six inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site, place the injection cuts at approximately equal intervals around the tree.

**For hack and squirt treatments:** Use a hatchet, machete or similar implement to make cuts at a downward angle completely through the bark and cambium at approximately equal intervals around the tree. Make at least one cut for every 3 inches of DBH on the target tree as described above, using a squirt bottle, syringe, or similar device apply about 1 milliliter of concentrate solution into each cut, ensuring that the solution does not run out of the cut.

**NOTE:** Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

## SITE PREPARATION TREATMENTS

**Alligare Imazapyr 4 SL** will control labeled grass and broadleaf weeds, vines, brambles, woody brush and trees on forest sites when applied before replanting the following conifer crop species:

Crop Species	Rate (fl oz./A)
Loblolly Pine ( <i>Pinus taeda</i> )	24 – 40
Loblolly X Pitch Hybrid	24 – 40
Longleaf Pine ( <i>Pinus palustris</i> )	24 – 40
Shortleaf Pine ( <i>Pinus echinata</i> )	24 – 40
Virginia Pine ( <i>Pinus virginiana</i> )	24 – 40
Slash Pine ( <i>Pinus elliotii</i> )	20 – 32
Douglas-Fir ( <i>Pseudotsuga menziesii</i> )	12 – 24
Coastal Redwood ( <i>Sequoia sempervirens</i> )	12 – 24
Western Hemlock ( <i>Tsuga heterophylla</i> )	12 – 24
California Red Fir ( <i>Abies magnifica</i> )	12 – 20
California White Fir ( <i>Abies concolor</i> )	12 – 20
Jack Pine ( <i>Pinus banksiana</i> )	12 – 16
Lodgepole Pine ( <i>Pinus contorta</i> )	12 – 16
Pitch Pine ( <i>Pinus rigida</i> )	12 – 16
Ponderosa Pine ( <i>Pinus ponderosa</i> )	12 – 16
Sugar Pine ( <i>Pinus lambertiana</i> )	12 – 16
White Pine ( <i>Pinus strobus</i> )	12 – 16
Black Spruce ( <i>Picea mariana</i> )	12 – 16
Red Spruce ( <i>Picea rubens</i> )	12 – 16
White Spruce ( <i>Picea glauca</i> )	12 – 16

Apply the specified rate of **Alligare Imazapyr 4 SL** per acre as a broadcast foliar spray for long-term control of labeled woody plants and residual control of herbaceous annual and perennial weeds. Within 4 to 6 weeks of treatment, herbaceous weeds will be controlled and may provide fuel to facilitate a site preparation burn for controlling conifers or other species tolerant to the herbicide.

For helicopter applications, apply the specified rate of **Alligare Imazapyr 4 SL** per acre in 5 to 30 gallons total spray solution. For mechanical ground sprays and backpack applications, apply the specified rate of **Alligare Imazapyr 4 SL** per acre in 5 to 100 gallons total spray solution. Use at least 1/2% percent by volume nonionic surfactant. Use the higher label rates of **Alligare Imazapyr 4 SL** and higher spray volumes to control especially dense, multi-layered canopies of hardwood stands or difficult to control species.

Tank mixes may be necessary to control conifers and other species that are tolerant to **Alligare Imazapyr 4 SL**. Observe all precautions and restrictions on the tank mix partner label. Always follow the most restrictive label. NOTE that some other products labeled for forest site preparation may kill plants such as legumes and blackberry that are desirable for wildlife habitat.

Where quick initial brown out (deadening of foliage) is desired for burning, apply a tank mixture of 16 to 32 fluid oz. **Alligare Imazapyr 4 SL** plus 16 to 64 fluid oz. Accord® or 16 to 48 fluid oz. Garlon 4™ per acre. To control seedling pines, apply 16 to 32 fluid oz. **Alligare Imazapyr 4 SL** plus 3 to 4 quarts Accord®. For site preparation, rates less than 24 oz. **Alligare Imazapyr 4 SL** will provide suppression of hardwood brush and trees; however, some resprouting may occur.

**DO NOT** plant seedlings of Black Spruce (*Picea mariana*) or White Spruce (*Picea glauca*) on sites that have been broadcast treated with **Alligare Imazapyr 4 SL** or into the treated zone of spot or banded applications for at least three months after treatment or injury may occur.

## HERBACEOUS WEED CONTROL

Use **Alligare Imazapyr 4 SL** for selective weed control in the following conifers:

Crop Species	Rate (fl. oz./A)
Loblolly Pine ( <i>Pinus taeda</i> )	6 - 10
Loblolly X Pitch Hybrid	6 - 10
Virginia Pine ( <i>Pinus virginiana</i> )	6 - 10
Longleaf Pine ( <i>Pinus palustris</i> ) <sup>1</sup>	4 - 6
Shortleaf Pine ( <i>Pinus echinata</i> ) <sup>1</sup>	4 - 6
Slash Pine ( <i>Pinus elliotii</i> ) <sup>1</sup>	4 - 6
Douglas-Fir ( <i>Pseudotsuga menziesii</i> ) <sup>1</sup>	4 - 6

<sup>1</sup> Use of surfactant is not recommended.

**Alligare Imazapyr 4 SL** may be broadcast, banded over tree rows or directed for release of young conifers from herbaceous weeds. To diminish the possibility of conifer injury, **DO NOT** apply **Alligare Imazapyr 4 SL** when conifers are under stress from drought, diseases, animal

or winter injury, planting shock or other stresses that may reduce conifer vigor. Broadcast applications may be made by helicopter, ground or backpack sprayer. For best results, apply **Alligare Imazapyr 4 SL** to newly emerged weeds. Use the higher labeled rates for hard-to-control weeds. Where herbaceous weeds have over-topped conifer seedlings, add a nonionic surfactant at up to 1/4% of the spray solution volume to improve weed control (except for Slash Pine, Longleaf Pine, and Douglas-fir). Conifers in the treated area may exhibit minor growth inhibition, especially when treatments are applied during periods of active conifer growth.

**Alligare Imazapyr 4 SL** may also be applied by backpack or hand-held sprayers to control herbaceous weeds around individual conifer seedlings. Mix 0.4 to 0.6 fluid oz. **Alligare Imazapyr 4 SL** and 0.2 fluid oz. nonionic surfactant per gallon of water. Direct the spray to the weeds and minimize spray contact with conifer seedlings to avoid seedling damage. **DO NOT** exceed the maximum labeled rates listed above.

**Alligare Imazapyr 4 SL** can also be tank mixed with a sulfometuron-methyl product to broaden the weed control spectrum. For loblolly pine only, apply 4 to 6 fluid oz. **Alligare Imazapyr 4 SL** plus a sulfometuron-methyl product at the specified label rate per acre. Application of **Alligare Imazapyr 4 SL** plus Oust® to other conifer species, however, may cause growth suppression.

## CONIFER RELEASE TREATMENTS

**Alligare Imazapyr 4 SL** may be applied as a broadcast or directed spray to suppress the labeled brush, tree and herbaceous weed species. In conifer stands of all ages, use directed low-volume sprays onto unwanted vegetation and avoid direct contact to the conifers. **DO NOT** exceed the maximum labeled rates listed below.

Use broadcast applications of **Alligare Imazapyr 4 SL** for release of the following conifers from hardwood competition:

Crop Species	Rate (fl. oz./A)
Loblolly Pine ( <i>Pinus taeda</i> ) <sup>a</sup>	12 - 20
Loblolly X Pitch Hybrid <sup>a</sup>	12 - 20
Virginia Pine ( <i>Pinus virginiana</i> ) <sup>a</sup>	12 - 20
Longleaf Pine ( <i>Pinus palustris</i> )	12 - 16
Pitch Pine ( <i>Pinus rigida</i> )	12 - 16
Shortleaf Pine ( <i>Pinus echinata</i> )	12 - 16
Slash Pine ( <i>Pinus elliotii</i> )	12 - 16
White Pine ( <i>Pinus strobus</i> ) <sup>b</sup>	8 - 16
California Red Fir ( <i>Abies magnifica</i> )	8 - 12
California White Fir ( <i>Abies concolor</i> )	8 - 12
Lodgepole Pine ( <i>Pinus contorta</i> ) <sup>c</sup>	8 - 12
Douglas-Fir ( <i>Pseudotsuga menziesii</i> ) <sup>c</sup>	8 - 12
Jack Pine ( <i>Pinus banksiana</i> ) <sup>c</sup>	6 - 12
Black Spruce ( <i>Picea mariana</i> ) <sup>c</sup>	6 - 12
Red Spruce ( <i>Picea rubens</i> ) <sup>c</sup>	6 - 12
White Spruce ( <i>Picea glauca</i> ) <sup>c</sup>	6 - 12

<sup>a</sup> **DO NOT** make applications to white pine stands younger than three years old. To minimize potential injury to White Pine, release treatments should not be made prior to July 15.

<sup>b</sup> Applications should be made after formation of final conifer resting buds in the fall or height growth inhibition may occur.

<sup>c</sup> Mid-rotation release: For broadcast applications below the pine canopy in established stands of Loblolly Pine, Loblolly X pitch hybrid, and Virginia Pine use 16-32 oz. product per acre. For mid-rotation release of other species use rates listed above.

Apply the specified rate of **Alligare Imazapyr 4 SL** per acre when applying broadcast sprays by helicopter or ground spray equipment. Refer to mixing and application instructions for proper spray volumes. A nonionic surfactant may be added but at no more than 1/4% by volume of the finished spray. Use the higher label rates of **Alligare Imazapyr 4 SL** when controlling especially dense stands or hard to control species.

Conifers may exhibit some minor growth inhibition when release treatments are made during periods of active conifer growth. To minimize potential growth inhibition, **DO NOT** make broadcast applications to conifer stands, except loblolly pine, before the end of the second growing season and, then, not until late in the growing season. To reduce the possibility of conifer injury, **DO NOT** apply **Alligare Imazapyr 4 SL** when conifers are under stress from drought, diseases, animal or winter injury, or other stresses that reduce conifer vigor.

**For release of loblolly pine seedlings during the first growing season following planting or for one-year-old natural loblolly pine regeneration:** For one-year-old loblolly pine release, apply 12-20 fluid oz./A **Alligare Imazapyr 4 SL** after July 15. Use rates below 16 fluid oz./A for growth suppression of hardwoods; however, some hardwood resprouting should be expected.

**For release of 2-to-5 year old slash pine and longleaf pine from undesirable woody plants:** Broadcast release treatments over the top of pines after August 15 and only in stands 2 to 5 years old. **DO NOT** add surfactant to the spray solution and use the lower labeled rates on areas with sandy soils.

**For release of slash pine over 5 years old by aerial application:** Apply **ONLY** after September 15 after height growth has stopped and buds have set. Use 12 to 14 fluid oz. **Alligare Imazapyr 4 SL** per acre but only 12 fluid oz on areas with sandy soils. **DO NOT** add surfactant to the spray solution. **DO NOT** over apply by overlapping the spray pattern or dressing up around the edges of a tract. Since this treatment may cause some inhibition in height growth or terminal dieback, it should not be used if such affects are unacceptable.

**For use ONLY in Maine for release of Jack Pine, Black Spruce, Red Spruce and White Spruce:** For hardwood growth suppression, apply **Alligare Imazapyr 4 SL** at rates less than 6 fluid oz. per acre when tank mixed with glyphosate. Use a nonionic surfactant at rates greater than 0.25% v/v. The use of **Alligare Imazapyr 4 SL** with more than 0.25% v/v non-

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ionic surfactant can result in conifer growth inhibition or mortality, and should not be used if this type of conifer injury is unacceptable.

The use of **Alligare Imazapyr 4 SL** rates below 6 oz./A are intended for hardwood brush growth suppression and hardwood brush resprouting should be expected.

## USE FOR SPOT TREATMENT OF UNDESIRABLE BRUSH AND HARDWOOD VEGETATION

Apply Alligare Imazapyr 4 SL as a directed foliar or cut stem application in conifer stands of all ages for the conifer species listed above. Mix and apply as described above for directed foliar or cut stem applications. **DO NOT** exceed the maximum labeled rates listed above. Cut stem applications may be used for spot treatment of undesirable hardwoods in Ponderosa Pine stands using 12 oz. or less of product per acre.

Avoid direct spray contact to desired plant species as injury may occur. Injury may occur to non-target or desirable hardwoods or conifers if they extend from the same root system or their root systems are grafted to those of the treated tree or if their roots extend into the treated zone.

## LATE ROTATION VEGETATION CONTROL IN WESTERN CONIFERS

In California, the Pacific Northwest and Inland Northwest, broadcast aerial applications of this product up to 24 fl. oz./A are permissible in conifer stands that are targeted for harvesting the year following treatment. Use minimum spray volume of 15 gallons per acre. Do not use this treatment if conifer injury or mortality cannot be tolerated.

## BAG AND SPRAY APPLICATIONS FOR CONIFER RELEASE

In Douglas fir and Ponderosa pine stands, broadcast applications of this product up to 16 fl. oz./A are permissible when the trees are covered by bags prior to the application. The bags must prevent the spray mix from contacting the conifer foliage. On sites with coarse textured soils (e.g., decomposed granite, pumice, sandy or rocky sites) or low levels of soil organic matter (generally 5% or less) significant conifer growth inhibition and mortality is possible. Do not use this treatment on these types of sites if conifer growth inhibition and mortality cannot be tolerated.

## AQUATIC USE SECTION

### USE PRECAUTIONS AND RESTRICTIONS FOR AQUATICS

**In the state of New York, Aquatic Uses are Not Allowed.**

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water.

Aerial application is restricted to helicopter only.

Application of this product can only be made by federal or state agencies, such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the state or local government.

**Applications to private water:** Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

**Application to public waters:** Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bays, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

**Recreational Use of Water in Treatment Area:** There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

**Livestock Use of Water in/from Treatment Area:** There are no restrictions on livestock consumption of water from the treatment area.

**Precautions for Potable Water Intakes:** Do not apply this product directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds, which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent over spray of water in terrestrial use sites.

## APPLICATION TO WATERS USED FOR IRRIGATION

The use of treated waters on irrigated crops within 120 days of treatment is prohibited.

**Seasonal Irrigation Water:** This product may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between product application and the first use of treated water for irrigation purposes or until product residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

**Irrigation Canals/Ditches:** Do not apply this product to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or product residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less. Do not apply this product to dry irrigation canals/ditches.

**Quiescent or Slow Moving Waters:** In lakes and reservoirs DO NOT apply this product with-

in one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an active irrigation water intake may be made during the off-season, provided that the irrigation intake will remain active for a minimum 120 days after application or until product residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

**Moving Water:** Do not apply within one-half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

**Use Sites:** This product is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED section) in or near bodies of water which may be flowing, non-flowing, or transient. This product may be applied to specified aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites and seasonal wet areas. See AQUATIC USE section of this label for precautions, restrictions, and instructions on aquatic uses.

Read and observe the following directions if aquatic sites are present in terrestrial non-crop areas and are part of the intended treatment area:

**Herbicidal Activity:** This product will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. This product is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. 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 or submerged storage organs, which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Performance of this product may be reduced if rainfall occurs within 2 hours of application. **This product does not control plants which are completely submerged or have a majority of their foliage under water.**

**Application Methods:** This product must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. Product concentrations resulting from direct application to water are not expected to be of sufficient concentration or duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of over spray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See ADJUVANTS section for specific recommendations). This product may be selectively applied by using low-volume directed application techniques or may be broadcast-applied by using ground equipment, watercraft or by helicopter. In addition, this product may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see AERIAL APPLICATIONS and GROUND APPLICATIONS sections for additional details).

This product should be applied with surface or helicopter application equipment in a minimum of 5 gallons of water per acre. When applying by helicopter, follow directions under the AERIAL APPLICATIONS section of this label; otherwise refer to section on GROUND APPLICATIONS when using surface equipment.

Applications made to moving bodies of water should be made while travelling upstream to prevent concentration of this herbicide in water. Do not apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffocation of some sensitive aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas.

Apply this product at 1 to 3 pints per acre depending on species present and weed density. Do not exceed the maximum label rate of 3 pints per acre (1.5 lb. ai/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED section of this label for specific rates.

This product may be applied as a draw down treatment in areas described above. Apply this product to weeds after water has been drained and allow 14 days before reintroduction of water.

## AQUATIC SPECIES CONTROLLED

This product will control the following target species as specified in the INSTRUCTIONS section of the table. Rates are expressed in terms of product volume for broadcast applications and as a percent solution for directed spot applications including spot treatments. For percent solution applications, DO NOT apply more than the equivalent of 1.5 quarts of this product per acre.



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COMMON NAME	SCIENTIFIC NAME	INSTRUCTIONS
<b>Floating Species</b>		
*Duckweed	<i>Lemna minor</i>	1 – 1 ½ pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Duckweed, Giant	<i>Spirodela polyrriza</i>	1 – 1 ½ pints/are (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Frogbit	<i>Limnobium spongia</i>	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Spatterdock	<i>Nuphar luteum</i>	Apply a tank-mix of 1-2 pints/acre of this product + 4-6 pints/acre glyphosate (0.5% this product + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
*Water Hyacinth	<i>Eichhornia crassipes</i>	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
*Water Lettuce	<i>Pistia stratiotes</i>	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
<b>Emerged Species</b>		
*Alligatorweed	<i>Alternanthera philoxeroides</i>	½ – 2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tank-mix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher product rates.
*Arrowhead, Duck-potato	<i>Sagittaria</i> spp.	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Bacopa, lemon	<i>Bacopa</i> spp.	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Parrot feather	<i>Myriophyllum aquaticum</i>	Must be foliage above water for sufficient product uptake. Apply 1 – 2 pints to actively growing emergent foliage.
*Pennywort	<i>Hydrocotyle</i> spp.	½ – 1 pint/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Pickerelweed	<i>Pontederia cordata</i>	1 – 1½ pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Taro, wild; Dasheen; Elephant's Ear; Coco Yam	<i>Colocasia esculentum</i>	2 – 3 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
*Water lily	<i>Nymphaea odorata</i>	1 – 1 ½ pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Water primrose	<i>Ludwigia uruguayensis</i>	2 – 3 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.
<b>Terrestrial/Marginal</b>		
*Soda Apple, aquatic, Nightshade	<i>Solanum tampicense</i>	1 pint/acre applied to foliage
*Bamboo, Japanese	<i>Phyllostachys</i> spp.	1 ½ – 2 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	<i>Schinus terebinthifolius</i>	1 – 2 pints/acre applied to foliage.
Cattail	<i>Typha</i> spp.	1 – 2 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	<i>Sapium sebiferum</i>	8 – 12 ounces applied to foliage.
Cogongrass	<i>Imperata cylindrica</i>	Burn foliage, till area, that Fall spray 1 quart/acre this product + MSO applied to new growth.
Cordgrass, prairie	<i>Spartina</i> spp.	2 – 3 pints applied to actively growing foliage.
Cutgrass	<i>Zizaniopsis miliacea</i>	2 – 3 pints applied to actively growing foliage.
*Elephant Grass; Napier Grass	<i>Pennisetum purpureum</i>	1½ pints/acre applied to actively growing foliage.
*Flowering rush	<i>Butumu typla</i>	1 – 1½ pints applied to actively growing foliage.
Giant Reed, Wild Cane	<i>Arundo donax</i>	2 – 3 pints/acre applied in spring to actively growing foliage.

COMMON NAME	SCIENTIFIC NAME	INSTRUCTIONS
<b>Terrestrial/Marginal</b>		
*Golden Bamboo	<i>Phyllostachys aurea</i>	1½ – 2 pints/acre applied to the foliage when plant is actively growing before plants set seed heads. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	<i>Echinochloa colonum</i>	1½ – 2 pints applied to actively growing foliage.
Knapweeds	<i>Centaurea species</i>	Russian Knapweed – 1 to 1½ pints + 1 quart/acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	<i>Polygonum cuspidatum</i>	1½ – 2 pints/acre applied postemergence to actively growing foliage.
Melaleuca; Paperbark Tree	<i>Melaleuca quinquenervia</i>	For established stands, apply 2 pints/acre of this product + 6 pints/acre glyphosate + spray adjuvant. For best results, use 4 quarts/A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment, use a 25% solution of this product + 25% solution of glyphosate + 1.25% MSO in water applied as a frill or stump treatments.
*Nutgrass; Kili'p'opu	<i>Cyperus rotundus</i>	1 pint of this product + 1 quart/acre MSO applied early postemergence.
*Nutsedge	<i>Cyperus</i> spp.	1 – 1½ pints postemergence to foliage or pre-emergence incorporated, non-incorporated pre-emergence applications will not control.
Phragmites; Common Reed	<i>Phragmites australis</i>	1½ – 2 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to regrow to approximately 5' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
*Poison Hemlock	<i>Conium maculatum</i>	1 pint of this product + 1 quart/acre MSO applied pre-emergence to early postemergence to rosette, prior to flowering.
Purple Loosestrife	<i>Lythrum salicaria</i>	½ pint/acre applied to actively growing foliage.
Reed canarygrass	<i>Phalaris arundinacea</i>	1½ – 2 pints/acre applied to actively growing foliage.
Rose, swamp	<i>Rosa palustris</i>	1 – 1½ pints/acre applied to actively growing foliage.
Russian-Olive	<i>Elaeagnus angustifolia</i>	1 – 2 pints/acre or a 1% solution, applied to foliage.
Saltcedar; Tamarisk	<i>Tamarix species</i>	Aerial apply 1 quart of this product + 0.25% v/v NIS applied to actively growing foliage during flowering. For spot spraying, use 1% solution of this product + 0.25% v/v NIS and spray to wet foliage. After application, wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control.
Smartweed	<i>Polygonum</i> spp.	1 pint/acre applied early postemergence.
Sumac	<i>Rhus</i> spp.	1 – 1½ pints/acre applied to foliage.
Swamp Morning Glory; Water Spinach; Kangkong	<i>Ipomoea aquatic</i>	½ – 1 pint/acre of this product + 1 quart/ acre MSO applied early postemergence.
Torpedo Grass	<i>Panicum repens</i>	2 pints/acre (1 – 1.5% solution), ensure good coverage to actively growing foliage.
*White Top; Hoary Cress	<i>Cardaria draba</i>	½ – 1 pint/acre of this product applied to actively growing foliage, ensure good coverage.
Willow	<i>Salix</i> spp.	1 – 1 ½ pints/acre of this product applied to actively growing foliage, ensure good coverage.

\*Not approved for use in California.

## TANK MIXES

This product may be tank mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation provided that the tank mix herbicide label does not prohibit such mixing. Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label instructions and restrictions when making an application involving tank mixes.

## TANK MIXES FOR WEED AND BRUSH CONTROL

This product may be tank mixed with other registered herbicide products to provide control of species tolerant to this product.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank mixes. Tank mixing with 2,4-D or products which contain 2,4-D could result in reduced performance of this product when 2,4-D is used at high rates.

## INVERT EMULSIONS:

This product can be applied as an invert emulsion. Consult the invert chemical label for proper mixing directions.



# IMAZAPYR 4 SL

# Specimen Label

## FOR CONTROL OF UNDESIRABLE WEEDS UNDER PAVED SURFACES

This product can be used under asphalt, pond liners and other paved areas ONLY in industrial sites or where the pavement has a suitable barrier along the perimeter that prevents encroachment of roots of desirable plants.

This product should be used only where the area to be treated has been prepared according to good construction practices. If rhizomes, stolons, tubers or other vegetative plant parts are present in the site, they should be removed by scalping with a grader blade to a depth sufficient to ensure their complete removal.

**IMPORTANT:** Paving should follow applications of this product as soon as possible. DO NOT apply where the chemical may contact the root of desirable trees or other plants.

The product is not recommended for use under pavement on residential properties such as driveways or parking lots, nor is it recommended for use in recreational areas such as under bike or jogging paths, golf cart paths, or tennis courts, or where the landscape plantings could be anticipated.

Injury or death of desirable plants may result if this product is applied where roots are present or where they may extend into the treated area. Roots of trees and shrubs may extend a considerable distance beyond the branch extremities or so-called drip line.

## APPLICATION DIRECTIONS FOR PAVED SURFACES:

Applications should be made to the soil surface only when final grade is established. Do not move soil following application of this product. Apply this product in sufficient water (at least 100 gals. per acre) to ensure thorough and uniform wetting of the soil surface, including the shoulder areas. Add this product at a rate of 3 pints per acre (1.1 fluid ounces per 1000 square feet) to clean water in the spray tank during the filling operation. Agitate before spraying.

If the soil is not moist prior to treatment, incorporation of this product is needed for herbicide activation. This product can be incorporated into the soil to a depth of 4 to 6 inches using a rototiller or disc. Rainfall or irrigation of 1 inch will also provide uniform incorporation. Do not allow treated soil to wash or move into untreated areas.

## FOR CONTROL OF UNDESIRABLE WEEDS IN UNIMPROVED DORMANT BERMUDAGRASS AND BAHAGRASS

This product may be used on unimproved dormant bermudagrass and bahiagrass turf on roadsides and utility rights-of-way. The application of this product on established common and coastal bermudagrass and bahiagrass provides control of labeled broadleaf and grass weeds. Competition from these weeds is eliminated, releasing the bermudagrass and bahiagrass. Treatment of bermudagrass with this product results in a compacted growth habit and seed-head inhibition.

Uniformly apply with properly calibrated ground equipment using at least 10 gallons of water per acre with a spray pressure 20 to 50 psi.

**IMPORTANT:** Temporary yellowing of grass may occur when treatment is made after growth commences. DO NOT add surfactant in excess of the specified rate (1 fluid ounce per 25 gallons of spray solution). DO NOT APPLY to grass during its first growing season. DO NOT APPLY to grass that is under stress from drought, disease, insects, or other causes.

## DOSAGE RATES AND TIMING:

**Bermudagrass** – Apply this product at 3 to 6 fluid ounces per acre when the bermudagrass is dormant. Apply this product at 3 to 4 fluid ounces per acre after the bermudagrass has reached full green-up. Applications made during green-up will delay green-up. Include a surfactant in the spray solution (see IMPORTANT statement above).

For additional pre-emergence control of annual grasses and small seeded broadleaf weeds, add Endurance® or Pendulum® herbicide at the rate of 3.3 to 6.6 pounds per acre. Consult the Endurance® or Pendulum® label for weeds controlled and for other use directions and precautions.

For control of johnsongrass in bermudagrass turf, apply this product at 4 fluid ounces per acre plus a registered herbicide with addition of an approved surfactant. For additional control of broadleaves and vines, a registered herbicide may be added to the above mix at the rate of 1 to 2 pints per acre. Observe all precautions and restrictions of the labels.

**Bahiagrass** – Apply this product at 2 to 4 fluid ounces per acre when the bahiagrass is dormant or after the grass has initiated green-up but has not exceeded 25% green-up. Include in the spray solution a surfactant (See Adjuvant section for specific recommendations on surfactants).

## WEEDS CONTROLLED

Bedstraw (*Galium* spp.)  
Bishopweed (*Ptilimnium capillaceum*)  
Buttercup (*Ranunculus parviflorus*)  
Carolina geranium (*Geranium carolinianum*)  
Fescue (*Festuca* spp.)  
Foxtail (*Setaria* spp.)  
Little barley (*Hordeum pusillum*)  
Seedling Johnsongrass (*Sorghum halepense*)  
Wild carrot (*Daucus carota*)  
White clover (*Trifolium repens*)  
Yellow woodsorrel (*Oxalis stricta*)

## GRASS GROWTH AND SEEDHEAD SUPPRESSION

This product may be used to suppress growth and seedhead development of certain turfgrasses in unimproved areas. When applied to desirable turf, this product may result in temporary turf damage, death, and/or discoloration. Effects to the desirable turf may vary with environmental conditions. For optimum performance, application should be made prior to culm elongation. Applications may be made before or after mowing. If applied prior to mowing, allow at least three days of active growth before mowing. If following a mowing, allow sufficient time for the grasses

to recover before applying this product or injury may be amplified.

DO NOT APPLY to turf under stress (drought, cold, insect damaged, etc) or severe injury or death may occur.

**Bermudagrass** – Apply this product at 3 to 4 fluid ounces per acre from early green-up to prior to seedhead initiation. DO NOT add a surfactant for this application.

**Cool Season Unimproved Turf** – Apply this product at 1 fluid ounce per acre plus 0.25% nonionic surfactant. For increased suppression, this product may be tank-mixed with other products suitable for this use.

Tank-mixes may increase injury to desired turf. Consult each product label for recommended turf species and other use directions and precautions. Tank mixes with 2,4-D or products containing 2,4-D at higher rates may decrease the effectiveness of this product.

## TOTAL VEGETATION CONTROL WHERE BAREGROUND IS DESIRED

This product is an effective herbicide for preemergence or postemergence control of many annual and perennial broadleaf and grass weeds where bare ground is desired. This product is particularly effective on hard-to-control perennial grasses. This product at 0.75 to 3 pints per acre can be used alone or in tank mix with Diuron, Simazine, Vanquish®, or other registered herbicides labeled for this use. The degree and duration of control are dependent on the rate of this product used, tank-mix partner, the volume of carrier, soil texture, rainfall and other conditions.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

Applications of these products may be made anytime of the year. Use equipment calibrated to deliver desired gallons per acre spray volume and uniformly distribute the spray pattern over the treated area.

**Postemergence Applications:** Always use a spray adjuvant (See ADJUVANTS section of this label) when making a postemergence application. For optimum performance on tough to control annual grasses, apply 100 gallons per acre or less. For spot treatments, this product may be used as a follow-up treatment to control escapes or weed encroachment in a bare ground situation. To prepare the spray solution, thoroughly mix in each gallon of water 0.5 to 5% of this product plus an adjuvant.

## FOR SPOT TREATMENT WEED CONTROL IN GRASS PASTURE AND RANGELAND

For the control of undesirable vegetation in grass pasture and rangeland this product may be applied as a spot treatment at a rate of 1 to 24 fluid ounces of product per treated acre using any of the described ground application methods. Spot applications to grass pasture and rangeland may not exceed more than one tenth of the area to be grazed or cut for hay. See appropriate sections of this label for specific use directions for the application method and vegetation control desired. DO NOT apply more than 48 fluid ounces per acre per year.

Grazing and haying restrictions: There are no grazing restrictions following application of this product. DO NOT cut forage grass for hay for seven days after application of this product.

## GUIDELINES FOR RANGELAND USE

This product may be applied to rangeland for the control of undesirable vegetation in order to achieve one or more of the following vegetation management objectives:

1. The control of undesirable (non-native, invasive and noxious) plant species.
2. The control of undesirable vegetation in order to aid in the establishment of desirable rangeland plant species.
3. The control of undesirable vegetation in order to aid in the establishment of desirable rangeland vegetation following a fire.
4. The control of undesirable vegetation for purposes of wildlife fuel reduction.
5. The release of existing desirable rangeland plant communities from the competitive pressure of undesirable plant species.
6. The control of undesirable vegetation for purposes of wildlife habitat improvement.

To ensure the protection of threatened and endangered plants when applying this product to rangeland:

1. Federal agencies must follow NEPA regulations to ensure protection of threatened and endangered plants.
2. State agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened and endangered plants.
3. Other organizations or individuals must operate under a Habitat Conservation Plan if threatened or endangered plants are known to be present on the land to be treated.

## ROTATIONAL CROP INSTRUCTIONS

Rotational crops may be planted twelve months after applying this product at the specified pasture and rangeland rate. Following twelve months after an application of this product, and before planting any crop, a successful field bioassay must be completed. The field bioassay consists of a test strip of the intended rotational crop planted in the previously treated area in the grass pasture/rangeland and grown to maturity. The test strip should include low areas and knolls, and include variations in soil type and pH within the treated area. If no crop injury is evident in the test strip, the intended rotational crop may be planted the following year.

Use of this product in accordance with label directions is expected to result in normal growth or rotational crops in most situations; however, various environmental and agronomic factors make it possible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

## ADDITIONAL WEEDS CONTROLLED

In terrestrial sites, this product will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of this product. For established biennials and perennials postemergence applications of this product are recommended.

# IMAZAPYR 4 SL

# Specimen Label

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see Low Volume section of Ground Applications); low volume applications may provide control of the target species with less product per acre than is shown for the broadcast treatments. This product should be used only in accordance with the directions on this label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

**Resistant Biotypes:** Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct, genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, this product should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES		
COMMON NAME	SPECIES	GROWTH HABIT <sup>2</sup>
<b>Apply 1.0 – 1.5 pints per acre<sup>1</sup></b>		
Annual bluegrass	( <i>Poa annua</i> )	A
Broadleaf signalgrass	( <i>Brachiaria platyphylla</i> )	A
Canada bluegrass	( <i>Poa compressa</i> )	P
Downy brome	( <i>Bromus tectorum</i> )	A
Fescue	( <i>Festuca</i> spp.)	A/P
Foxtail	( <i>Setaria</i> spp.)	A
Italian ryegrass	( <i>Lolium multiflorum</i> )	A
Johnsongrass	( <i>Sorghum halepense</i> )	P
Kentucky bluegrass	( <i>Poa pratensis</i> )	P
Lovegrass	( <i>Eragrostis</i> spp.)	A/P
*Napier grass	( <i>Pennisetum purpureum</i> )	P
Orchardgrass	( <i>Dactylis glomerata</i> )	P
Paragrass	( <i>Brachiaria mutica</i> )	P
Quackgrass	( <i>Agropyron repens</i> )	P
Sandbur	( <i>Cenchrus</i> spp.)	A
Sand dropseed	( <i>Sporobolus cryptandrus</i> )	P
Smooth brome	( <i>Bromus inermis</i> )	P
Vaseygrass	( <i>Paspalum urvillei</i> )	P
Wild oats	( <i>Avena fatua</i> )	A
Witchgrass	( <i>Panicum capillare</i> )	A
<b>Apply 1.5 – 2.0 pints per acre<sup>1</sup></b>		
Barnyardgrass	( <i>Echinochloa crus-gali</i> )	A
Beardgrass	( <i>Andropogon</i> spp.)	P
Bluegrass, Annual	( <i>Poa annua</i> )	A
*Bulrush	( <i>Scirpus validus</i> )	A
Cheat	( <i>Bromus secalinus</i> )	A
Crabgrass	( <i>Digitaria</i> spp.)	A
Crowfootgrass	( <i>Dactyloctenium aegyptium</i> )	A
Fall panicum	( <i>Panicum dichotomiflorum</i> )	A
Giant Reed	( <i>Arundo donax</i> )	A
Goosegrass	( <i>Eleusine indica</i> )	A
Itchgrass	( <i>Rottboellia exaltata</i> )	A
Jungle rice	( <i>Echinochloa colonum</i> )	A
Lovegrass	( <i>Eragrostis</i> spp.)	A
*Maidencane	( <i>Panicum hemitomon</i> )	A
Panicum, Browntop	( <i>Panicum tasciculatum</i> )	A
Panicum, Texas	( <i>Panicum texanum</i> )	A
Prairie threeawn	( <i>Aristida oligantha</i> )	P
Reed canarygrass	( <i>Phalaris arundinacea</i> )	P
Sandbur, Field	( <i>Cenchrus incertus</i> )	A
Signalgrass	( <i>Brachiaria platyphylla</i> )	A
Torpedograss	( <i>Panicum repens</i> )	P
Wild barley	( <i>Hordeum</i> spp.)	A
Wooly Cupgrass	( <i>Eriochloa villosa</i> )	A
<b>Apply 2.0 – 3.0 pints per acre<sup>1</sup></b>		
Bahiagrass	( <i>Paspalum notatum</i> )	P
Bermudagrass <sup>3</sup>	( <i>Cynodon dactylon</i> )	P
Big bluestem	( <i>Andropogon gerardii</i> )	P
Cattail	( <i>Typha</i> spp.)	P
Cogongrass	( <i>Imperata cylindrical</i> )	P
Dallisgrass	( <i>Paspalum dilatatum</i> )	P
Feathertop	( <i>Pennisetum villosum</i> )	P
Guineagrass	( <i>Panicum maximum</i> )	P
Phragmites	( <i>Phragmites australis</i> )	P
Prairie cordgrass	( <i>Spartina pectinata</i> )	P
Saltgrass <sup>3</sup>	( <i>Distichlis stricta</i> )	P
Sand dropseed	( <i>Sporobolus cryptandrus</i> )	P
Sprangletop	( <i>Leptochloa</i> spp.)	A
Timothy	( <i>Phleum pratense</i> )	P
Wirestem muhly	( <i>Muhlenbergia frondosa</i> )	P
BROADLEAF WEEDS		
COMMON NAME	SPECIES	GROWTH HABIT <sup>2</sup>
<b>Apply 1.0 – 1.5 pints per acre<sup>1</sup></b>		
Alligatorweed	( <i>Alternanthera philoxeroides</i> )	A/P
Burdock	( <i>Arctium</i> spp.)	B
Goosegrass	( <i>Eleusine indica</i> )	A
Camphorweed	( <i>Heterotheca subaxillaris</i> )	P

COMMON NAME	SPECIES	GROWTH HABIT <sup>2</sup>
<b>Apply 1.0 – 1.5 pints per acre<sup>1</sup></b>		
Carolina geranium	( <i>Geranium carolinianum</i> )	A
Clover	( <i>Trifolium</i> spp.)	A/P
Common chickweed	( <i>Stellaria media</i> )	A
Common ragweed	( <i>Ambrosia artemisiifolia</i> )	A
Dandelion	( <i>Taraxacum officinale</i> )	P
Dog fennel	( <i>Eupatorium capillifolium</i> )	A
Filaree	( <i>Erodium</i> spp.)	A
Fleabane	( <i>Erigeron</i> spp.)	A
Hoary vervain	( <i>Verbena stricta</i> )	P
Horseweed	( <i>Coryza canadensis</i> )	A
Indian mustard	( <i>Brassica juncea</i> )	A
Kochia	( <i>Kochia scoparia</i> )	A
Lambsquarters	( <i>Chenopodium album</i> )	A
*Lespedeza	( <i>Lespedeza</i> spp.)	P
Miners lettuce	( <i>Montia perfoliata</i> )	A
Mullein	( <i>Verbascum</i> spp.)	B
Nettleleaf goosefoot	( <i>Chenopodium murale</i> )	A
Oxeye daisy	( <i>Chrysanthemum leucanthemum</i> )	P
Pepperweed	( <i>Lepidium</i> spp.)	A
Pigweed	( <i>Amaranthus</i> spp.)	A
Plantain	( <i>Plantago</i> spp.)	P
Puncturevine	( <i>Tribulus terrestris</i> )	A
Russian thistle	( <i>Salsola kali</i> )	A
Smartweed	( <i>Polygonum</i> spp.)	A/P
Sorrell	( <i>Rumex</i> spp.)	P
Sunflower	( <i>Helianthus</i> spp.)	A
Sweet clover	( <i>Melilotus</i> spp.)	A/B
Tansymustard	( <i>Descurainia pinnata</i> )	A
Western ragweed	( <i>Ambrosia psilostachya</i> )	P
Wild carrot	( <i>Daucus carota</i> )	B
Wild lettuce	( <i>Lactuca</i> spp.)	A/B
Wild parsnip	( <i>Pastinaca sativa</i> )	B
Wild turnip	( <i>Brassica campestris</i> )	B
Woollyleaf bursage	( <i>Franseria tomentosa</i> )	P
Yellow woodsorrel	( <i>Oxalis stricta</i> )	P
<b>Apply 1.5 – 2.0 pints per acre<sup>1</sup></b>		
Broom snakeweed <sup>4</sup>	( <i>Gutierrezia sarothrae</i> )	P
Bull thistle	( <i>Cirsium vulgare</i> )	B
Burclover	( <i>Medicago</i> spp.)	A
Chickweed, Mouseear	( <i>Cerastium vulgatum</i> )	A
Clover, Hop	( <i>Trifolium procumbens</i> )	A
Cocklebur	( <i>Xanthium strumarium</i> )	A
Cudweed	( <i>Gnaphalium</i> spp.)	A
Desert Camelthorn	( <i>Alhagi pseudalhagi</i> )	P
Diffuse knapweed	( <i>Centaurea diffusa</i> )	A
Dock	( <i>Rumex</i> spp.)	P
Fiddleneck	( <i>Amsinckia intermedia</i> )	A
Goldenrod	( <i>Solidago</i> spp.)	P
Henbit	( <i>Lamium alexicaule</i> )	A
Knotweed, prostrate	( <i>Polygonum aviculare</i> )	A/P
Pokeweed	( <i>Phytolacca americana</i> )	P
Purple loosestrife	( <i>Lythrum salicaria</i> )	P
Purslane	( <i>Portulaca</i> spp.)	A
Pusley, Florida	( <i>Richardia scabra</i> )	A
Rocket, London	( <i>Sisymbrium irio</i> )	A
Rush skeletonweed <sup>4</sup>	( <i>Chondrilla juncea</i> )	B
Saltbrush	( <i>Atriplex</i> spp.)	A
Shepherd's-purse	( <i>Capsella bursa-pastoris</i> )	A
Spurge, Annual	( <i>Euphorbia</i> spp.)	A
Stinging nettle <sup>4</sup>	( <i>Urtica dioica</i> )	P
Velvetleaf	( <i>Abutilon theophrasti</i> )	A
Yellow starthistle	( <i>Centaurea solstitialis</i> )	A
<b>Apply 2.0 – 3.0 pints per acre<sup>1</sup></b>		
Arrowweed	( <i>Pluchea sericea</i> )	A
Canada thistle	( <i>Cirsium arvanse</i> )	P
Giant ragweed	( <i>Ambrosia trifida</i> )	A
Grey rabbitbrush	( <i>Chrysothamnus nauseosus</i> )	P
Little mallow	( <i>Malva parviflora</i> )	B
Milkweed	( <i>Asclepias</i> spp.)	P
Primrose	( <i>Oenothera kunthiana</i> )	P
Russian knapweed	( <i>Centaurea repens</i> )	P
Silverleaf nightshade	( <i>Solanum eleagnifolium</i> )	P
Sowthistle	( <i>Sonchus</i> spp.)	A
Texas thistle	( <i>Cirsium texanum</i> )	P
VINES AND BRAMBLES		
COMMON NAME	SPECIES	GROWTH HABIT <sup>2</sup>
<b>Apply 0.5 pint per acre</b>		
Field bindweed	( <i>Convolvulus arvensis</i> )	P
Hedge bindweed	( <i>Calystegia sepium</i> )	A
<b>Apply 1.0 – 1.5 pints per acre<sup>1</sup></b>		
Wild buckwheat	( <i>Polygonum convolvulus</i> )	P

# IMAZAPYR 4 SL

# Specimen Label

COMMON NAME SPECIES GROWTH HABIT<sup>2</sup>

**Apply 1.5 – 2.0 pints per acre<sup>1</sup>**

Greenbriar	( <i>Smilax</i> spp.)	P
Honeysuckle	( <i>Lonicera</i> spp.)	P
Morningglory	( <i>Ipomoea</i> spp.)	A/P
Poison ivy	( <i>Rhus radicans</i> )	P
Redvine	( <i>Brunnichia cirrhosa</i> )	P
Wild rose	( <i>Rosa</i> spp.)	P
Including: Multiflora rose	( <i>Rosa multiflora</i> )	P
McCartney rose	( <i>Rosa bracteata</i> )	P

**Apply 2.0 – 3.0 pints per acre<sup>1</sup>**

Blackberry	( <i>Rubus</i> spp.)	P
Dewberry	( <i>Rubus</i> spp.)	P
*Kudzu <sup>3</sup>	( <i>Pueraria lobata</i> )	P
Trumpet creeper	( <i>Campsis radicans</i> )	P
Virginia creeper	( <i>Parthenocissus quinquefolia</i> )	P
Wild grape	( <i>Vitis</i> spp.)	P

## BRUSH SPECIES

COMMON NAME SPECIES GROWTH HABIT<sup>2</sup>

**Apply 2.0 – 3.0 pints per acre<sup>1</sup>**

American beech	( <i>Fagus grandifolia</i> )	P
Ash	( <i>Fraxinus</i> spp.)	P
Bald cypress	( <i>Taxodium distichum</i> )	P
Bigleaf maple	( <i>Acer macrophyllum</i> )	P
Black locust <sup>4</sup>	( <i>Robinia pseudoacacia</i> )	P
Blackgum	( <i>Nyssa sylvatica</i> )	P
Boxelder	( <i>Acer negundo</i> )	P
Brazilian peppertree	( <i>Schinus terebinthifolius</i> )	P
Cherry	( <i>Prunus</i> spp.)	P
Chinaberry	( <i>Melia azadirach</i> )	P
Chinese tallowtree	( <i>Sapium sebiferum</i> )	P
Dogwood	( <i>Cornus</i> spp.)	P
Elm <sup>5</sup>	( <i>Ulmus</i> spp.)	P
Hawthorn	( <i>Crataegus</i> spp.)	P
Hickory	( <i>Carya</i> spp.)	P
Honeylocust <sup>4</sup>	( <i>Gleditsia triacanthos</i> )	P
Maple	( <i>Acer</i> spp.)	P
Melaleuca	( <i>Melaleuca quiquenervia</i> )	P
Mulberry	( <i>Morus</i> spp.)	P
Oak	( <i>Quercus</i> spp.)	P
Persimmon	( <i>Diospyros virginiana</i> )	P
*Pine <sup>6</sup>	( <i>Pinus</i> spp.)	P
Poplar	( <i>Populus</i> spp.)	P
Privet	( <i>Ligustrum vulgare</i> )	P
Red Alder	( <i>Alnus rubra</i> )	P
Red Maple	( <i>Acer rubrum</i> )	P
Rubber rabbitbrush	( <i>Chrysothamnus nauseosus</i> )	P
Russian Olive	( <i>Eleagnus angustifolia</i> )	P
Sassafras	( <i>Sassafras albidum</i> )	P
Saltcedar	( <i>Tamarix ramosissima</i> )	P
Sourwood	( <i>Oxydendrum arboretum</i> )	P
Sumac	( <i>Rhus</i> spp.)	P
Sweetgum	( <i>Liquidambar styraciflua</i> )	P
*Water willow	( <i>Justica americana</i> )	P
Willow	( <i>Salix</i> spp.)	P
Yellow poplar	( <i>Liriodendron tulipifera</i> )	P

\*Not approved for use in California

<sup>1</sup>The higher rates should be used where heavy or well-established infestations occur.

<sup>2</sup>Growth Habit – A=Annual, B=Biennial, P=Perennial

<sup>3</sup>Use a minimum of 75 GPA – Control of established stands may require repeat applications

<sup>4</sup>For best results, early postemergence applications are required.

<sup>5</sup>Tank-mix with glyphosate or triclopyr.

<sup>6</sup>Tank-mix with glyphosate.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** DO NOT store below 10°F.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**IMPORTANT:** Read the entire **DIRECTIONS FOR USE** and the **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY** before using this product. If terms are not acceptable, return the unopened product container at once.

## CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

**Limitation of Liability:** To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

Microfoil is a trademark of Rhone Poulenc Ag. Company.

Thru-Valve is a trademark of Waldrum Specialties.

Accord is a registered trademark of Monsanto Company

Oust is a registered trademark of E.I. DuPont de Nemours and Company.

Garlon is a trademark of Dow AgroSciences Company.

Pendulum is a registered trademark of BASF.

Endurance and Vanquish are registered trademarks of Syngenta Group Company.

EPA 20120809

# SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



## 1. IDENTIFICATION

**PRODUCT NAME:** Alligare Imazapyr 4 SL

**DESCRIPTION:** A liquid herbicide.

**EPA Reg. No.:** 81927-24

**COMPANY IDENTIFICATION:**

**Alligare, LLC**

13 N. 8<sup>th</sup> Street

Opelika, AL 36801

## 2. HAZARD IDENTIFICATION



**WARNING**

Harmful if inhaled

May be harmful if swallowed

May be harmful in contact  
with skin

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS #</u>	<u>Composition</u>
Isopropylamine salt of Imazapyr	Isopropylamine salt of (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)	81510-83-0	52.6%

## 4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies involving this product, call 1-800-424-9300.

**IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a doctor or poison control center if you feel unwell.

**IF SWALLOWED:** Call a doctor or poison control center if you feel unwell.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing and wash before reuse. Rinse skin immediately with plenty of water. If skin irritation or rash occurs: call a poison control center or doctor for treatment advice.

## 5. FIREFIGHTING MEASURES

**Flash point:** Not combustible.

**Flammable Limits (LFL-UFL):** N/A

**Fire and Explosion Hazards:** Data not available.

**Means of Extinction:** Foam, CO<sub>2</sub>, dry chemical, or water spray.

**Fire Fighting Instructions:** Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

**Firefighting Equipment:** Firefighters should be equipped with self-contained positive pressure breathing apparatus and turnout gear.

**Hazardous Combustion Products:** When thermally decomposed, may release hazardous and / or toxic fumes.

**NFPA Ratings:** Health: 1 / Flammability: 1 / Instability: 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document. Extinguish sources of ignition nearby and downwind and ensure adequate ventilation.

**Environmental Precautions:** Do not discharge into soil / subsoil or into drains / surface water / groundwater. Contain contaminated water / firefighting water.

**Spill Cleanup:** Dike spillage. Pick up with suitable absorbent material. Place into suitable container for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect washwater for approved disposal.

## 7. HANDLING AND STORAGE

**Handling:** Wear appropriate personal protective clothing and equipment (see Section 8 below). Use only in a well-ventilated area. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Storage:** Keep out of reach of children and animals. Do not store below 10°F. Store product in original container only, away from other pesticides, fertilizer, food, or feed.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Workplace should be equipped with a shower and eye-wash station.

**Protective Clothing:** Handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material (such as polyethylene or polyvinylchloride), and shoes plus socks.

**General:** Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Transparent blue, slightly viscous liquid

**Odor:** Not available

**pH:** 5.0 – 5.5

**Relative Density:** 1.2 g/mL

**Solubility:** Soluble

## 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** All sources of ignition (sparks, open flame and excessive heat). Prolonged exposure to extreme temperatures. Electrostatic discharge. Prolonged storage.

**CHEMICAL STABILITY:** Stable under normal use and storage conditions. May decompose if heated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** When thermally decomposed, may release hazardous and / or toxic fumes.

**INCOMPATIBILITY WITH OTHER MATERIALS:** Strong alkalis, oxidizing agents.

**HAZARDOUS REACTIONS:** This product is chemically stable and no hazardous reactions should occur if stored and handled as prescribed / indicated.

**HAZARDOUS POLYMERIZATION:** Will not occur.



## 11. TOXICOLOGICAL INFORMATION

**ORAL TOXICITY (rat LD<sub>50</sub>):** > 2,000 mg/kg

**DERMAL TOXICITY (rat LD<sub>50</sub>):** > 2,000 mg/kg

**INHALATION TOXICITY (rat LC<sub>50</sub>):** > 4.72 mg/L (4-hour)

**EYE IRRITATION:** Minimally irritating

**SKIN IRRITATION:** Non-irritating

**SKIN SENSITIZATION:** Not a contact sensitizer

**CARCINOGENICITY:**

**EPA:** Not Listed

**ACGIH:** Not Listed

**NTP:** Not Listed

**IARC:** Not Listed

**OSHA:** Not Listed

**MUTAGENIC TOXICITY:** No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

**REPRODUCTIVE TOXICITY:** No evidence in animal studies.

## 12. ECOLOGICAL INFORMATION

This product is toxic to plants. Drift and run-off may be hazardous to plants in water adjacent to treated areas. Do not apply to water except as specified on this label.

## 13. DISPOSAL CONSIDERATIONS

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Refer to the product label for specific container handling instructions.

## 14. TRANSPORT INFORMATION

**US DOT:**

Not regulated by DOT.

**IATA (Shipped by Air):**

UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (contains Imazapyr), 9, PG III

**IMO (Shipped by Water):**

UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (contains Imazapyr), 9, PG III,  
Marine Pollutant

## 15. REGULATORY INFORMATION

**FIFRA –**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing and wash before reuse.

See inside label booklet for additional Precautionary Statements and Directions for Use including Storage and Disposal instructions.

## ENVIRONMENTAL HAZARDS

This product is toxic to plants. Drift and run-off may be hazardous to plants in water adjacent to treated areas. Do not apply to water except as specified on this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. Do not treat more than one-half the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatments along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate. See Directions for Use for additional precautions and requirements.

## PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of Alligare Imazapyr 4 SL should be mixed, stored and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

DO NOT mix, store or apply Alligare Imazapyr 4 SL or spray solutions of Alligare Imazapyr 4 SL in unlined steel (except stainless steel) containers or spray tanks.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

### SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

### SARA Title III – Section 311/312 Hazard Categories

Immediate

### SARA Title III – Section 312 Threshold Planning Quantity

N/A

### SARA Title III – Section 313 Reportable Ingredients

None

### CERCLA –

Not listed

### CALIFORNIA PROP 65 STATUS –

This product does not contain any chemicals known to the state of California to cause cancer or reproductive toxicity.

### CANADA –

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

## 16. OTHER INFORMATION

THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

SDS Version: 2.2

Effective Date: 04/19/16