



## **EXHIBIT 17**

### **WEED CONTROL PLAN**

### **FIELDWIDE -NIOBRARA**

## Introduction

ConocoPhillips Company implements varying methods of weed control throughout the phases of wellsite development, utilizing different companies appropriately suited to serve our needs for each phase. We have divided the phases of development into Construction, Drilling and Completions, and Operations/Production. Please find below the company, their methodology, timing, and the specific areas of the wellsite they will be targeting for weed control.

## Construction Phase

During the construction phase of development, ConocoPhillips Company utilizes Weed Wranglers, Inc., a certified applicator of herbicide, on an as needed basis for weed control on the gravel surfaces of the well pad and access road(s). Weed growth will be monitored by ConocoPhillips Company's construction supervisor. Weed Wranglers, Inc. utilizes 2 products for this application, Payload and Roundup Custom (ranger Pro), both applied by spraying the surface of the gravel well pad and access road. Typically, during the construction phase of development, we are roughing and reseeding disturbed areas outside the gravel surfaces of the pad and access road with the goal of establishing regrowth. Due to the fragile nature of establishing regrowth, chemical weed control is counterproductive to our regrowth goals. Based on the recommendation of COGCC field inspectors, ConocoPhillips Company will mow areas of weed overgrowth so that native grasses have opportunity to mature without being stunted or killed by chemical control.

### **Weed Wranglers, Inc.**

**6333 S. Santa Fe Dr., Suite A-1, Littleton, CO 80120-2912**

**Phone: (303) 798-4090, Fax: (303) 798-2736**

**Email: [ww@weedwranglers.com](mailto:ww@weedwranglers.com)**

## Drilling and Completions Phase

During the drilling and completions phase of the wellsite development, ConocoPhillips Company utilizes Western States Reclamation, Inc., a certified applicator of herbicide, on an as needed basis for weed control on the gravel surfaces of the well pad and access road(s). This weed control plan for the drilling and completions phase of wellsite development addresses **BMP 18. Flammable Material** by controlling the dry weeds and grass within 25' of any tank, or other structure containing flammable or combustible material. Weed growth will be monitored by ConocoPhillips Company's drilling and completions supervisor. Western States Reclamation, Inc. utilizes 2 products for this application, Mojave70EG and Roundup Custom (Ranger Pro), both applied by spraying the surface of the gravel well pad and access road. Western States Reclamation, Inc. also provides selective herbicide weed control on an as needed basis for native grass areas disturbed outside the gravel surface of the well pad and access road(s). Weed growth in areas outside the gravel well pad and access road(s) will also be monitored by ConocoPhillips Company's drilling and completions supervisor. Western States Reclamation, Inc. utilizes a combination of the following products for areas outside the gravel surfaces of the well pad and access road including : Patriot, Curtail, Milestone, and Tordon 22K, dependent upon a number of site-specific conditions including: the types of weeds growing, the presence of trees, and the maturity of the native grasses. All of products utilized for weed control in areas outside the gravel well pad and access road(s) will also be applied by spray application.

**Western States Reclamation, Inc.**  
**3756 Imperial Street, Frederick, CO 80516**  
**Phone (303)-833-1986, Fax (303)-833-1986**

### **Operations/Production Phase**

During the operations/production phase of development, ConocoPhillips Company utilizes Weed Wranglers, Inc., a certified applicator of herbicide, on an as needed basis for weed control on the gravel surfaces of the well pad and access road(s). This weed control plan for the operations/production phase of wellsite development addresses **BMP 18. Flammable Material** by controlling the dry weeds and grass within 25' of any tank, or other structure containing flammable or combustible material. Weed growth will be monitored by ConocoPhillips Company's operations supervisor. Weed Wranglers, Inc. utilizes 2 products for this application, Payload and Roundup Custom (ranger Pro), both applied by spraying the surface of the gravel well pad and access road. Weed Wranglers, Inc. also provides selective herbicide weed control on an as needed basis for native grass areas disturbed outside the gravel surface of the well pad and access road(s). Weed growth in areas outside the gravel well pad and access road(s) will also be monitored by ConocoPhillips Company's operations/production supervisor. Weed Wranglers, Inc. utilizes a combination of the following products for areas outside the gravel surfaces of the well pad and access road including : Vision, Vista XRT, Milestone, Telar XP, and Tordon 22K., dependent upon number of site-specific conditions including to the types of weeds growing, the presence of trees, and the maturity of the native grasses. All of products utilized for weed control in the areas outside the gravel well pad and access road(s) will also be applied by spray application.

**(See Weed Wranglers, Inc. information above)**

### **Summary**

Throughout all phases of development, the need for weed control is dependent on prevailing weather conditions contributing to both weed growth and native grass growth. The most effective methodology for continuously monitoring and mitigating weed growth on our well sites is for ConocoPhillips Company's supervisors to visually inspect the well pad, access road(s), and surrounding areas for weed growth. Based on visual observation the supervisors for each perspective phase of development will contact the certified herbicide applicator assigned to each phase of development to mitigate weed growth when observed.

**The following pages contain the Labels and SDS information for the chemicals that will be used for weed control on the ConocoPhillips wellsites.**

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Version 2.0 / USA  
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## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### Product identifier

Trade name TELAR® XP  
Product code (UVP) 85835149  
SDS Number 102000035078  
EPA Registration No. 432-1561

### Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide  
Restrictions on use See product label for restrictions.

### Information on supplier

Supplier Bayer Environmental Science  
2 T.W. Alexander Drive  
Research Triangle PK, NC 27709  
USA  
Responsible Department Email: SDSINFO.BCS-NA@bayer.com

### Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577  
Product Information Telephone Number 1-800-331-2867

## SECTION 2: HAZARDS IDENTIFICATION

### Classification in accordance with regulation HCS 29CFR §1910.1200

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

### Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.  
No health hazards not otherwise classified.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
chlorsulfuron	64902-72-3	75.0
Lignosulfonic acid, sodium salt, sulfomethylated	68512-34-5	6.0

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## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

<b>General advice</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Inhalation</b>	Move 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 physician or poison control center immediately.
<b>Skin contact</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Eye contact</b>	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 physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

### Most important symptoms and effects, both acute and delayed

**Symptoms** To date no symptoms are known.

### Indication of any immediate medical attention and special treatment needed

**Treatment** Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

**Suitable** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable** High volume water jet

**Special hazards arising from the substance or mixture** Dangerous gases are evolved in the event of a fire.

### Advice for firefighters

**Special protective equipment for firefighters** Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

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<b>Further information</b>	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Whenever possible, contain fire-fighting water by diking area with sand or earth.
<b>Flash point</b>	Not applicable
<b>Auto-ignition temperature</b>	No data available
<b>Lower explosion limit</b>	Not applicable
<b>Upper explosion limit</b>	Not applicable
<b>Explosivity</b>	No data available
<b>Dust explosion class</b>	No data available

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

### Methods and materials for containment and cleaning up

**Methods for cleaning up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed.

**Additional advice** Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

**Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

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## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Ensure adequate ventilation. Handle and open container in a manner as to prevent spillage.

**Hygiene measures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

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## Conditions for safe storage, including any incompatibilities

**Requirements for storage areas and containers** Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

No known occupational limit values.

### Exposure controls

#### Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

#### Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

#### Hand protection

Chemical resistant nitrile rubber gloves

#### Eye protection

Safety glasses with side-shields

#### Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

#### General protective measures

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

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light tan to brown
Physical State	small rod
Odor	mild
Odour Threshold	No data available
pH	5 - 7 (1 %) (23 °C) (deionized water)
Vapor Pressure	No data available
Vapor Density (Air = 1)	No data available
Bulk density	0.50 - 0.70 g/ml (loose)
Evaporation rate	Not applicable
Boiling Point	Not applicable

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Melting / Freezing Point	Not applicable
Water solubility	dispersible
Minimum Ignition Energy	Not applicable
Decomposition temperature	No data available
Partition coefficient: n-octanol/water	Not applicable
Viscosity	Not applicable
Flash point	Not applicable
Auto-ignition temperature	No data available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Explosivity	No data available
Dust explosion class	No data available

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## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

Thermal decomposition	No data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

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## SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Ingestion, Eye contact, Skin contact, Inhalation
Immediate Effects	
Eye	May cause slight irritation.
Skin	May cause slight irritation.
Ingestion	Harmful if swallowed.

Information on toxicological effects

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<b>Acute oral toxicity</b>	LD50 (Rat) 4,286 mg/kg
<b>Acute inhalation toxicity</b>	No data available
<b>Acute dermal toxicity</b>	LD50 (Rat) > 5,000 mg/kg
<b>Skin corrosion/irritation</b>	slight irritation (Rabbit)
<b>Serious eye damage/eye irritation</b>	slight irritation (Rabbit)
<b>Respiratory or skin sensitisation</b>	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test

### ACGIH

None.

### NTP

None.

### IARC

None.

### OSHA

None.

### Further information

Only acute toxicity studies have been performed on the formulated product.

## SECTION 12: ECOLOGICAL INFORMATION

<b>Toxicity to fish</b>	LC50 (Oncorhynchus mykiss (rainbow trout)) > 122 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient chlorsulfuron.
<b>Toxicity to aquatic invertebrates</b>	EC50 (Daphnia magna (Water flea)) > 112 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient chlorsulfuron.  LC50 (Mysidopsis bahia (mysid shrimp)) 89 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient chlorsulfuron.
<b>Toxicity to aquatic plants</b>	ErC50 (Raphidocelis subcapitata (freshwater green alga)) > 0.24 mg/l Exposure time: 72 h  EbC50 (Raphidocelis subcapitata (freshwater green alga)) 0.088 mg/l Exposure time: 72 h
<b>Environmental precautions</b>	Do not apply directly to water, to areas where surface water is present

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or to intertidal areas below the mean high water mark.  
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product</b>	Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. Follow advice on product label and/or leaflet.
<b>Contaminated packaging</b>	Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.
<b>RCRA Information</b>	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

## SECTION 14: TRANSPORT INFORMATION

<b>49CFR</b>	Not dangerous goods / not hazardous material
<b>IMDG</b>	
UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CHLORSULFURON MIXTURE)
<b>IATA</b>	
UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CHLORSULFURON MIXTURE )

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

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## SECTION 15: REGULATORY INFORMATION

**EPA Registration No.** 432-1561  
**US Federal Regulations**  
**TSCA list**  
Lignosulfonic acid, sodium salt, 68512-34-5  
sulfomethylated  
Sodium lignosulphonate 8061-51-6  
Sucrose 57-50-1  
**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**  
Not applicable.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

chlorsulfuron 64902-72-3 25000lbs

**US States Regulatory Reporting**  
**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

**US State Right-To-Know Ingredients**

chlorsulfuron	64902-72-3	NJ
Sucrose	57-50-1	MN, RI

### EPA/FIFRA Information:

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. Following is the hazard information required on the pesticide label:

**Signal word:** Caution!

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

## SECTION 16: OTHER INFORMATION

### Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number

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CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

**NFPA 704 (National Fire Protection Association):**

Health - 1      Flammability - 1      Instability - 0      Others - none

**HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)**

Health - 1      Flammability - 1      Physical Hazard - 0      PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

**Reason for Revision:** The following sections have been revised: Section 14: Transport Information.

**Revision Date:** 03/20/2019

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

# SAFETY DATA SHEET

Lock Down™ Herbicide



## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Lock Down™ Herbicide  
**EPA Reg. No.:** 71368-103  
**Product Type:** Herbicide  
**Company Name:** Nufarm Americas, Inc.  
11901 S. Austin Avenue  
Alsip, IL 60803  
1-800-345-3330  
**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 1-877-325-1840

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

### HEALTH HAZARDS:

Acute toxicity, inhalation  
Reproductive toxicity

Category 4

Category 2

### ENVIRONMENTAL HAZARDS:

None

### SIGNAL WORD:

WARNING

### HAZARD STATEMENTS:

Harmful if inhaled. Suspected of damaging fertility or the unborn child



### PRECAUTIONARY STATEMENTS

Avoid breathing dust, mists, vapors or spray. Use only outdoors or in a well-ventilated area.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell. See product label and Section 4 for emergency medical advice/attention.

If exposed or concerned: Get medical advice or attention.

Store locked up.

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

### Hazards not otherwise classified (HNOC) Other Information

Toxic to aquatic life with long lasting effects.

<5% of the mixture consists of ingredient(s) of unknown toxicity

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Lock Down™ Herbicide

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Flumioxazin	103361-09-7	51
Kaolin clay	1332-58-7	16
Ammonium sulfate	7783-20-2	20
Other Ingredients	Trade Secret	32

**Synonyms:** Flumioxazin

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. Call a poison control center or doctor for treatment advice.

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

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. 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 Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

## 5. FIRE FIGHTING MEASURES

**Extinguishing Media:** Water fog, carbon dioxide, foam, dry chemical.

**Fire Fighting Instructions:** Will not burn but if involved in a toxic fumes may be evolved. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. DO not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and firefighting equipment before reuse. Read the entire document.

**Hazardous Decomposition Products:** Normal combustion forms carbon dioxide, water vapor and may produce: Nitrogen compoundsw Fluorine compounds. Incomplete combustion can produce carbon monoxide.

## 6. ACCIDENTAL RELEASE MEASURES

**For Spills on Land:**

**Containment:** Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

**Cleanup:** Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container.

Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

**For Spills in Water:**

**Containment:** This material will disperse or dissolve in water. Stop the source of the release. Contain and

isolate to prevent further release into soil, surface water and ground water.

**Cleanup:** Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

## 7. HANDLING AND STORAGE

**HANDLING:** Do not contaminate food or feed. Do not put material into food or drink containers. Do not dilute material in food or drink containers. Users should wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet.

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Lock Down™ Herbicide

**STORAGE:** Keep pesticide in original container only. Store in a cool, dry place, out of direct sunlight. Do not store or transport near food or feed. Not for use or storage in or around the home.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Eye/Face Protection:** Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

**Skin & Hand Protection:** Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including long pants, long-sleeved shirt and shoes plus socks and chemical-resistant gloves. Remove contaminated clothing. Wash before reuse.

**Respiratory Protection:** Use this material only in well ventilated areas. If ventilation is not adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

**Exposure Guidelines:**

Component	OSHA		ACGIH	
	TWA	STEL	TWA	STEL
Flumioxazin	NE	NE	NE	NE
Kaolin clay	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup>	NE	2 mg/m <sup>3</sup> (respirable fraction)	NE
Ammonium sulfate	NE	NE	NE	NE
Other Ingredients	NE	NE	NE	NE

NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Light brown solid granules
<b>Odor:</b>	Slight
<b>Odor threshold:</b>	No data available
<b>pH:</b>	5.4 (25°C 1% suspension)
<b>Melting point/freezing point:</b>	No data available
<b>Initial boiling point and boiling range</b>	No data available
<b>Flash point:</b>	No data available
<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>	30.8 lb. ft. <sup>3</sup>
<b>Solubility(ies):</b>	Dispersible
<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>	No data available

**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:** No data available.

**Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** None under normal processing.

**Conditions to Avoid:** Extremes of temperature and direct sunlight.

**Incompatible Materials:** May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products:** None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****Symptoms of Exposure:**

**Eye Contact:** Mildly irritating based on toxicity studies.

**Skin Contact:** Minimally toxic and slightly irritating based on toxicity studies.

**Ingestion:** Slightly toxic if ingested based on toxicity studies.

**Inhalation:** Low inhalation toxicity based on toxicity studies.

**Toxicological Data:**

Data from laboratory studies conducted are summarized below:

**Oral:** Rat LD<sub>50</sub>: > 5,000 mg/kg

**Dermal:** Rat LD<sub>50</sub>: >2,000 mg/kg

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >2.18 mg/L

**Eye Irritation:** Brief and/or minor irritation

**Skin Irritation:** Brief and/or minor irritation

**Skin Sensitization:** Probable non-sensitizer

**Subchronic (Target Organ) Effects:** Compound related effects of Flumioxazin Technical noted in rats following subchronic exposures at high dose levels were hematotoxicity including anemia, and increases in liver, spleen, heart, kidney and thyroid weights. In dogs, the effects produced at high dose levels included a slight prolongation in activated partial thromboplastin time, increased cholesterol and phospholipid, elevated alkaline phosphatase, increased liver weights and histological changes in the liver. The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.

**Chronic/Carcinogenicity:** In a one year dog feeding study, Flumioxazin Technical produced treatment-related changes in blood chemistry and increased liver weights at 100 and 1000 mg/kg/day. Minimal treatment-related histological changes were noted in the livers of animals in the 1000 mg/kg/day group. Based on these data the NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months produced liver changes in mice of the 3000 and 7000 ppm groups. There was no evidence of any treatment-related oncogenic effect. The NOEL for this study is 300 ppm. Dietary administration of Flumioxazin Technical for 24 months produced anemia and chronic nephropathy in rats of the 500 and 1000 ppm groups. The anemia lasted throughout the treatment period, however, it was not progressive nor aplastic in nature. No evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

**Developmental Toxicity:** Flumioxazin Technical produces developmental toxicity in rats in the absence of maternal toxicity at doses of 30 mg/kg/day by the oral route and 300 mg/kg/day by the dermal route. The developmental effects noted consisted primarily of decreased number of live fetuses and fetal weights, cardiovascular abnormalities, wavy ribs and decreased number of ossified sacrococcygeal vertebral bodies. The developmental NOEL in the rat oral and dermal developmental toxicity studies were 10 and 100 mg/kg/day, respectively. The response in rabbits was very different from that in rats. No developmental toxicity was noted in rabbits at doses up to 3000 mg/kg/day, a dose well above the maternal NOEL of 1000 mg/kg/day. Mechanistic studies indicate that the effects seen in the rat are highly unlikely to occur in the human and that flumioxazin would not be a developmental toxicant in the human.

**Reproduction:** Reproductive toxicity was observed in F1 males, P1 females and F1 females at 300 ppm Flumioxazin Technical, the highest dose tested and a dose that also produced signs of systemic toxicity. Toxicity was also observed in the F1 and F2 offspring at doses of 200 ppm and greater.

**Mutagenicity:** Flumioxazin Technical was not mutagenic in most *in vitro* assays: gene mutation and a chromosome aberration assay in the absence of metabolic activation. In three *in vivo* assays, chromosome aberration, unscheduled DNA synthesis and micronucleus assay, Flumioxazin Technical was not mutagenic. The only positive response was observed in the *in vitro* chromosome aberration assay in the presence of metabolic activation. Overall, Flumioxazin Technical does not present a genetic hazard.

**12. ECOLOGICAL INFORMATION**

**Avian Toxicity:** Based upon EPA designation, Flumioxazin Technical is practically non-toxic to avian species. The following results were obtained from studies with Flumioxazin

**SAFETY DATA SHEET****Technical:**

Oral LD<sub>50</sub> bobwhite quail: greater than 2250 mg/kg  
 Dietary LC<sub>50</sub> bobwhite quail: greater than 5620 ppm  
 Dietary LC<sub>50</sub> mallard duck: greater than 5620 ppm.  
 Flumioxazin Technical in the diet. In mallard ducks, a slight, but not statistically significant reduction in hatchlings and 14-day old survivors was observed. Based on a possible, slight effect on egg production at 500 ppm, the NOEL for this study was 250 ppm.

**Aquatic Organism Toxicity:** Based upon EPA designation, Flumioxazin Technical is slightly to moderately toxic to freshwater fish; moderately toxic to freshwater invertebrates; moderately toxic to estuarine/marine fish and moderately to highly toxic to estuarine/marine invertebrates, based on the following tests:

96-hour LC <sub>50</sub> rainbow trout:	2.3 mg/L
96-hour LC <sub>50</sub> bluegill sunfish:	> 21 mg/L
48-hour LC <sub>50</sub> Daphnia magna:	> 5.5 mg/L
96-hour LC <sub>50</sub> sheepshead minnow:	> 4.7 mg/L
96-hour (shell deposition) EC <sub>50</sub> eastern oyster:	2.8 mg/L
96-hour LC <sub>50</sub> mysid shrimp:	0.23 mg/L
Fish early life-stage (rainbow trout): NOEC	>7.7 µg/L, <16 µg/L
Chronic toxicity (mysid shrimp): NOEC	>15 µg/L, <27 µg/L
Chronic toxicity (Daphnia magna): NOEC	>52 µg/L, <99 µg/L.

**Other Non-Target Organisms Toxicity:**

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC<sub>50</sub> in bees was greater than 105 µg/bee.

**13. DISPOSAL CONSIDERATIONS****Waste Disposal Method:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Triple rinse container (or equivalent) promptly after emptying. 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.

**Disposal Methods:** Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

**14. TRANSPORTATION INFORMATION****DOT**

Not Regulated

**IMDG**

UN 3077, Environmentally Hazardous Substance, Solid, N.O.S. (flumioxazin), Marine pollutant

**IATA**

UN 3077 Environmentally Hazardous Substance, Solid, N.O.S. (Flumioxazin), 9, III, Marine Pollutant  
**REMARKS:** Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations -- see UN Special Provision 375.

**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.

**CAUTION.** Harmful if inhaled or absorbed through the skin. Avoid breathing dust or spray mist. Avoid contact with eyes, skin and clothing. Causes moderate eye irritation. Keep out of reach of children.

# SAFETY DATA SHEET

Lock Down™ Herbicide

## 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):**

Immediate, Chronic

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

None

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

None

**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.

## 16. OTHER INFORMATION

**National Fire Protection Association (NFPA) Hazard Rating:**

**Rating for this product:** Health: 1 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.

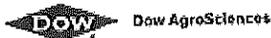
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**Date of Issue:**

March 13, 2017

**Supersedes:**

July 20, 2015



# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

Product name: MILESTONE™ Herbicide

Issue Date: 05/26/2015  
Print Date: 05/26/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

### 1. IDENTIFICATION

Product name: MILESTONE™ Herbicide

Recommended use of the chemical and restrictions on use  
Identified uses: End use herbicide product

**COMPANY IDENTIFICATION**  
DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

Customer Information Number:

800-992-5994  
[info@dow.com](mailto:info@dow.com)

**EMERGENCY TELEPHONE NUMBER**  
24-Hour Emergency Contact: 800-992-5994  
Local Emergency Contact: 352-323-3500

### 2. HAZARDS IDENTIFICATION

**Hazard classification**

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

**Other hazards**  
no data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Aminopyralid Triisopropanolamine Salt	566191-89-7	40.6%

Triisopropanolamine	122-20-3	1.5%
Balance	Not available	57.9%

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#### 4. FIRST AID MEASURES

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##### Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** 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.

**Eye contact:** Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

##### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

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#### 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** no data available

##### Special hazards arising from the substance or mixture

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

**Conditions for safe storage:** Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Triisopropanolamine	Dow IHG	TWA	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields).

**Skin protection**

**Hand protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Other protection:** No precautions other than clean body-covering clothing should be needed.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance</b>	
<b>Physical state</b>	Liquid.
<b>Color</b>	Brown
<b>Odor</b>	Mild
<b>Odor Threshold</b>	no data available
<b>pH</b>	7.3 <i>pH Electrode</i>
<b>Melting point/range</b>	Not applicable
<b>Freezing point</b>	< -10 °C ( < 14 °F)
<b>Boiling point (760 mmHg)</b>	no data available
<b>Flash point</b>	<b>closed cup</b> > 100 °C ( > 212 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	no data available
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Vapor Pressure</b>	no data available
<b>Relative Vapor Density (air = 1)</b>	no data available
<b>Relative Density (water = 1)</b>	1.14 at 20 °C (68 °F)
<b>Water solubility</b>	Soluble
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	none below 400 degC
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	12.2 cP at 20 °C (68 °F) <i>EPA OPPTS 830.7100 (Viscosity)</i>
<b>Kinematic Viscosity</b>	no data available
<b>Explosive properties</b>	no data available
<b>Oxidizing properties</b>	no data available

<b>Liquid Density</b>	1.140 g/cm <sup>3</sup> at 20 °C (68 °F) <i>Digital density meter</i>
<b>Molecular weight</b>	no data available
<b>Surface tension</b>	54.4 mN/m at 20 °C (68 °F)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Thermally stable at typical use temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Some components of this product can decompose at elevated temperatures.

**Incompatible materials:** Avoid contact with: Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product:

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.79 mg/l

### Skin corrosion/irritation

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

Essentially nonirritating to eyes.  
Corneal injury is unlikely.

**Sensitization**

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

For similar active ingredient(s). Aminopyralid. Did not cause cancer in laboratory animals.

**Teratogenicity**

Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

For similar active ingredient(s). Aminopyralid. In animal studies, did not interfere with reproduction.

**Mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 360 mg/l, OECD Test  
Guideline 203 or Equivalent

LC50, *Cyprinodon variegatus* (sheepshead minnow), static test, 96 Hour, > 100 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, > 460 mg/l

LC50, saltwater mysid *Mysidopsis bahia*, static test, 96 Hour, > 104 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).  
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50, Colinus virginianus (Bobwhite quail), > 21422mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail), > 10,000 ppm

oral LD50, Apis mellifera (bees), > 460micrograms/bee

contact LD50, Apis mellifera (bees), > 460micrograms/bee

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, survival, > 10,000 mg/kg

**Persistence and degradability**

**Aminopyralid Triisopropanolamine Salt**

**Biodegradability:** For similar material(s): Aminopyralid. Material is not readily biodegradable according to OECD/EEC guidelines.

**Triisopropanolamine**

**Biodegradability:** Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Biodegradation rate may increase in soil and/or water with acclimation. Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** 0 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

**Theoretical Oxygen Demand:** 2.35 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitizer:** OH radicals

**Atmospheric half-life:** 3 Hour

**Method:** Estimated.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Aminopyralid Triisopropanolamine Salt**

**Bioaccumulation:** For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Triisopropanolamine**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** -0.015 at 23 °C Measured  
**Bioconcentration factor (BCF):** < 0.57 Fish. 42 d Measured

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Aminopyralid Triisopropanolamine Salt**

For similar active ingredient(s).

Aminopyralid.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Triisopropanolamine**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** 10 Estimated.

**Balance**

No relevant data found.

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### **13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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### **14. TRANSPORT INFORMATION**

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DOT

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Not regulated for transport  
Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

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.

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## **15. REGULATORY INFORMATION**

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### **OSHA Hazard Communication Standard**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

No SARA Hazards

### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

### **Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

#### **Components**

#### **CASRN**

Triisopropanolamine

122-20-3

### **Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### **United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

### **Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-519

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. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation

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**16. OTHER INFORMATION**

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**Hazard Rating System**

**NFPA**

Health	Fire	Reactivity
1	1	0

**Revision**

Identification Number: 101209315 / A211 / Issue Date: 05/26/2015 / Version: 9.0

DAS Code: GF-871

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time Weighted Average (TWA):

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

# SureGuard™ Herbicide



## Safety Data Sheet - GHS

### 1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: SureGuard™ Herbicide  
VC NUMBER(S): 1420  
PRODUCT CODE: 88504  
EPA REGISTRATION NUMBER: 59639-120

PRODUCT DESCRIPTION: Herbicide

**MANUFACTURER/DISTRIBUTOR**  
VALENT U.S.A. CORPORATION  
P.O. Box 8025  
1600 Riviera Avenue, Suite 200  
Walnut Creek, CA 94596-8025

**EMERGENCY TELEPHONE NUMBERS**  
HEALTH EMERGENCY OR SPILL (24 hr):  
(800) 892-0099  
TRANSPORTATION (24 hr.): CHEMTREC  
(800) 424-9300 or (202) 483-7616

**PRODUCT INFORMATION**  
PROFESSIONAL PRODUCTS: (800) 898-2536

The current SDS is available through our website ([www.valent.com](http://www.valent.com)), or by calling the product information numbers listed above.

### 2. HAZARDS IDENTIFICATION

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

**Classification** - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Reproductive toxicity	Category 2

#### Label elements

#### EMERGENCY OVERVIEW

#### WARNING

## SureGuard™ Herbicide

**Hazard statements**

Harmful if inhaled  
May damage fertility or the unborn child

**Precautionary statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area

**Response**

IF exposed or concerned: Get medical advice/attention

**Eyes** None.

**Skin** None.

**Inhalation** IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

**Ingestion** None.

**FIRE** None.

**Spill** None.

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****Other Information**

- Toxic to aquatic life with long lasting effects
- <5% of the mixture consists of ingredient(s) of unknown toxicity

For information on Transportation requirements see Section 14.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight/ Percent	TRADE SECRET
Flumioxazin	103361-09-7	51	
Kaolin clay	1332-58-7	16	
Ammonium sulfate	7783-20-2	20	
Others	Various CAS#s	32	*

\* The chemical name, CAS number and/or exact percentage have been withheld as a trade secret

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**SureGuard™ Herbicide**

Other ingredients, which may be maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling (800) 892-0099 at any time.

#### 4. FIRST AID MEASURES

##### EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

##### EYE CONTACT:

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.

##### SKIN CONTACT:

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.

##### INGESTION:

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 to an unconscious person.

##### INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

##### NOTES TO PHYSICIAN:

None

#### 5. FIRE FIGHTING MEASURES

Flash point °C

Flash point °F

**EXTINGUISHING MEDIA:** Water fog, carbon dioxide, foam, dry chemical

##### NFPA RATING:

Health:	1
Flammability:	1
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

**FIRE FIGHTING INSTRUCTIONS:** Will not burn but if involved in a fire toxic fumes may be evolved. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Normal combustion forms carbon dioxide, water vapor and may produce: Nitrogen compounds Fluorine compounds. Incomplete combustion can produce carbon monoxide.

## 6. ACCIDENTAL RELEASE MEASURES

**VALENT EMERGENCY PHONE NUMBER: (800) 892-0099**  
**CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300**  
**OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

**UN/NA NUMBER:** Not applicable

**EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

### FOR SPILLS ON LAND:

**CONTAINMENT:** Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

**CLEANUP:** Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

### FOR SPILLS IN WATER:

**CONTAINMENT:** This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

**CLEANUP:** Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

## 7. HANDLING AND STORAGE

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

### HANDLING:

Do not contaminate food or feed. Do not put material into food or drink containers. Do not dilute material in food or drink containers. Users should wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet.

### STORAGE:

Keep pesticide in original container only. Store in a cool, dry place, out of direct sunlight. Do not store or transport near food or feed. Not for use or storage in or around the home.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**INFORMATION FOR END USERS**

**EYES & FACE:** Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

**RESPIRATORY PROTECTION:** Use this material only in well ventilated areas. If ventilation is not adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

**SKIN & HAND PROTECTION:** Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including long pants, long-sleeved shirt and shoes plus socks and chemical-resistant gloves. Remove contaminated clothing. Wash before reuse.

**EXPOSURE LIMITS**

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Flumioxazin	None	None	None
Kaolin clay	2 mg/m <sup>3</sup> TWA (respirable fraction)	15 mg/m <sup>3</sup> TWA 5 mg/m <sup>3</sup> TWA	None
Ammonium sulfate	None	None	None
Others	None	None	None

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state: Solid  
 Appearance: Granules  
 Color: Light brown  
 Odor: SLIGHT  
 Odor threshold: No information available

<u>PROPERTIES</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5.4	@ 25°C (1% suspension)
Melting point/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limits	No information available	
Lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	No information available	
Water solubility	Dispersible in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity	Not Applicable	
Explosive properties	No information available	
Oxidizing properties	No information available	
Density	No information available	
Bulk density	30.8 lb.ft. <sup>3</sup>	

**10. STABILITY AND REACTIVITY**

**SureGuard™ Herbicide****Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

Extremes of temperature and direct sunlight.

**Incompatible materials**

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****ACUTE TOXICITY:**

The following information is for the technical material or a similar formulation.

Oral Toxicity LD <sub>50</sub> (rats)	> 5,000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD <sub>50</sub> (rabbits)	> 2,000 mg/kg	EPA Tox Category	III
Inhalation Toxicity LC <sub>50</sub> (rats)	> 2.18	EPA Tox Category	IV
Eye Irritation	Brief and/or minor irritation	EPA Tox Category	III
Skin Irritation	Brief and/or minor irritation	EPA Tox Category	IV
Skin Sensitization	Probable non-sensitizer	EPA Tox Category	Not applicable

**CARCINOGEN CLASSIFICATION**

Chemical Name	IARC	OSHA - Select Carcinogens	NTP Carcinogen List
Flumioxazin	Not listed	Not listed	Not listed
Kaolin clay	Not listed	Not listed	Not listed
Ammonium sulfate	Not listed	Not listed	Not listed
Others	Not listed	Not listed	Not listed

**TOXICITY OF FLUMIOXAZIN TECHNICAL:**

**SUBCHRONIC:** Compound related effects of Flumioxazin Technical noted in rats following subchronic exposures at high dose levels were hematotoxicity including anemia, and increases in liver, spleen, heart, kidney and thyroid weights. In dogs, the effects produced at high dose levels included a slight prolongation in activated partial thromboplastin time, increased cholesterol and phospholipid, elevated alkaline phosphatase, increased liver weights and histological changes in the liver. The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.

**CHRONIC/CARCINOGENICITY:** In a one year dog feeding study, Flumioxazin Technical produced treatment-related changes in blood chemistry and increased liver weights at 100 and 1000 mg/kg/day. Minimal treatment-related histological changes were noted in the livers of animals in the 1000 mg/kg/day group. Based on these data the NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months produced liver changes in mice of the 3000 and 7000 ppm groups. There was no evidence of any treatment-related oncogenic effect. The NOEL for this study is 300 ppm. Dietary administration of Flumioxazin Technical for 24 months produced anemia and chronic nephropathy in rats of the 500 and 1000 ppm groups. The anemia lasted throughout the treatment period, however, it was not progressive nor aplastic in nature. No evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

**DEVELOPMENTAL TOXICITY:** Flumioxazin Technical produces developmental toxicity in rats in the absence of maternal toxicity at doses of 30 mg/kg/day by the oral route and 300 mg/kg/day by the dermal route. The developmental effects noted consisted primarily of decreased number of live fetuses and fetal weights, cardiovascular abnormalities, wavy ribs and decreased number of ossified sacrococcygeal vertebral bodies. The developmental NOEL in the rat oral and dermal developmental toxicity studies were 10 and 100 mg/kg/day, respectively. The response in rabbits was very different from that in rats. No developmental toxicity was noted in rabbits at doses up to 3000 mg/kg/day, a dose well above the maternal NOEL of 1000 mg/kg/day.

Mechanistic studies indicate that the effects seen in the rat are highly unlikely to occur in the human and that flumioxazin would not be a developmental toxicant in the human.

**REPRODUCTION:** Reproductive toxicity was observed in F1 males, P1 females and F1 females at 300 ppm Flumioxazin Technical, the highest dose tested and a dose that also produced signs of systemic toxicity. Toxicity was also observed in the F1 and F2 offspring at doses of 200 ppm and greater.

**MUTAGENICITY:** Flumioxazin Technical was not mutagenic in most *in vitro* assays: gene mutation and a chromosome aberration assay in the absence of metabolic activation. In three *in vivo* assays, chromosome aberration, unscheduled DNA synthesis and micronucleus assay, Flumioxazin Technical was not mutagenic. The only positive response was observed in the *in vitro* chromosome aberration assay in the presence of metabolic activation. Overall, Flumioxazin Technical does not present a genetic hazard.

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

## 12. ECOLOGICAL INFORMATION

### AVIAN TOXICITY:

Based upon EPA designation, Flumioxazin Technical is practically non-toxic to avian species. The following results were obtained from studies with Flumioxazin Technical:

Oral LD<sub>50</sub> bobwhite quail: greater than 2250 mg/kg  
 Dietary LC<sub>50</sub> bobwhite quail: greater than 5620 ppm  
 Dietary LC<sub>50</sub> mallard duck: greater than 5620 ppm.

Flumioxazin Technical in the diet. In mallard ducks, a slight, but not statistically significant reduction in hatchlings and 14-day old survivors was observed. Based on a possible, slight effect on egg production at 500 ppm, the NOEL for this study was 250 ppm.

**AQUATIC ORGANISM TOXICITY:** Based upon EPA designation, Flumioxazin Technical is slightly to moderately toxic to freshwater fish; moderately toxic to freshwater invertebrates; moderately toxic to estuarine/marine fish and moderately to highly toxic to estuarine/marine invertebrates, based on the following tests:

- 96-hour LC<sub>50</sub> rainbow trout: 2.3 mg/L
- 96-hour LC<sub>50</sub> bluegill sunfish: greater than 21 mg/L
- 48-hour LC<sub>50</sub> Daphnia magna: greater than 5.5 mg/L
- 96-hour LC<sub>50</sub> sheepshead minnow: greater than 4.7 mg/L
- 96-hour (shell deposition) EC<sub>50</sub> eastern oyster: 2.8 mg/L
- 96-hour LC<sub>50</sub> mysid shrimp: 0.23 mg/L
- Fish early life-stage (rainbow trout): NOEC >7.7 µg/L, <16 µg/L
- Chronic toxicity (mysid shrimp): NOEC >15 µg/L, <27 µg/L
- Chronic toxicity (Daphnia magna): NOEC >52 µg/L, <99 µg/L.

**OTHER NON-TARGET ORGANISM TOXICITY:**

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC<sub>50</sub> in bees was greater than 105 µg/bee.

**13. DISPOSAL CONSIDERATIONS**

**END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.**

**PRODUCT DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Triple rinse container (or equivalent) promptly after emptying. 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.

**DISPOSAL METHODS:** Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

**14. TRANSPORTATION INFORMATION**

**DOT (ground) SHIPPING NAME:** Not regulated for domestic ground transport by US DOT or Canada TDG.  
**EMERGENCY RESPONSE** Not Applicable  
**GUIDEBOOK NO.:**

**ICAO/IATA SHIPPING NAME:** UN 3077 Environmentally Hazardous Substance, Solid, N.O.S. (Flumioxazin), 9, III, Marine Pollutant

**REMARKS:** Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations -- see UN Special Provision 375.

**IMDG SHIPPING NAME:** UN 3077, Environmentally Hazardous Substance, Solid, N.O.S. (flumioxazin), Marine pollutant

**EMS NO.:** F-A, S-F

**15. REGULATORY INFORMATION**

**EPA-FIFRA LABEL INFORMATION THAT DIFFERS FROM OSHA-GHS REQUIREMENTS:**

**SureGuard™ Herbicide**

Pesticide products in the U.S. are registered by the EPA under FIFRA and are subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

**EPA FIFRA SIGNAL WORD: CAUTION**

- *Harmful if inhaled or absorbed through skin.*
- *Avoid breathing dust or spray mist*
- *Avoid contact with eyes, skin and clothing*
- *Causes moderate eye irritation*
- *Keep out of reach of children.*

**PESTICIDE REGULATIONS:** All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**U.S. FEDERAL REGULATIONS:** Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

**Kaolin clay** Present  
TSCA Inventory List -

**SARA (311, 312):**  
Immediate Health: Yes  
Chronic Health: Yes  
Fire: No  
Sudden Pressure: No  
Reactivity: No

**STATE REGULATIONS:** Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

**Kaolin clay**  
MA Right To Know Present  
NJ Right To Know 4016  
PA Right To Know Present  
RI Right To Know Listed  
MN Hazardous Substance Present  
**Ammonium sulfate**  
PA Right To Know Environmental hazard

**SureGuard™ Herbicide**

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

<b>16. OTHER INFORMATION</b>
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<b>REASON FOR ISSUE:</b>	Revision to Sections 2 and 11. Minor edits throughout.
<b>SDS NO.:</b>	0172
<b>EPA REGISTRATION NUMBER:</b>	59639-120
<b>REVISION NUMBER:</b>	3
<b>REVISION DATE:</b>	11/21/2016
<b>SUPERCEDES DATE:</b>	11/21/2016
<b>RESPONSIBLE PERSON(S):</b>	Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

The information provided in this Safety Data Sheet (SDS) is provided in good faith and believed to be accurate at the time of preparation of the SDS. However, to the extent consistent with applicable law, Valent U.S.A. Corporation and its subsidiaries or affiliates extend no warranties, make no representations, and assume no responsibility as to the accuracy, suitability, or completeness of such information. Additionally, to the extent consistent with applicable law, neither Valent U.S.A. Corporation nor any of its subsidiaries or affiliates represents or guarantees that this information or product may be used without infringing the intellectual property rights of others. Except to the extent a particular use and particular information are expressly stated on the product label, it is the users' own responsibility to determine the suitability of this information for their own particular use of this product. If necessary, contact Valent U.S.A. Corporation to confirm that you have the most current product label and SDS.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABEL (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 as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom").

The product label provides information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products is regulated by the EPA under the authority of FIFRA through the product label. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label. It is a violation of federal law to use an EPA-registered pesticide product in any manner inconsistent with its labeling.

2016 Valent U.S.A. Corporation

Emergency Telephone:	(800) 892-0099
REVISION NUMBER:	3

SDS NO.:	0172
REVISION DATE:	11/21/2016

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** VISTA™ XRT Herbicide

**Issue Date:** 05/15/2015  
**Print Date:** 05/21/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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### 1. IDENTIFICATION

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**Product name:** VISTA™ XRT Herbicide

**Recommended use of the chemical and restrictions on use**  
**Identified uses:** End use herbicide product

**COMPANY IDENTIFICATION**  
DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994  
[info@dow.com](mailto:info@dow.com)

**EMERGENCY TELEPHONE NUMBER**  
**24-Hour Emergency Contact:** 800-992-5994  
**Local Emergency Contact:** 352-323-3500

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### 2. HAZARDS IDENTIFICATION

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**Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Eye irritation - Category 2A

Skin sensitisation - Category 1

Reproductive toxicity - Category 1B

**Label elements**

**Hazard pictograms**



Signal word: **DANGER!**

**Hazards**

May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May damage fertility or the unborn child.

**Precautionary statements**

**Prevention**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 Wash skin thoroughly after handling.  
 Contaminated work clothing should not be allowed out of the workplace.  
 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF ON SKIN: Wash with plenty of soap and water.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed or concerned: Get medical advice/ attention.  
 If skin irritation or rash occurs: Get medical advice/ attention.  
 If eye irritation persists: Get medical advice/ attention.  
 Wash contaminated clothing before reuse.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

no data available

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Fluroxypyr 1-methylheptyl ester	81406-37-3	45.52%
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	>= 0.7 - <= 2.6 %
N-Methyl-2-pyrrolidone	872-50-4	0.1%
Balance	Not available	>= 51.8 - <= 53.7 %

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## 4. FIRST AID MEASURES

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### Description of first aid measures

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Skin contact may aggravate preexisting dermatitis.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

### Special hazards arising from the substance or mixture

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen fluoride. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Fluroxypyr 1-methylheptyl ester	Dow IHG	TWA	10 mg/m <sup>3</sup>
N-Methyl-2-pyrrolidone	US WEEL	TWA	10 ppm
	US WEEL	TWA	Absorbed via skin

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical state

Liquid.

Color

Yellow

Odor	Spicy
Odor Threshold	No test data available
pH	4.58 1% ASTM E70
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	<b>closed cup</b> > 100 °C (> 212 °F) ASTM D3278
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.05
Water solubility	emulsifiable
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	358 °C (676 °F) EC Method A15
Decomposition temperature	No test data available
Dynamic Viscosity	28.2 mPa.s at 40 °C (104 °F) OECD 114
Kinematic Viscosity	No test data available
Explosive properties	No EEC A14
Oxidizing properties	no data available
Liquid Density	1.05 g/cm <sup>3</sup> at 20 °C (68 °F) OECD 109
Molecular weight	No test data available
Surface tension	32 mN/m at 25 °C (77 °F) EC Method A5

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. STABILITY AND REACTIVITY

**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Unstable at elevated temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible materials:** None known.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to:

Hydrogen chloride. Hydrogen fluoride. Nitrogen oxides. Toxic gases are released during decomposition.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, female, > 5,000 mg/kg No deaths occurred at this concentration.

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rat, male and female, > 5,000 mg/kg No deaths occurred at this concentration.

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.50 mg/l

### Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.  
May cause drying and flaking of the skin.  
Prolonged contact is essentially nonirritating to skin.

### Serious eye damage/eye irritation

May cause moderate eye irritation.  
May cause slight corneal injury.

### Sensitization

As product:

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

### Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

For the major component(s):

For similar material(s):

In animals, effects have been reported on the following organs:

Kidney.

For the minor component(s):

In animals, effects have been reported on the following organs:

Lung.

Gastrointestinal tract.

Thyroid.

Urinary tract.

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

#### **Carcinogenicity**

For similar active ingredient(s). Fluroxypyr-meptyl. Did not cause cancer in laboratory animals.

#### **Teratogenicity**

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. For the minor component(s): N-methyl pyrrolidone has caused toxic effects to the fetus in laboratory animals at high dose levels with either mild or undetectable maternal toxicity.

#### **Reproductive toxicity**

For the active ingredient(s): In animal studies, did not interfere with reproduction.

#### **Mutagenicity**

As product: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

#### **Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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## **12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

#### **Toxicity**

##### **Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), flow-through test, 96 Hour, 14.3 mg/l, OECD Test Guideline 203

##### **Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 20 mg/l, OECD Test Guideline 202

##### **Acute toxicity to algae/aquatic plants**

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 72 Hour, Growth rate inhibition, 9.6 mg/l, OECD Test Guideline 201

ErC50, *Myriophyllum spicatum*, static test, 14 d, Cell yield inhibition, 0.178 mg/l, OECD Test Guideline 201

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, *Colinus virginianus* (Bobwhite quail), > 2,250 mg/kg

**Toxicity to soil-dwelling organisms**

LC50, *Eisenia fetida* (earthworms), 14 d, survival, > 1,000 mg/kg

**Persistence and degradability**

**Fluroxypyr 1-methylheptyl ester**

**Biodegradability:** Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** 32 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Theoretical Oxygen Demand:** 2.2 mg/mg

**Stability in Water (1/2-life)**

, half-life, 454 d

**Solvent naphtha (petroleum), heavy aromatic**

**Biodegradability:** For similar material(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**N-Methyl-2-pyrrolidone**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 91 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 2.58 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitizer:** OH radicals

**Atmospheric half-life:** 0.486 d

**Method:** Estimated.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Fluroxypyr 1-methylheptyl ester**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 5.04 Measured  
**Bioconcentration factor (BCF):** 26 Oncorhynchus mykiss (rainbow trout) Measured

**Solvent naphtha (petroleum), heavy aromatic**

**Bioaccumulation:** For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**N-Methyl-2-pyrrolidone**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** -0.38 Measured

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Fluroxypyr 1-methylheptyl ester**

Expected to be relatively immobile in soil (Koc > 5000).  
**Partition coefficient(Koc):** 6200 - 43000

**Solvent naphtha (petroleum), heavy aromatic**

No data available.

**N-Methyl-2-pyrrolidone**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.  
Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient(Koc):** 21 Estimated.

**Balance**

No relevant data found.

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### **13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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### **14. TRANSPORT INFORMATION**

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DOT

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Fluroxypyr)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Fluroxypyr
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Fluroxypyr)
UN number	UN 3082
Class	9
Packing group	III

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.

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## 15. REGULATORY INFORMATION

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### OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard  
Chronic Health Hazard

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	CASRN
Solvent naphtha (petroleum), heavy aromatic	64742-94-5

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-586

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. Following is the hazard information as required on the pesticide label:

**WARNING**

Causes substantial but temporary eye injury  
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**16. OTHER INFORMATION**

**Hazard Rating System**

NFPA

Health	Fire	Reactivity
1	1	1

**Revision**

Identification Number: 101188173 / A211 / Issue Date: 05/15/2015 / Version: 4.0

DAS Code: GF-1784

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Absorbed via skin	Absorbed via skin
Dow IHG	Dow Industrial Hygiene Guideline
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

**MONSANTO COMPANY**  
Safety Data Sheet  
Commercial Product

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1. Product identifier

#### Ranger PRO® Herbicide

**1.1.1. Chemical name**  
Not applicable.

**1.1.2. Synonyms**  
None.

**1.1.3. EPA Reg. No.**  
524-517

**1.2. Product use**  
Herbicide

**1.3. Company**  
MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167  
**Telephone:** 800-332-3111, **Fax:** 314-694-5557  
**E-mail:** safety.datasheet@monsanto.com

**1.4. Emergency numbers**  
FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call  
CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or  
Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).  
FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

## 2. HAZARDS IDENTIFICATION

**2.1. Classification**  
OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)  
Acute toxicity, inhalation - Category 4

### 2.2. Label elements

**2.2.1. Signal word**  
WARNING!

**2.2.2. Hazard pictogram/pictograms**



**2.2.3. Hazard statement/statements**  
Harmful if inhaled.

**2.2.4. Precautionary statement/statements**  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.

**2.3. Appearance and odour (colour/form/odour)**

Amber /Liquid / Sweet

**2.4. OSHA Status**

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Refer to section 11 for toxicological and section 12 for environmental information.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Active ingredient**

Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

**Composition**

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	41
Other ingredients		59

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

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**4. FIRST AID MEASURES**

Use personal protection recommended in section 8.

**4.1. Description of first aid measures**

- 4.1.1. **Eye contact:** If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice. Immediately flush with plenty of water.
- 4.1.2. **Skin contact:** 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.
- 4.1.3. **Inhalation:** If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- 4.1.4. **Ingestion:** Call 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 center or doctor. Do not give anything by mouth to an unconscious person.

**4.2. Most important symptoms and effects, both acute and delayed**

- 4.2.1. **Eye contact, short term:** May cause temporary eye irritation.
- 4.2.2. **Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.
- 4.2.3. **Inhalation, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.
- 4.2.4. **Single ingestion:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**4.3. Indication of any immediate medical attention and special treatment needed**

- 4.3.1. **Advice to doctors:** This product is not an inhibitor of cholinesterase.
- 4.3.2. **Antidote:** Treatment with atropine and oximes is not indicated.

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## 5. FIRE-FIGHTING MEASURES

### 5.1. Extinguishing media

5.1.1. **Recommended:** Water, foam, dry chemical, carbon dioxide (CO<sub>2</sub>)

### 5.2. Special hazards

#### 5.2.1. Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.  
Environmental precautions: see section 6.

#### 5.2.2. Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (P<sub>x</sub>O<sub>y</sub>), nitrogen oxides (NO<sub>x</sub>)

5.3. **Fire fighting equipment:** Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

### 5.4. Flash point

Does not flash.

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions

Use personal protection recommended in section 8.

### 6.2. Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

Notify authorities.

### 6.3. Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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## 7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

### 7.1. Precautions for safe handling

When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Thoroughly clean equipment after use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Refer to section 13 of the safety data sheet for disposal of rinse water.

**7.2. Conditions for safe storage**

Minimum storage temperature: -15 °C

Maximum storage temperature: 50 °C

**Compatible materials for storage:** stainless steel, fibreglass, plastic, glass lining

**Incompatible materials for storage:** galvanised steel, unlined mild steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Partial crystallization may occur on prolonged storage below the minimum storage temperature.

If frozen, place in warm room and shake frequently to put back into solution.

Minimum shelf life: 5 years.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1. Airborne exposure limits**

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

**8.2. Engineering controls:** No special requirement when used as recommended.

**8.3. Recommendations for personal protective equipment**

**8.3.1. Eye protection:** If there is significant potential for contact: Wear chemical goggles.

**8.3.2. Skin protection:** No special requirement when used as recommended. If repeated or prolonged contact: Wear chemical resistant gloves.

**8.3.3. Respiratory protection:** No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

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 specifications for the product.

Colour/colour range:	Amber
Odour:	Sweet
Form:	Liquid
Physical form changes (melting, boiling, etc.):	
Melting point:	Not applicable.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.

Oxidizing properties:	No data.
Specific gravity:	1.162 @ 20 °C / 15.6 °C
Vapour pressure:	No significant volatility.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.162 g/cm <sup>3</sup> @ 20 °C
Solubility:	Water: Completely miscible.
pH:	4.4 - 5.0
Partition coefficient:	log Pow: < 0.00

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

### 10.2. Stability

Stable under normal conditions of handling and storage.

### 10.3. Possibility of hazardous reactions

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

### 10.4. Incompatible materials

galvanised steel; unlined mild steel; see section 10.;  
Compatible materials for storage: see section 7.2.

### 10.5. Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

## 11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

**Likely routes of exposure:** Skin contact, eye contact

### Potential health effects

**Eye contact, short term:** May cause temporary eye irritation.

**Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**Inhalation, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**Single ingestion:** Not expected to produce significant adverse effects when recommended use instructions are followed.

Data obtained on similar products and on components are summarized below.

### Similar formulation

#### Acute oral toxicity

**Rat, LD50:** 5,108 mg/kg body weight

Practically non-toxic.

**Acute dermal toxicity**

**Rat, LD50 (limit test):** > 5,000 mg/kg body weight  
Practically non-toxic. No mortality.

**Skin irritation**

**Rabbit, 6 animals, OECD 404 test:**  
Days to heal: 3  
Primary Irritation Index (PII): 0.5/8.0  
Essentially non irritating.

**Eye irritation**

**Rabbit, 6 animals, OECD 405 test:**  
Days to heal: 3  
Slight irritation.

**Acute inhalation toxicity**

**Rat, LC50, 4 hours, aerosol:** 2.9 mg/L  
Other effects: weight loss, breathing difficulty  
Practically non-toxic.

**Skin sensitization**

**Guinea pig, 3-induction Buehler test:**  
Positive incidence: 0 %

**N-(phosphonomethyl)glycine; { glyphosate acid}**

**Genotoxicity**

Not genotoxic.

**Carcinogenicity**

Not carcinogenic in rats or mice. Listed as Category 2A by the International Agency for Research on Cancer (IARC) but our expert opinion is that classification as a carcinogen is not warranted.

**Reproductive/Developmental Toxicity**

Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.  
Reproductive effects in rats only in the presence of significant maternal toxicity.

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## 12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

**Similar formulation**

**Aquatic toxicity, fish**

**Rainbow trout (*Oncorhynchus mykiss*):**  
Acute toxicity, 96 hours, static, LC50: 5.4 mg/L  
Moderately toxic.

**Aquatic toxicity, invertebrates**

**Water flea (*Daphnia magna*):**  
Acute toxicity, 48 hours, static, EC50: 11 mg/L  
Slightly toxic.

**Arthropod toxicity**

**Honey bee (*Apis mellifera*):**  
Oral/contact, 48 hours, LD50: > 100 µg/bee  
Practically non-toxic.

Similar formulation

Aquatic toxicity, algae/aquatic plants

**Green algae (*Selenastrum capricornutum*):**

Acute toxicity, 72 hours, static, EbC50 (biomass): 12.4 mg/L

Slightly toxic.

**Green algae (*Selenastrum capricornutum*):**

Acute toxicity, 72 hours, static, NOEC: 6.3 mg/L

N-(phosphonomethyl)glycine; { glyphosate acid}

Bioaccumulation

**Bluegill sunfish (*Lepomis macrochirus*):**

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

Dissipation

**Soil, field:**

Half life: 2 - 174 days

Koc: 884 - 60,000 L/kg

Adsorbs strongly to soil.

**Water, aerobic:**

Half life: < 7 days

---

## 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### 13.1.1. Product

Excess product may be disposed of by agricultural use according to label instructions. Keep out of drains, sewers, ditches and water ways. Recycle if appropriate facilities/equipment available. Burn in proper incinerator. Follow all local/regional/national/international regulations.

#### 13.1.2. Container

See the individual container label for disposal information. Emptied containers retain vapour and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Empty packaging completely. Triple or pressure rinse empty containers. Do NOT contaminate water when disposing of rinse waters. Ensure packaging cannot be reused. Do NOT re-use containers. Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

---

## 14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

### 14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

Proper Shipping Name (Technical Name if required):	Not regulated for domestic ground transportation. ()
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### 14.2. IMDG Code

Proper Shipping Name	Not regulated for transport under IMO Regulations ()
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(Technical Name if required):	
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**14.3. IATA/ICAO**

Proper Shipping Name (Technical Name if required):	Not regulated for transport under IATA/ICAO Regulations ()
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**15. REGULATORY INFORMATION**

**15.1. Environmental Protection Agency**

**15.1.1. TSCA Inventory**

All components are on the US EPA's TSCA Inventory

**15.1.2. SARA Title III Rules**

Section 311/312 Hazard Categories: Immediate  
Section 302 Extremely Hazardous Substances: Not applicable.  
Section 313 Toxic Chemical(s): Not applicable.

**15.1.3. CERCLA Reportable quantity**

Not applicable.

**15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)**

This chemical is a pesticide product regulated 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.

**CAUTION!**  
**CAUSES EYE IRRITATION**

Acute oral toxicity: FIFRA category IV.  
Acute dermal toxicity: FIFRA category IV.  
Acute inhalation toxicity: FIFRA category IV.  
Skin irritation: FIFRA category IV.  
Eye irritation: FIFRA category III.

**16. OTHER INFORMATION**

The information given here is not necessarily exhaustive but is representative of relevant, reliable data. Follow all local/regional/national/international regulations. Please consult supplier if further information is needed. In this document the British spelling was applied. || Significant changes versus previous edition.

	Health	Flammability	Instability	Additional Markings
NFPA	1	1	1	

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

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.

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, MONSANTO Company or any of its subsidiaries 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 the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries 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 TO THE PRODUCT TO WHICH INFORMATION REFERS.



# Safety Data Sheet

Payload® Herbicide

## 1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: Payload® Herbicide  
EPA REGISTRATION NUMBER: 59639-120  
VC NUMBER(S): 1420  
SYNONYM(S): None  
PRODUCT DESCRIPTION: Herbicide

**MANUFACTURER/DISTRIBUTOR**  
VALENT U.S.A. CORPORATION  
P.O. Box 8025  
1600 Riviera Avenue, Suite 200  
Walnut Creek, CA 94596-8025

**EMERGENCY TELEPHONE NUMBERS**  
HEALTH EMERGENCY OR SPILL (24 hr):  
(800) 892-0099  
TRANSPORTATION (24 hr.): CHEMTREC  
(800) 424-9300 or (202) 483-7616

**PRODUCT INFORMATION**  
AGRICULTURAL PRODUCTS: (800) 682-5368

The current SDS is available through our website ([www.valent.com](http://www.valent.com)), or by calling the product information numbers listed above.

## 2. HAZARDS IDENTIFICATION

For EPA FIFRA-specific information see Section 15

### Classification

Reproductive toxicity

Category 2

### Label elements

### EMERGENCY OVERVIEW

### WARNING



### Hazard statements

Suspected of damaging fertility or the unborn child

Emergency Telephone: (800) 892-0099  
REVISION NUMBER: 2

SDS NO.: 0228  
REVISION DATE: 05/13/2015

**Payload® Herbicide****Precautionary Statements - Prevention**

Read product label prior to using this product. For specific handling instruction refer to Section 7, Handling and Storage

**Precautionary Statements - Response**

See Section 4, First Aid Measures

**Precautionary Statements - Storage**

For information on Storage and Handling see Section 7.

**Precautionary Statements - Disposal**

For further information on product and container disposal see Section 13.

**Hazards not otherwise classified (HNOC)****Other Information**

25% of the mixture consists of ingredient(s) of unknown toxicity

For information on Transportation requirements see Section 14.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS Number	Weight/ Percent	TRADE SECRET
Flumioxazin	103361-09-7	51	
Kaolin clay	1332-58-7	12-17	
Sodium lauryl sulfate	151-21-3	1-4	
Others	Various CAS#s	30-35	

Other ingredients, which may be maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling (800) 892-0099 at any time.

**4. FIRST AID MEASURES****EMERGENCY NUMBER (800) 892-0099**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

**EYE CONTACT:**

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.

**SKIN CONTACT:**

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.

**Payload® Herbicide****INGESTION:**

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.

**INHALATION:**

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**NOTES TO PHYSICIAN:**

None

**5. FIRE FIGHTING MEASURES**

Flash point °C	Not applicable
EXTINGUISHING MEDIA:	Water fog, carbon dioxide, foam, dry chemical
FLAMMABLE LIMITS IN AIR - LOWER (%):	Not applicable
FLAMMABLE LIMITS IN AIR - UPPER (%):	Not applicable

**NFPA RATING:**

Health:	1
Flammability:	1
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

**FIRE FIGHTING INSTRUCTIONS:** Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Normal combustion forms carbon dioxide, water vapor and may produce: Oxides of nitrogen. Combustion may produce toxic: Nitrogen compounds, Fluorine compounds. Incomplete combustion can produce carbon monoxide.

**6. ACCIDENTAL RELEASE MEASURES**

**VALENT EMERGENCY PHONE NUMBER: (800) 892-0099**

**CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300**

**OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

**UN/NA NUMBER:** Not applicable

**EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

**FOR SPILLS ON LAND:**

**CONTAINMENT:** Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

Emergency Telephone: (800) 892-0099  
REVISION NUMBER: 2

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**Payload® Herbicide**

**CLEANUP:** Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

**FOR SPILLS IN WATER:**

**CONTAINMENT:** This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

**CLEANUP:** Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

**7. HANDLING AND STORAGE**

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**HANDLING:**

Keep pesticide in original container. Do not contaminate food or feed. Do not put material into food or drink containers. Do not dilute material in food or drink containers. Users should wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet.

**STORAGE:**

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Store in a cool, dry place, out of direct sunlight. Not for use or storage in or around the home.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**EYES & FACE:** Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

**RESPIRATORY PROTECTION:** Use this material only in well ventilated areas. If ventilation is not adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended. Use this material only in well ventilated areas.

**SKIN & HAND PROTECTION:** Avoid contact with skin or clothing. Skin contact can be minimized by wearing protective clothing including gloves.

**EXPOSURE LIMITS**

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
	None	None	None
Flumioxazin		15 mg/m <sup>3</sup> TWA	None
Kaolin clay	2 mg/m <sup>3</sup> TWA (respirable fraction)	5 mg/m <sup>3</sup> TWA	
Sodium lauryl sulfate	None	None	None
Others	None	None	None

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state**                      Solid

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## Payload® Herbicide

Appearance	Granules	Odor	SLIGHT
Color	Light brown	Odor threshold	No information available

<u>PROPERTIES</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5.4	1% suspension 25°C (1% suspension)
Melting point/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limits	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	No information available	
Water solubility	Dispersible in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	
Density	No information available	
Bulk density	30.8 lb./cu.ft <sup>3</sup>	

## 10. STABILITY AND REACTIVITY

Reactivity  
No data available

Chemical stability  
Stable under recommended storage conditions.

Possibility of Hazardous Reactions  
None under normal processing.

Conditions to avoid  
Extremes of temperature and direct sunlight.

Incompatible materials  
None known based on information supplied.

Hazardous Decomposition Products  
None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

## ACUTE TOXICITY:

Oral Toxicity LD <sub>50</sub> (rats)	> 5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD <sub>50</sub> (rabbits)	> 2000 mg/kg	EPA Tox Category	III

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## Payload® Herbicide

Inhalation Toxicity LC <sub>50</sub> (rats)	0.969 mg/L	EPA Tox Category	III
Eye Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	III
Skin Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

## CARCINOGEN CLASSIFICATION

Chemical Name	IARC	OSHA - Select Carcinogens	NTP Carcinogen List
Flumioxazin	Not listed	Not listed	Not listed
Kaolin clay	Not listed	Not listed	Not listed
Sodium lauryl sulfate	Not listed	Not listed	Not listed
Others	Not listed	Not listed	Not listed

## TOXICITY OF FLUMIOXAZIN TECHNICAL:

**SUBCHRONIC:** Compound related effects of Flumioxazin Technical noted in rats following subchronic exposures at high dose levels were hematotoxicity including anemia, and increases in liver, spleen, heart, kidney and thyroid weights. In dogs, the effects produced at high dose levels included a slight prolongation in activated partial thromboplastin time, increased cholesterol and phospholipid, elevated alkaline phosphatase, increased liver weights and histological changes in the liver. The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.

**CHRONIC/CARCINOGENICITY:** In a one year dog feeding study, Flumioxazin Technical produced treatment-related changes in blood chemistry and increased liver weights at 100 and 1000 mg/kg/day. Minimal treatment-related histological changes were noted in the livers of animals in the 1000 mg/kg/day group. Based on these data the NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months produced liver changes in mice of the 3000 and 7000 ppm groups. There was no evidence of any treatment-related oncogenic effect. The NOEL for this study is 300 ppm. Dietary administration of Flumioxazin Technical for 24 months produced anemia and chronic nephropathy in rats of the 500 and 1000 ppm groups. The anemia lasted throughout the treatment period, however, it was not progressive nor aplastic in nature. No evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

**DEVELOPMENTAL TOXICITY:** Flumioxazin Technical produces developmental toxicity in rats in the absence of maternal toxicity at doses of 30 mg/kg/day by the oral route and 300 mg/kg/day by the dermal route. The developmental effects noted consisted primarily of decreased number of live fetuses and fetal weights, cardiovascular abnormalities, wavy ribs and decreased number of ossified sacrococcygeal vertebral bodies. The developmental NOEL in the rat oral and dermal developmental toxicity studies were 10 and 100 mg/kg/day, respectively. The response in rabbits was very different from that in rats. No developmental toxicity was noted in rabbits at doses up to 3000 mg/kg/day, a dose well above the maternal NOEL of 1000 mg/kg/day.

Mechanistic studies indicate that the effects seen in the rat are highly unlikely to occur in the human and that flumioxazin would not be a developmental toxicant in the human.

**REPRODUCTION:** Reproductive toxicity was observed in F1 males, P1 females and F1 females at 300 ppm Flumioxazin Technical, the highest dose tested and a dose that also produced signs of systemic toxicity. Toxicity was also observed in the F1 and F2 offspring at doses of 200 ppm and greater.

**MUTAGENICITY:** Flumioxazin Technical was not mutagenic in most *in vitro* assays: gene mutation and a chromosome aberration assay in the absence of metabolic activation. In three *in vivo* assays, chromosome aberration, unscheduled DNA synthesis and micronucleus assay, Flumioxazin Technical was not mutagenic. The only positive response was observed in the *in vitro* chromosome aberration assay in the presence of metabolic activation. Overall, Flumioxazin Technical does not present a genetic hazard.

**Payload® Herbicide**

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

## 12. ECOLOGICAL INFORMATION

**AVIAN TOXICITY:**

Based upon EPA designation, Flumioxazin Technical is practically non-toxic to avian species. The following results were obtained from studies with Flumioxazin Technical:

Oral LD<sub>50</sub> bobwhite quail: greater than 2250 mg/kg  
 Dietary LC<sub>50</sub> bobwhite quail: greater than 5620 ppm  
 Dietary LC<sub>50</sub> mallard duck: greater than 5620 ppm.

Flumioxazin Technical in the diet. In mallard ducks, a slight, but not statistically significant reduction in hatchlings and 14-day old survivors was observed. Based on a possible, slight effect on egg production at 500 ppm, the NOEL for this study was 250 ppm.

**AQUATIC ORGANISM TOXICITY:** Based upon EPA designation, Flumioxazin Technical is slightly to moderately toxic to freshwater fish; moderately toxic to freshwater invertebrates; moderately toxic to estuarine/marine fish and moderately to highly toxic to estuarine/marine invertebrates, based on the following tests:

96-hour LC<sub>50</sub> rainbow trout: 2.3 mg/L  
 96-hour LC<sub>50</sub> bluegill sunfish: greater than 21 mg/L  
 48-hour LC<sub>50</sub> Daphnia magna: greater than 5.5 mg/L  
 96-hour LC<sub>50</sub> sheepshead minnow: greater than 4.7 mg/L  
 96-hour (shell deposition) EC<sub>50</sub> eastern oyster: 2.8 mg/L  
 96-hour LC<sub>50</sub> mysid shrimp: 0.23 mg/L  
 Fish early life-stage (rainbow trout): NOEC >7.7 µg/L, <16 µg/L  
 Chronic toxicity (mysid shrimp): NOEC >15 µg/L, <27 µg/L  
 Chronic toxicity (Daphnia magna): NOEC >52 µg/L, <99 µg/L.

**OTHER NON-TARGET ORGANISM TOXICITY:**

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC<sub>50</sub> in bees was greater than 105 µg/bee.

**OTHER ENVIRONMENTAL INFORMATION:**

This product is toxic to non-target plants and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate. Do not apply where weather conditions favor drift from areas treated.

## 13. DISPOSAL CONSIDERATIONS

**END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.**

**PRODUCT DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Payload® Herbicide**

**CONTAINER DISPOSAL:** Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities by burning. If burned, stay out of smoke.

**DISPOSAL METHODS:** Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

### 14. TRANSPORTATION INFORMATION

**DOT (ground) SHIPPING NAME:** Not regulated for domestic ground transport by U.S. DOT  
**EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

**ICAO/IATA SHIPPING NAME:** UN 3077 Environmentally Hazardous Substance, Solid, N.O.S. (Flumioxazin), 9, III, Marine Pollutant  
**REMARKS:** Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations -- see UN Special Provision 375.

**IMDG SHIPPING NAME:** UN 3077, Environmentally Hazardous Substance, Solid, N.O.S. (flumioxazin), Marine pollutant  
**EMS NO.:** F-A, S-F

### 15. REGULATORY INFORMATION

#### EPA-FIFRA LABEL INFORMATION THAT DIFFERS FROM OSHA-GHS REQUIREMENTS:

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

#### EPA FIFRA SIGNAL WORD: CAUTION

- *Harmful if inhaled or absorbed through skin.*
- *Avoid breathing dust or spray mist*
- *Avoid contact with eyes, skin and clothing*
- *Keep out of reach of children.*

**PESTICIDE REGULATIONS:** All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**U.S. FEDERAL REGULATIONS:** Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

<b>Kaolin clay</b> TSCA Inventory List - <b>Sodium lauryl sulfate</b> TSCA Inventory List -	Present  *
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Emergency Telephone: (800) 892-0099  
 REVISION NUMBER: 2

SDS NO.: 0228  
 REVISION DATE: 05/13/2015

**Payload® Herbicide****SARA (311, 312):**

Immediate Health:	Yes
Chronic Health:	Yes
Fire:	No
Sudden Pressure:	No
Reactivity:	No

**STATE REGULATIONS:** Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

**Kaolin clay**

MA Right To Know	Present
NJ Right To Know	4016
PA Right To Know	Present
RI Right To Know	Listed
MN Hazardous Substance	Present

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

<b>16. OTHER INFORMATION</b>
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<b>REASON FOR ISSUE:</b>	Updated information to meet OSHA Hazcom 2012 (GHS) regulations.
<b>SDS NO.:</b>	0228
<b>EPA REGISTRATION NUMBER:</b>	59639-120
<b>REVISION NUMBER:</b>	2
<b>REVISION DATE:</b>	05/13/2015
<b>SUPERCEDES DATE:</b>	05/13/2015
<b>RESPONSIBLE PERSON(S):</b>	Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

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 is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. 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.

**Payload® Herbicide**

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The information in this SDS is based on data available to us as of the revision date given herein, and believed to be correct. Contact Valent U.S.A. Corporation to confirm if you have the most current SDS.

Judgments as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Valent 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.  
2015 Valent U.S.A. Corporation

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Emergency Telephone: (800) 892-0099  
REVISION NUMBER: 2

SDS NO.: 0228  
REVISION DATE: 05/13/2015

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

Product name: TORDON™ 22K Herbicide

Issue Date: 05/14/2015  
Print Date: 06/09/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

### 1. IDENTIFICATION

Product name: TORDON™ 22K Herbicide

**Recommended use of the chemical and restrictions on use**  
**Identified uses:** End use herbicide product

**COMPANY IDENTIFICATION**  
DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994  
[info@dow.com](mailto:info@dow.com)

**EMERGENCY TELEPHONE NUMBER**  
**24-Hour Emergency Contact:** 800-992-5994  
**Local Emergency Contact:** 352-323-3500

### 2. HAZARDS IDENTIFICATION

**Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 4  
Skin sensitisation - Category 1

**Label elements**  
**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Combustible liquid.  
May cause an allergic skin reaction.

**Precautionary statements**

**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/ eye protection/ face protection.

**Response**

IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/ attention.  
Wash contaminated clothing before reuse.  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage**

Store in a well-ventilated place. Keep cool.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Picloram Potassium Salt	2545-60-0	24.4%
Potassium hydroxide	1310-58-3	2.2%
Balance	Not available	73.4%

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**4. FIRST AID MEASURES**

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**Description of first aid measures**

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** 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. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** no data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers,

boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Refer to section 7, Handling, for additional precautionary measures. No smoking in area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Potassium hydroxide	ACGIH	C	2 mg/m <sup>3</sup>

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

Physical state	Liquid.
Color	Brown
Odor	mild, sweet
Odor Threshold	No test data available
pH	7.23 (aqueous 10% slurry)
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	100 °C ( 212 °F)
Flash point	<b>closed cup</b> 88 °C ( 190 °F) <i>Setaflash Closed Cup ASTM D3828</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	22 mmHg at 20 °C (68 °F) Approx.
Relative Vapor Density (air = 1)	1.14
Relative Density (water = 1)	1.16 at 20 °C (68 °F) / 20 °C <i>NAPM 2A.00</i>
Water solubility	water solution
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available

<b>Dynamic Viscosity</b>	< 5 mPa.s at 25.4 °C (77.7 °F)
<b>Kinematic Viscosity</b>	3.88 cSt at 20 °C (68 °F)
<b>Explosive properties</b>	No <i>EEC A14</i>
<b>Oxidizing properties</b>	No significant increase (>5C) in temperature.
<b>Liquid Density</b>	1.163 g/cm <sup>3</sup> at 20 °C (68 °F) <i>Digital density meter</i>
<b>Molecular weight</b>	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** Thermally stable at typical use temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible materials:** Avoid contact with: Oxidizers. Strong acids.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides. Toxic gases are released during decomposition.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rabbit, > 5,000 mg/kg

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed.

As product:  
LC50, Rat, male and female, 4 Hour, Aerosol, > 8.11 mg/l

**Skin corrosion/irritation**

Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause moderate eye irritation.  
Corneal injury is unlikely.

**Sensitization**

Has caused allergic skin reactions when tested in guinea pigs.  
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):  
Repeated exposure did not produce systemic toxicity when applied to the skin of rabbits.

**Carcinogenicity**

For similar active ingredient(s). Picloram acid. Did not cause cancer in laboratory animals.

**Teratogenicity**

For the active ingredient(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

For similar active ingredient(s). Picloram acid. In animal studies, did not interfere with reproduction.

**Mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Acute toxicity to fish**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), flow-through test, 96 Hour, 26 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, eastern oyster (*Crassostrea virginica*), flow-through test, 48 Hour, 18 - 32 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, *Skeletonema costatum*, static test, 120 Hour, 14 mg/l

EC50, diatom *Navicula* sp., Biomass, 3.9 mg/l

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50, *Anas platyrhynchos* (Mallard duck), > 10000mg/kg diet.

dietary LC50, *Colinus virginianus* (Bobwhite quail), 8 d, > 10000mg/kg diet.

contact LD50, *Apis mellifera* (bees), 24 Hour, > 20micrograms/bee

**Toxicity to soil-dwelling organisms**

LC50, *Eisenia fetida* (earthworms), 14 d, > 2,388.89 mg/kg

**Persistence and degradability**

**Picloram Potassium Salt**

**Biodegradability:** For similar active ingredient(s). Picloram. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Biodegradation may occur under aerobic conditions (in the presence of oxygen). Surface photodegradation is expected with exposure to sunlight. Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

**Theoretical Oxygen Demand:** 0.86 mg/mg

**Chemical Oxygen Demand:** 0.64 mg/mg

**Biological oxygen demand (BOD)**

Incubation Time	BOD
20 d	0 %

**Potassium hydroxide**

**Biodegradability:** Biodegradation is not applicable.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Picloram Potassium Salt**

**Bioaccumulation:** For similar active ingredient(s). Picloram. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is very high (Koc between 0 and 50).

**Potassium hydroxide**

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Picloram Potassium Salt**

For similar active ingredient(s).  
Picloram.  
Potential for mobility in soil is very high (Koc between 0 and 50).

**Potassium hydroxide**

No data available for assessment due to technical difficulties with testing.

**Balance**

No relevant data found.

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### **13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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### **14. TRANSPORT INFORMATION**

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DOT		
Proper shipping name		Combustible liquid, n.o.s. (Picloram Potassium Salt Mixture)
UN number		NA 1993
Class		CBL
Packing group		III
Reportable Quantity		Potassium hydroxide

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Picloram Potassium Salt Mixture)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Picloram Potassium Salt Mixture
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.(Picloram Potassium Salt Mixture)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III

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.

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## 15. REGULATORY INFORMATION

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### OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Fire Hazard  
Acute Health Hazard

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Components	CASRN	RQ
Potassium hydroxide	1310-58-3	1000 lbs RQ

### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	CASRN
Potassium hydroxide	1310-58-3

**Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-006  
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. Following is the hazard information as required on the pesticide label:

**CAUTION**

Causes moderate eye irritation  
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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**16. OTHER INFORMATION**

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**Hazard Rating System**

**NFPA**

Health	Fire	Reactivity
1	2	0

**Revision**

Identification Number: 101201631 / A211 / Issue Date: 05/14/2015 / Version: 4.0

DAS Code: XRM-4713

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
C	Ceiling limit

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



# Telar<sup>®</sup> XP

## HERBICIDE

Dry Flowable

Active Ingredient	By Weight
Chlorsulfuron	
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]benzenesulfonamide	75%
Other Ingredients	25%
<b>TOTAL</b>	<b>100%</b>

EPA Reg. No. 432-1561  
EPA Est. No. 352-IL-001  
Nonrefillable Container

### KEEP OUT OF REACH OF CHILDREN CAUTION

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, had someone to explain it to you in detail.)

See inside leaflet for complete First Aid Instructions, Precautionary Statements, Directions for Use and Storage and Disposal Instructions.

Net Weight  
**1 Pound**  
**84062022**  
A01786543 150716AV1

#### USER SAFETY RECOMMENDATIONS

Users should wash hands 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

Do not apply directly to water, or 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.

#### AGRICULTURAL USES

##### 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 is:

Coveralls  
Chemical resistant gloves made of any water proof material  
Shoes plus socks

#### FIRST AID

**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 a poison control center or doctor. Do not give anything to an unconscious person.

**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 further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-334-7577 for emergency medical treatment information.

#### 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, or using tobacco.

##### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some of the 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-resistance category selection chart.

Mixers, loaders, applicators, and other handlers must wear:

Long-sleeved shirt and long pants  
Shoes plus socks

Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

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.

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

##### ENGINEERING CONTROL STATEMENTS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40

CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. **IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

Produced for:  
Bayer Environmental Science  
A Division of Bayer CropScience LP  
2 T. W. Alexander Drive  
Research Triangle Park, NC 27709

Bayer



**Telar<sup>®</sup>**  
**XP**

**HERBICIDE**

Dry Flowable	
Active Ingredient	By Weight
Chlorsulfuron	
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	75%
Other Ingredients	25%
<b>TOTAL</b>	<b>100%</b>
EPA Reg. No. 432-1561	

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

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**

**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 a poison control center or doctor. Do not give anything to an unconscious person.  
**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 further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-334-7577 for emergency medical treatment information.

**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, or using tobacco.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some of the 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-resistance category selection chart.

**Mixers, loaders, applicators, and other handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride

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

**ENGINEERING CONTROL STATEMENTS**

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

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

**USER SAFETY RECOMMENDATIONS**

Users should wash hands 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**

Do not apply directly to water, or 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.

## PRODUCT INFORMATION

Telar® XP Herbicide is a dry flowable that is mixed in water and applied as a spray.

Telar® XP Herbicide is for the control of many invasive and noxious broadleaf weeds in pasture, range, Conservation Reserve Program (CRP) lands, and non-crop industrial sites, including grazed areas on these sites.

These non-crop industrial sites include, industrial sites, banks of dry drainage ditches, airports, military installations, fence rows, roadsides and associated rights-of-way, lumberyards, petroleum tank farms, pipeline and utility rights-of-way, pumping installations, railroads, storage areas, and plant sites, including governmental and private lands.

Telar® XP Herbicide is noncorrosive, nonflammable, nonvolatile and does not freeze.

Telar® XP Herbicide can be applied as a preemergence or postemergence treatment. For best annual weed control, apply Telar® XP Herbicide during early stages of weed growth. The degree and duration of control may depend on the following:

- use rate
- weed spectrum and size at application
- environmental conditions at and following treatment

For control of perennial weeds with Telar® XP Herbicide alone, best results are obtained when weeds are treated in the bud to bloom or fall rosette stage.

This product may be applied on pasture, range, CRP and non-crop 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 management activities. It is permissible to treat intermittent drainage, intermittently flooded low lying sites, seasonably dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded as well as seasonally dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

## Environmental Conditions and Biological Activity

Telar® XP Herbicide is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. Two to 3 weeks after application to weeds, leaf growth slows, and the growing points turn reddish-purple. Within 4 to 6 weeks of application, leaf veins and leaves become discolored, and the growing points subsequently die.

Warm, moist conditions following treatment enhance the effectiveness of Telar® XP Herbicide since moisture carries Telar® XP Herbicide into weed roots, preventing roots from developing. Cold, dry conditions delay the activity of Telar® XP Herbicide. Weeds hardened off by cold weather or drought stress are less susceptible to Telar® XP Herbicide.

Telar® XP Herbicide is safe to labeled grasses under normal conditions. However, grasses that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices may be injured by applications of Telar® XP Herbicide. In addition, different species of grass may be sensitive to treatment with Telar® XP Herbicide under otherwise normal conditions. Application of Telar® XP Herbicide to these species may result in injury.

## RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

## INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

## INVASIVE SPECIES MANAGEMENT

This product may be used on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants. Effective EDRR systems address invasions by eradicating the invader where possible, and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is recommended, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

## 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.

Telar® XP Herbicide must be used only in accordance with instructions on this label or in separately published BAYER CROPSCIENCE LP information.

BAYER CROPSCIENCE LP will not be responsible for losses or damages resulting from the use of this product in any manner not specified by BAYER CROPSCIENCE.

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

## PREPARING FOR USE - Site Specific Considerations

Understanding the risks associated with the application of Telar® XP Herbicide is essential to aid in preventing off-site injury to desirable vegetation and agricultural crops. The risk of off-site movement both during and after application may be affected by a number of site specific factors such as the nature, texture and stability of the soil, the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, drainage patterns, and other local physical and environmental conditions. A careful evaluation of the potential for off-site movement from the intended application site, including movement of treated soil by wind or water erosion, must be made prior to using Telar® XP Herbicide. This evaluation is particularly critical where desirable vegetation or crops are grown on neighboring land for which the use of Telar® XP Herbicide is not labeled. If

prevailing local conditions may be expected to result in off-site movement and cause damage to neighboring desirable vegetation or agricultural crops, do not apply Telar® XP Herbicide.

Before applying Telar® XP Herbicide the user must read and understand all label directions, precautions and restrictions completely, including these instructions or precautions on the label, or are unable to make a site specific evaluation yourself, consult with your local BAYER CROPSCIENCE Crop Protection representative, local agricultural dealer, university cooperative extension service, land manager, professional applicator, agricultural consultant, or other qualified authorities familiar with the area to be treated. If you still have questions regarding the need for site specific considerations please call 1-800-331-2867.

## AGRICULTURAL USES

### 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, is:

- Coveralls
- Chemical resistant gloves made of any water proof material.
- Shoes plus socks.

## APPLICATION INFORMATION FOR PASTURE, RANGE, CONSERVATION RESERVE PROGRAM (CRP)

Telar® XP Herbicide is for the control and suppression of weeds in permanent (non-rotational) pastures, range and CRP lands when applied according to the directions and under the conditions specified on this label. Best results are obtained when perennial weeds are treated in the bud to bloom stage or the fall rosette. Annual weeds are controlled best when treated early in their growth cycles.

Aerial application may be made to range and pasture land, and Conservation Reserve Program (CRP) lands.

There are no grazing or hay harvest restrictions for any livestock, including lactating animals, with application rates up to 1 1/3 ounces/acre of Telar® XP Herbicide. No enclosure is required for any animals.

Do not apply more than 1 1/3 ounces/acre of Telar® XP Herbicide per acre per year.

### APPLICATION RATES

Telar® XP Herbicide may be applied on the the following forage grasses at the use rates shown below:

#### 1/4 to 1 ounce/acre

Bahiagrass	<i>Paspalum notatum</i>
Bermudagrass	<i>Cynodon dactylon</i>
Blue gramma	<i>Bouteloua gracilis</i>
Bluegrass	<i>Poa spp.</i>
Bromegrass (meadow, smooth)	<i>Bromus spp.</i>
Orchardgrass**	<i>Dactylis glomerata</i>
Wheatgrasses (crested, intermediate, pubescent, slender, streambank, tall, thick, spike, western)	<i>Agropyron spp.</i>

#### 1/4 to 1/2 ounce/acre

Bluestems (big, little, plains, sand, ww spar)	<i>Andropogon spp.</i>
Buffalograss	<i>Buchloe dactyloides</i>
Fescue* (tall, Kentucky, hard, creeping)	<i>Festuca spp.</i>
Green needlegrass**	<i>Stipa viridula</i>
Indiangrass	<i>Sorghastrum nutans</i>
Kleingrass**	<i>Panicum coloratum</i>
Lovegrasses (sand, weeping)	<i>Eragrostis spp.</i>
Sideoats gramma	<i>Bouteloua curtipendula</i>
Switchgrass	<i>Panicum virgatum</i>
Wildrye	<i>Elymus spp.</i>

\* Some types of fescue are sensitive. Use rates at the lower end of the rate range.  
\*\* Except California.

Application rates higher than those as specified for specific grasses, up to 1 1/3 ounces/acre, may be made as a spot treatment provided the resulting injury and possible loss of forage can be tolerated by the grower.

### WEEDS CONTROLLED

Refer to the WEEDS CONTROLLED BY Telar® XP Herbicide section of this label for rates to control various weeds.

### IMPORTANT PRECAUTIONS AND RESTRICTIONS

Broadleaf forage species, such as clover and alfalfa, are sensitive to Telar® XP Herbicide and will be severely stunted or injured by Telar® XP Herbicide.

Forage grasses which are under stress from drought, insects, disease, cold temperature, or poor fertility may be injured by Telar® XP Herbicide.

Forage grasses should be well established before applying Telar® XP Herbicide as the newly emerged seedlings of some forage grasses are sensitive to Telar® XP Herbicide.

Telar® XP Herbicide applied before the initiation of flowering may cause the abortion or suppression of seedheads by some cool season grasses.

Varieties and species of forage grasses differ in their tolerance to Telar® XP Herbicide. Ryegrass (perennial and Italian) may be severely injured. Fescues may be temporarily stunted or yellowed. When using Telar® XP Herbicide on a particular grass for the first time, limit the area treated. If no injury occurs, larger areas may be treated in subsequent years.

## NON-AGRICULTURAL USES

### 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. Use on non-crop sites is not within the scope of the Worker Protection Standard.

Do not enter or allow entry into treated areas until sprays have dried.

## APPLICATION INFORMATION FOR NON-CROP SITES

Telar® XP Herbicide is recommended for general weed control on private, public and military lands as follows: non-agricultural areas (such as airports, highway, railroad and utility rights-of way, sewage disposal areas, etc.); uncultivated agricultural areas non-crop producing (such as farmyards, fuel storage areas, fence rows, soil bank land, barrier strips, etc.); industrial sites outdoor (such as lumberyards, pipeline and tank farms, etc.) including grazed areas on these sites.

Application to non-crop sites, except rights-of-way, is restricted to ground application only. Rights-of-way may also be treated by helicopter.

### Application Timing, Rates and Weeds Controlled

Apply Telar® XP Herbicide as a preemergent or early postemergent spray when annual weeds are actively germinating or growing. For control of perennial weeds with Telar® XP Herbicide alone, best results are obtained when weeds are treated in the bud to bloom or fall rosette stage.

- \* Do not apply more than three times per year.
- \* Do not apply more than 2.6 ounces product /acre per year.

## APPLICATION INFORMATION FOR INDUSTRIAL TURF (UNIMPROVED ONLY)

Telar® XP Herbicide is used to control weeds on unimproved industrial turf, on roadsides, and on other non-crop sites.

### Application Timing

Apply Telar® XP Herbicide when desirable grasses are well established, as premature treatment may result in top kill and stand reduction. For best results, treat turf at green-up.

### Application Rates and Weeds Controlled

Refer to the WEEDS CONTROLLED BY Telar® XP Herbicide section below for rates to control various weeds. When applied at lower rates, Telar® XP Herbicide provides short term control of weeds listed; when applied at higher rates, weed control is increased.

Telar® XP Herbicide may be used on the following grasses when applied at the use rates shown below.

**Note:** The higher rates and/or the addition of surfactant may result in temporary chlorosis of desirable grasses.

#### *1/4 to 1 ounce per acre*

Bahiagrass  
 Bermudagrass  
 Blue gramma  
 Bluegrass  
 Bromegrass  
 (meadow, smooth)  
 Orchardgrass  
 Wheatgrasses  
 (crested, intermediate,  
 pubescent, slender,  
 streambank, tall,  
 thick, spike, western)

*Paspalum notatum*  
*Cynodon dactylon*  
*Bouteloua gracilis*  
*Poa spp.*  
*Bromus spp.*

*Dactylis glomerata*  
*Agropyron spp.*

**1/2 ounce per acre**

Bentgrass	<i>Agrostis spp</i>
Bluestems (big, little, plains, sand, ww spar)	<i>Andropogon spp.</i>
Buffalograss	<i>Buchloe dactyloides</i>
Galleta	<i>Hilaria jamesii</i>
Needlegrass, green	<i>Stipa viridula.</i>
Green sprangletop	<i>Leptochloa dubia</i>
Indiangrass	<i>Sorghastrum nutans</i>
Indian ricegrass	<i>Oryzopsis hymenoides</i>
Kleingrass	<i>Panicum coloratum</i>
Lovegrasses	<i>Eragrostis spp.</i>
(sand, weeping)	
Prairie sandreed	<i>Calamovilfa longifolia</i>
Sheep fescue	<i>Festuca ovina</i>
Sideoats gramma	<i>Bouteloua curtipendula</i>
Switchgrass	<i>Panicum virgatum</i>
Wildrye grasses (beardless, Russian)	<i>Elymus spp.</i>

**1/4 to 1/2 ounce per acre**

Fescue	<i>Festuca spp</i>
Smooth brome	<i>Bromus inermis</i>

- \* Do not apply more than three times per year.
- \* Do not apply more than 2.6 ounces product/acre per year.

### APPLICATION INFORMATION FOR GROWTH SUPPRESSION AND SEEDHEAD INHIBITION

Telar® XP Herbicide may be used as a tank mix with other herbicides registered for the use site to suppress grass growth (chemical mowing) and inhibit seedhead formation.

#### Application Timing

Apply Telar® XP Herbicide to turf at green-up and before seed heads emerge (boot stage). Ensure that desirable grasses are well established at application, as premature treatment may result in top kill and stand reduction.

### Application Rates and Weeds Controlled

Refer to the WEEDS CONTROLLED BY Telar® XP Herbicide section below for rates to control various weeds. When applied at lower rates, Telar® XP Herbicide provides short term control of weeds listed; when applied at higher rates, weed control is increased.

Telar® XP Herbicide may be used on the following grasses when applied at the use rates shown below.

**1/4 ounce per acre Telar® XP Herbicide + 1/4 - 1/2 pt per acre "Embark" 2S**

Fescue	<i>Festuca spp</i>
Bluegrass	<i>Poa spp.</i>

**1/2 ounce per acre Telar® XP Herbicide + 1/2 - 1 pt per acre "Embark" 2S (PNW Only)**

Fescue	<i>Festuca spp</i>
Annual bluegrass	<i>Poa annua</i>
Perennial ryegrass	<i>Lolium perenne</i>
Smooth brome	<i>Bromus inermis</i>
Orchardgrass	<i>Dactylis glomerata</i>
Reed canarygrass	<i>Phalaris arundinacea</i>

### IMPORTANT PRECAUTIONS AND RESTRICTIONS (Industrial Turf Only)

- Do not use Telar® XP Herbicide or Telar® XP Herbicide in a tank mix with "Embark" on bahiagrass turf or turf that is under stress from drought, insects, disease, cold temperature, or poor fertility, as injury may result.
- Do not apply Telar® XP Herbicide to turf less than 1 year old.
- Grass seed may be planted in treated areas 6 months after treatment, cultivation is recommended.
- For broadcast applications, do not exceed 1/2 ounce Telar® XP Herbicide per acre within a 12-month period. For those weeds listed under the 1 to 2.6 ounces per acre use rate in the Non-crop, Industrial Sites section of this label, spot treatment (at that rate) can be used. Do not make broadcast applications to turf at 1 to 2.6 ounces per acre as this may cause excessive turf injury.

## WEEDS CONTROLLED BY Telar® XP Herbicide

Telar® XP Herbicide effectively controls the following weeds when applied at the use rates shown. When applied at lower rates, Telar® XP Herbicide provides short term control of weeds listed; when applied at higher rates, weed control is increased.

### 1/4 to 1/2 ounce per acre

Annual sowthistle	<i>Sonchus oleraceus</i>
Blue mustard	<i>Chorispora tenella</i>
Common chickweed	<i>Stellaria media</i>
Common speedwell	<i>Veronica officinalis</i>
Common spikeweed**	<i>Hemizonia pungens</i>
Conical catchfly**	<i>Silene conoidea</i>
Cutleaf eveningprimrose**	<i>Oenothera laciniata</i>
Fiddleneck (tarweed)**	<i>Amsinckia lycopsoides</i>
Field pennycress	<i>Thlaspi arvense</i>
Flixweed	<i>Descurainia sophia</i>
Hempnettle**	<i>Galeopsis</i> spp.
Henbit	<i>Lamium amplexicaule</i>
London rocket**	<i>Sisymbrium irio</i>
Mayweed**	<i>Anthemis cotula</i>
Miner's lettuce**	<i>Montia perfoliata</i>
Pineapple-weed**	<i>Matricaria matricarioides</i>
Prostrate pigweed**	<i>Amaranthus biitoides</i>
Redroot pigweed	<i>Amaranthus retroflexus</i>
Shepherd's purse**	<i>Capsella bursa-pastoris</i>
Smooth pigweed**	<i>Amaranthus chlorostachys</i>
Treacle mustard**	<i>Erysimum</i> spp.
Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>
Wild mustard	<i>Sinapis arvensis</i>

\*\* Except California.

### 1/2 to 1 ounces per acre

Bouncingbet	<i>Saponaria officinalis</i>
Bur beakchervil**	<i>Anthriscus caucalis</i>
Buttercup	<i>Ranunculus</i> spp.
Carolina geranium**	<i>Geranium carolinianum</i>
Common lambsquarter	<i>Chenopodium album</i>
Common sunflower	<i>Helianthus annuus</i>
Dandelion (common)*	<i>Taraxacum officinale</i>
Erect knotweed**	<i>Polygonum erectum</i>
Goldenrod	<i>Solidago</i> spp.
Groundsel (common)**	<i>Senecio vulgaris</i>
Halogeton	<i>Halogeton glomeratus</i>
Musk thistle	<i>Carduus nutans</i>
Sicklepod	<i>Senna obtusifolia</i>
Smallseed falseflax**	<i>Camelina microcarpa</i>
Sweet clover*	<i>Melilotus</i> spp.
Tumble pigweed**	<i>Amaranthus albus</i>
Turkey mullein*	<i>Eremocarpus setigerus</i>
Whitetop (hoary cress)†	<i>Cardaria draba</i>
Wild buckwheat**	<i>Polygonum convolvulus</i>
Wild parsnip	<i>Pastinaca sativa</i>

\* Partial control only.

\*\* Except California.

† Prebloom to bloom and fall rosette.

### 1 to 2.6 ounces per acre

Asters	<i>Aster</i> spp.
Bedstraw*	<i>Galium</i> spp.
Black mustard	<i>Brassica nigra</i>
Bull thistle	<i>Cirsium vulgare</i>
Burclover	<i>Medicago</i> spp.
Canada thistle	<i>Cirsium arvense</i>
Common cinquefoil	<i>Potentilla canadensis</i>
Common mallow	<i>Malva neglecta</i>
Common mullein	<i>Verbascum thapsus</i>
Common ragweed*	<i>Ambrosia elatior</i>
Common tansy	<i>Tanacetum vulgare</i>

(continued)

**1 to 2.6 ounces per acre (continued)**

Common teasel	<i>Dipsacus fullonum</i>
Common yarrow	<i>Achillea millefolium</i>
Corn spurry	<i>Spergula arvensis</i>
Cow cockle	<i>Vaccaria pyramidata</i>
Curly dock	<i>Rumex crispus</i>
Dyer's woad	<i>Isatis tinctoria</i>
False chamomile**	<i>Matricaria maritima</i>
Foxtails*	<i>Setaria spp</i>
Horetail ( <i>Equisetum spp.</i> )	<i>Equisetum spp.</i>
Houndstongue, common	<i>Cynoglossum officinale</i>
Italian ryegrass*	<i>Lolium multiflorum</i>
Marestail/horseweed	<i>Conyza canadensis</i>
Pepperweed**	<i>Lepidium spp.</i>
Pepperweed (perennial)	<i>Lepidium latifolium</i>
Poison-hemlock	<i>Conium maculatum</i>
Prostrate knotweed	<i>Polygonum aviculare</i>
Puncturevine	<i>Tribulus terrestris</i>
Red clover**	<i>Trifolium pratense</i>
Russian knapweed†	<i>Acroptilon repens</i>
Scotch thistle	<i>Onopordum acanthium</i>
Scouringrush	<i>Equisetum hyemale</i>
Sickleweed	<i>Falcaria vulgaris</i>
Spreading orach	<i>Atriplex patula</i>
Tansymustard	<i>Descurainia pinnata</i>
Tansy ragwort**	<i>Senecio jacobaea</i>
White clover	<i>Trifolium repens</i>
Wild carrot	<i>Daucus carota</i>
Wild garlic/ wild onion	<i>Allium vineale</i>
Yellow starthistle*	<i>Centaurea solstitialis</i>

\* Partial control only.

\*\* Except California.

† Prebloom to bloom and fall rosette.

## SPECIFIC WEED PROBLEMS

**Dalmatian Toadflax (*Linaria genistifolia*):** Apply 2 to 2.6 ounces of Telar® XP Herbicide per acre as a high volume foliar spray using a minimum of 24 gallons of water per acre. Use of a surfactant, as directed on this label, is recommended. Fall applications of Telar® XP Herbicide appear to provide the most consistent control.

**Yellow Toadflax (*Linaria vulgaris*):** Apply a minimum of 1.5 ounces of Telar® XP Herbicide per acre.

**Kochia, Russian Thistle, and Prickly Lettuce:** Tank mix Telar® XP Herbicide with herbicides with different modes of action (such as 2,4-D plus dicamba), and apply postemergence before weeds form mature seeds.

**Yellow Starthistle (*Centaurea solstitialis*):** Apply Telar® XP Herbicide at 1/2 to 2.6 ounces per acre in combination with the specified rates of other herbicides registered for this use (such as, "Transline", "Tordon" 22K or 2,4-D). For application method and other use instructions, use the most restrictive directions for the intended use. To improve postemergence control, a spray adjuvant should be added at the manufacturer's specified use rate.

When applied at lower rates, Telar® XP Herbicide provides short term control; when applied at higher rates, weed control spectrum and residual is increased.

**Note:** Do not apply more than 1 1/3 ounces/acre of Telar® XP Herbicide per year in pasture, range and Conservation Reserve Program treated acres.

Rainfall is needed following the application for activation of Telar® XP Herbicide to provide the preemergence control of yellow starthistle. Applications should be made from early emergence to bolting stage of growth.

## TANK MIXTURES

Telar® XP Herbicide may be applied with other herbicides registered for use in pasture, range, Conservation Reserve Program, or non-crop sites. For application method and other use specifications, use the most restrictive directions for the intended combination. Do not tank mix Telar® XP Herbicide with Hyvar® X-L Herbicide.

Always perform a jar test to insure the compatibility of products to be used in tank mixture with Telar® XP Herbicide. Use a clear jar with lid and mix the tank mix ingredients in their relative proportions. The tank mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily mix if agitated. An incompatible mixture is indicated by separation into distinct layers which do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film on the jar.

## GRASS REPLANT INTERVALS

Following an application of Telar® XP Herbicide to non-crop areas, the treated sites may be replanted with various species of grasses at the minimum intervals below.

For soils with a pH of 7.5 or less observe the following replant intervals:

Species	Telar® XP Herbicide Rate ounces/acre	Replant Interval (Months)
Brome, meadow	1/2-1	1
<i>Bromus erectus</i>	1-2	2
Brome, smooth	1/2-1	2
<i>Bromus inermis</i>	1-2	4
Fescue, alta/tail	1/2	2
<i>Festuca arundinacea</i>	1	3
	2	5
Fescue, sheep	1/2-1	2
<i>Festuca ovina</i>	1-2	4
Foxtail, meadow	1/2	3
<i>Alopecurus pratensis</i>	1	4
	2	6
Needlegrass, green	1/2-2	1
<i>Stipa viridula</i>		
Orchardgrass	1/2	2
<i>Dactylis glomerata</i>	1-2	3
Russian wildrye	1/2-2	1
<i>Elymus spp.</i>		
Switchgrass	1/2-2	3
<i>Panicum virgatum</i>		
Timothy	1/2	2
<i>Phleum pratense</i>	1	4
	2	6
Wheatgrass, western	1/2	1
<i>Agropyron smithii</i>	1	2
	2	4

For soils having a pH of 7.5 and greater observe the following minimum replant intervals:

Species	Telar® XP Herbicide Rate ounces/acre	Replant Interval (Months)
Alkali sacaton	1/2	1
<i>Sporobolus airoides</i>	1	3
	2	>3
Bluestern, Big	1/2	3
<i>Andropogon gerardii</i>		
Brome, Mountain	1/2	1
<i>Bromus marginatus</i>	1	2
	2	>3
Gramma, Blue	1/2	1
<i>Bouteloua gracilis</i>	1	2
	2	>3
Gramma, Sideoats	1-2	>3
<i>Bouteloua curtipendula</i>		
Switchgrass	1-2	>3
<i>Panicum virgatum</i>		
Wheatgrass, Bluebunch	1 1/3	1
<i>Agropyron spicatum</i>		
Wheatgrass, Crested	2/3	1
<i>Agropyron cristatum</i>	1 1/3	1
Wheatgrass, Intermediate	1 1/3	1
<i>Agropyron intermedium</i>		
Wheatgrass, Slender	1 1/3	1
<i>Elymus trachycaulum</i>		
Wheatgrass, Siberian	1 1/3	1
<i>Agropyron fragile</i>		
Wheatgrass, Streambank	1 1/3	1
<i>Agropyron riparium</i>		
Wheatgrass, Thickspike	1/2-2	
<i>Agropyron dasystachyum</i>		
Wheatgrass, Western	1/2	1
<i>Agropyron smithii</i>	1	2
	2	4

The minimum intervals are for applications made in the spring to early summer. Because Telar® XP Herbicide degradation is slowed by cold or frozen soils, applications made in the late summer or early fall should consider the intervals as beginning in the spring following treatment.

Testing has indicated that there is a considerable variation in response among the species of grasses when seeded onto areas treated with Telar® XP Herbicide. If species other than those listed above are to be planted into areas treated with Telar® XP Herbicide a field bioassay should be performed, or previous experience may be used to determine the feasibility of replanting treated sites.

## **ADDITIONAL USE INSTRUCTIONS FOR AGRICULTURAL AND NON-AGRICULTURAL USES**

### **SPRAY EQUIPMENT**

Application to non-crop sites, except rights-of-way, is restricted to ground application only, unless otherwise directed by Supplemental or Special Local Need labeling. Rights-of-way may also be treated by helicopter.

In pasture, range or Conservation Reserve Program (CRP), treatments of Telar® XP Herbicide may be applied by either ground equipment, fixed wing aircraft, or helicopter.

Equipment used to apply Telar® XP Herbicide should not be used for applications to crops following a Telar® XP Herbicide application, as low rates of Telar® XP Herbicide may kill or severely injure most crops (except pasture, range, and small grains).

For specific application equipment, refer to the manufacturer's specifications for additional information on GPA, pressure, speed, nozzle types and arrangements, nozzle heights above the target canopy, etc.

Be sure to calibrate air or ground equipment before application. Select a spray volume and delivery system that will ensure a uniform spray pattern and thorough coverage of weed pests. Use higher spray volumes to obtain better coverage when the weed canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, slowing, or stopping to avoid crop injury.

Do not make applications using equipment and/or spray volumes or under weather conditions that might cause spray drift onto nontarget sites. For additional information on spray drift, refer to the Spray Drift Management section of the label.

Continuous agitation is required to keep Telar® XP Herbicide in suspension.

## **GROUND APPLICATION BROADCAST APPLICATION**

Use sufficient spray volume (minimum of 10 gallons per acre) to help provide uniform coverage of the target weeds. For areas with heavy weed infestations, best results are achieved with higher spray volumes, generally 20 to 40 gallons per acre. Be sure to calibrate sprayers before application. When spraying industrial turf, avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping to avoid injury to desired species.

### **HIGH VOLUME HANDGUN APPLICATION**

Use 50 to 300 gallons of spray solution per broadcast acre. Mix Telar® XP Herbicide at 1 to 2.6 ounces per acre. Determine spray volume application amount needed for coverage of the site prior to adding Telar® XP Herbicide to the spray tank. Ensure thorough weed and/or site coverage for best results and use the higher rate for harder to control species.

### **INVERT SPRAY APPLICATION**

Apply the high viscosity invert solution as a total volume of 10 to 40 gallons per acre. Mix 1/4 to 2.6 ounces of Telar® XP Herbicide per acre in the water phase of the invert solution. Refer to the Weeds Controlled sections of this label for selecting the appropriate use rate for the target weeds. Follow all use directions and cautionary statements appearing on the labels of the inverting oils and additives or listed in the operators manual of the inverting equipment by its manufacturer.

### **SPOT APPLICATION**

#### **PASTURE, RANGE AND CONSERVATION RESERVE PROGRAM (CRP)**

Telar® XP Herbicide is to be used for control of the previously listed weeds in pasture, range, and CRP using spot applications. Spot applications may be made by using equipment such as back pack sprayers.

Telar® XP Herbicide should be applied as a spray to the foliage and stems. The application volume will vary with the height and density of the weeds and the application equipment used. Regardless of the application volume and equipment used, thorough coverage of the foliage and stems is required to optimize results. To improve postemergence control of weeds, a spray adjuvant should be added at 0.25% volume or at the manufacturer's specified rate.

Use the measuring guide enclosed with the Telar® XP Herbicide container to mix one gram of Telar® XP Herbicide per one gallon of water along with a suitable surfactant. Spray to the point of wetting the entire surface of the target weeds, approximately 35 gallons of solution per acre.

## NON-CROP SITES

Spot applications in non-crop sites may be applied at an equivalent broadcast rate of up to 5.2 ounces product per acre per year but not more than 50% of an acre may be treated. Do not apply more than 2.6 ounces product per broadcast acre per year as a result of broadcast, spot or repeat applications.

To prevent misapplication, spot applications should be applied with either a calibrated boom sprayer, a boom-less sprayer, or a hand-held or backpack sprayer.

For smaller areas, the application rates in Table 1 are based on treating an area of 1000 square feet (sq ft). Mix Telar® XP Herbicide in 0.3 to 3 gallons of water, depending on the spray volume necessary to uniformly treat 1000 sq ft. A spray volume of 0.3 to 3 gallons per 1000 sq ft is equivalent to 13 to 130 gallons per acre.

Table 1. Spot Spray Rate Chart - Small Area  
Amount of Telar® XP Herbicide per 1000 square feet  
to Equal a Broadcast Rate

Broadcast Rate (ounces/acre)	Amount Telar® XP Herbicide needed per 1000 sq ft	
	(ounces)	(grams)
1.0	0.02	0.6
2.0	0.05	1.3
3.0	0.07	2.0
4.0	0.09	2.6
5.0	0.11	3.1

## AERIAL APPLICATION

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage.

Use a minimum of 3 GPA.

When applying Telar® XP Herbicide by air in areas adjacent to sensitive crops, use solid stream nozzles oriented straight back. Adjust the swath to avoid spray drift damage to sensitive crops downwind and/or use ground equipment to treat the border edge of fields. See the Spray Drift Management section of this label.

## SPRAY ADJUVANTS

To improve postemergence weed control, a high quality spray adjuvant should be added at the manufacturer's specified use rate. Do not use LI-700 or any acidifying spray adjuvants with Telar® XP Herbicide.

## CROP ROTATION

Before using Telar® XP Herbicide, carefully consider your rotation plans and options. If rotational flexibility is desired, do not treat all of your pasture, range-land, or CRP acres at the same time.

## BIOASSAY

A field bioassay must be completed before rotating to any crop or grass species/variety not listed in this label.

To conduct a field bioassay, grow test strips of the crop(s) or grass(es) you plan to grow the following year in fields previously treated with Telar® XP Herbicide. Crop or grass response to the bioassay will indicate whether or not to rotate to the crop(s) or grass(es) grown in the test strip.

If a field bioassay is planned, check with your local dealer or BAYER CROPSCIENCE LP representative for information detailing the field bioassay procedure.

## GRAZING/HAYING

There are no grazing or hay harvest restrictions for any livestock, including lactating animals, with application rates up to 1 1/3 ounces/acre of Telar® XP Herbicide. No enclosure is required for any animals.

## PESTICIDE HANDLING

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid over-filling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

## MIXING INSTRUCTIONS

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of Telar® XP Herbicide.
3. Continue agitation until the Telar® XP Herbicide is fully dispersed, at least 5 minutes.
4. Once the Telar® XP Herbicide is fully dispersed, maintain agitation and continue filling tank with water. Telar® XP Herbicide should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mix partners (if desired) and then add the necessary volume of spray adjuvants. Always add spray adjuvants last.
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Apply Telar® XP Herbicide spray mixture within 24 hours of mixing to avoid product degradation.
8. If Telar® XP Herbicide and a tank mix partner are to be applied in multiple loads, pre-slurry the Telar® XP Herbicide in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the Telar® XP Herbicide.

Do not use Telar® XP Herbicide with spray additives that reduce the pH of the spray solution to below 5.0.

## SPRAYER CLEANUP

Spray equipment must be cleaned before Telar® XP Herbicide is sprayed. Immediately following application of Telar® XP Herbicide, follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the steps outlined in the SPRAYER CLEANUP section of this label.

## AT THE END OF THE DAY

When multiple loads of Telar® XP Herbicide are applied, it is recommended that at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits that can accumulate in the application equipment.

Thoroughly clean all mixing and spray equipment immediately following applications of Telar® XP Herbicide as follows:

1. Drain tank; rinse interior surfaces of tank; then flush tank, boom, and hoses with clean water for a minimum of 5 minutes.

2. Fill the tank with clean water and add the cleaning solution\*. Flush the boom, hoses, and nozzles with the cleaning solution. Allow them to sit for 15 minutes with agitation running, and then drain the tank.
  3. Repeat Step 2.
  4. Repeat Step 1.
  5. Remove the nozzles and screens and clean separately. To remove traces of cleaning solution, rinse the tank thoroughly with clean water and flush through the hoses and boom.
- \* Use cleaning solutions such as the following:
1. One gal ammonia (containing 3% active) per 100 gal of water.
  2. "Nutra-sol" (carefully read and follow "Nutra-sol" label directions).
  3. Loveland Spray Tank Cleaner (carefully read and follow Loveland Spray Tank Cleaner label directions).
  4. "Tank-Cleaner" (carefully read and follow "Tank-Cleaner" label directions).

To reduce the amount of water required in the above procedure, see separate BAYER CROPSCIENCE LP bulletin, "Reduced Volume Cleanout Procedure for Large Sprayers."

**Note:** This sprayer cleanup procedure is only effective for Telar® XP Herbicide and for general uses specified under "Directions for Use". Do not use the sprayer on food crops (except wheat, barley and oats), feed crops (except rangeland, CRP and pasture), fine turf, ornamentals and other desirable plants.

## SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

## IMPORTANCE OF 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. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **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** sections of this label.

## CONTROLLING DROPLET SIZE GENERAL TECHNIQUES

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application and produces a COARSE to VERY COARSE droplet size spectrum (ASAE S572) under application conditions. With most nozzle types, narrower spray angles produce larger droplets. Consider using lowdrift nozzles.

## CONTROLLING DROPLET SIZE AIRCRAFT

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream, will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

## BOOM LENGTH AND HEIGHT

- **Boom Length (helicopter)** - For helicopters, the boom length must not exceed 90% of the rotor blade diameter. Using shorter booms decreases drift potential.
- **Boom Height (helicopter)** - Application more than 10 ft above the canopy increases the potential for spray drift. Make applications no higher than 10 feet above the top of the target vegetation, unless a greater height is required for helicopter safety.
- **Boom Height (ground)** - Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce. Limit nozzle height to no greater than 4 feet above the top of the largest plants.

## WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

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

## TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## SURFACE TEMPERATURE INVERSIONS

Applications must not occur during a local surface temperature inversion because drift potential is high. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature 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 a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

## 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).

## DRIFT CONTROL ADDITIVES

Drift control additives may be used with all spray equipment with the exception of controlled droplet applicators. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the label. It is recommended that drift control additives be certified by the Chemical Producers and Distributors Association (CPDA). Do not use an adjuvant which increases viscosity with Microfoil, Thru-Valve booms, or other systems that cannot accommodate viscous sprays.

## 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 upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

## IMPORTANT PRECAUTIONS AND RESTRICTIONS

- Injury to or loss of desirable trees or other plants may result if equipment is drained or flushed on or near desirable trees or other plants, on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Treatment of powdery, dry soil and light, sandy soils when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed, blown or moved onto land used to produce crops. Exposure to Telar® XP Herbicide may injure or kill most crops (except small grains). Injury may be more severe when crops are irrigated. Do not apply Telar® XP Herbicide when conditions are identified and powdery, dry soil or light or sandy soils are known to be prevalent in the area being treated.
- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not penetrate may result in runoff and movement of Telar® XP Herbicide.
- Do not treat frozen or snow covered soil.
- Treated soil should be left undisturbed to reduce the potential for Telar® XP Herbicide movement by soil erosion due to wind or water.
- Applications made where runoff water flows onto agricultural land may injure crops.
- When Telar® XP Herbicide is applied at rates of 1 1/3 ounces/acre and less there is no restriction on grazing or haying of forage grasses.
- Grass species or varieties may differ in their response to various herbicides. BAYER CROPS SCIENCE LP recommends that you first consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use of Telar® XP Herbicide to a small area. Components in a grass seed mixture will vary in tolerance to Telar® XP Herbicide so the final stand may not reflect the seed ratio.
- Under certain conditions such as heavy rainfall, high pH, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after Telar® XP Herbicide application, temporary discoloration and/or grass injury may occur. Telar® XP Herbicide should not be applied to grass that is stressed by severe weather conditions, drought, low fertility, water-saturated soils, disease, or insect damage, as grass injury may result. Severe winter stress, drought, disease, or insect damage before or following application may also result in grass injury.
- Applications of Telar® XP Herbicide to pastures, range or CRP undersown with legumes may cause injury to the legumes. Legumes in a seeding mixture may be severely injured or killed following an application of Telar® XP Herbicide.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Do not apply in or on irrigation or drainage ditches or canals including their outer banks.
- Do not allow Telar® XP Herbicide to drift or move into irrigation or drainage ditches.
- Do not apply through any type of irrigation system.
- Do not use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla, and Conejos.
- Do not apply this product in a way that will contact any person or pet, either directly or through drift. Keep people and pets out of the area during application.
- Do not allow people or pets to enter the treated area until sprays have dried.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store product in original container only. Store in a cool, dry place.

**Pesticide Disposal:** Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

**Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds):** 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. 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, for Plastic Containers, 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. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds):** 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. 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, for Plastic Containers, 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. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## STORAGE AND DISPOSAL (continued)

**Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down):** Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners:** Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

**Refillable Fiber Drums With Liners:** Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with Telar® XP Herbicide containing chlorsulfuron only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Disposing of Fiber Drum and/or Liner: Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a

(continued)

### **STORAGE AND DISPOSAL (continued)**

sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

**All Other Refillable Containers:** Refillable container. Refilling Container: Refill this container with Telar® XP Herbicide containing chlorsulfuron only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, do not use the container, contact BAYER CROPSCIENCE LP at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact BAYER CROPSCIENCE LP at the number below for instructions. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, 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. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

### **STORAGE AND DISPOSAL (continued)**

**Outer Foil Pouches of Water Soluble Packets (WSP):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact BAYER CROPSCIENCE LP at 1-800-334-7577, day or night.

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## CONDITIONS OF SALE AND LIMITATIONS OF WARRANTY AND LIABILITY

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, plant injury, other property damage, as well as other unintended consequences may result because of factors beyond the control of Bayer CropScience LP. Those factors include, but are not limited to, weather conditions, presence of other materials or the manner of use or application. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

**LIMITATIONS OF LIABILITY:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

For product information call: 1-800-331-2867

Produced for:  
Bayer Environmental Science  
A Division of Bayer CropScience LP  
2 T. W. Alexander Drive  
Research Triangle Park, NC 27709

Bayer





**Telar<sup>®</sup>**  
**XP**

**HERBICIDE**

Dry Flowable		
Active Ingredient		By Weight
Chlorosulfuron		
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	75%	
Other Ingredients	25%	
<b>TOTAL</b>		<b>100%</b>

EPA Reg. No. 432-1561  
EPA Est. No. 352-IL-001  
Nonrefillable Container

**KEEP OUT OF REACH OF CHILDREN CAUTION**

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.)

See inside leaflet for complete First Aid Instructions, Precautionary Statements, Directions for Use and Storage and Disposal Instructions.

Net Weight  
**1 Pound**  
**84062022**  
A01786543 150716AV1

**USER SAFETY RECOMMENDATIONS**  
Users should wash hands 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**  
Do not apply directly to water, or 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.

**AGRICULTURAL USES**

**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 entry into 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:  
Coversalls  
Chemical resistant gloves made of any water proof material  
Shoes plus socks

**FIRST AID**  
**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 a poison control center or doctor. Do not give anything to an unconscious person.  
**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 eyes. 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. You may also contact 1-800-331-7577 for emergency medical treatment information.

**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, or using tobacco.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**  
Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A or an EPA chemical-resistance category selection chart.  
Mixers, loaders, applicators, and other handlers must wear:  
Long-sleeved shirt and long pants  
Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.  
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions 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.

**ENGINEERING CONTROL STATEMENTS**  
When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240 (d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS. **IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

Produced for:  
Bayer Environmental Science  
A Division of Bayer CropScience LP  
2 T.W. Alexander Drive  
Research Triangle Park, NC 27709

Bayer

OPEN HERE

GROUP 14 HERBICIDE

# Lock Down

## Herbicide

Directions for use to maintain bare ground non-crop areas

### ACTIVE INGREDIENT:

\*Flumioxazin ..... 51.0%

**OTHER INGREDIENTS:** ..... 49.0%

**TOTAL:** ..... 100.0%

\*(2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione)

Lock Down Herbicide is a water dispersible granule containing 51% active ingredient.

**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.)  
SEE INSIDE BOOKLET FOR FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

For Medical Emergencies Only, Call (877) 325-1840

EPA Reg. No. 71368-103

Net Contents  
**12 Lbs.**  
(5.44 Kg)

Manufactured for  
Nufarm, Inc.  
11901 S. Austin Avenue  
Alsip, IL 60803



**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION / PRECAUTION**

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing.

<b>FIRST AID</b>	
<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>
<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 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</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 to 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 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>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.	

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some of the 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-resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

**Users Should:**

- 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.

**ENVIRONMENTAL HAZARDS**

This product is toxic to non-target plants and aquatic invertebrates. 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 non-target plants and aquatic organisms in neighboring areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

This pesticide is toxic to plants and should be used strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Under some conditions this product may have a potential to run off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, such as no till, limited till and contour plowing; these methods also reduce pesticide run-off. Use of vegetation filter strips along rivers, creeks, streams, wetlands or on the downhill side of fields where run-off could occur will minimize water run-off and is recommended.

**DIRECTIONS FOR USE**

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

Read the entire label before using this product. Use strictly in accordance with precautionary statements and directions, and with applicable State and Federal regulations.

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.

### **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 Standards 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 all unprotected persons out of operating areas, or vicinity where there may be drift.

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

### **TANK MIXES**

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

Read and follow the entire label of each product to be used in the tank mix with this product.

## PRODUCT INFORMATION

This product is a selective herbicide to maintain bare ground non-crop areas when used in accordance with this label. This product is effective as a preemergence and/or postemergence herbicide for control of selected grass and broadleaf weeds.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

### USE PRECAUTIONS

- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply more than 12 oz of this product per acre per application.
- Do not apply more than 24 oz of this product per acre per year.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

### RESISTANCE MANAGEMENT

Any weed population may contain or develop plants naturally resistant to herbicides in various mode of action classes. Resistant biotypes may eventually dominate the weed population if the same class of chemistry/mode of action herbicides are used repeatedly in the same field or in successive years. These resistant biotypes may not be adequately controlled by herbicides in a mode of action class for which resistance has developed. A gradual or total loss of weed control may occur over time. Other resistance mechanisms that are not linked to site of action, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

#### To Delay Herbicide Resistance

- Avoid the use of herbicides that have a similar target site mode of action in consecutive years.
- Herbicide use should be based on an Integrated Pest Management (IPM) program that includes scouting, record keeping, and consideration of cultivation practices, water management, weed free crop seed, crop rotation, and other chemical or cultural control practices.
- Monitor treated weed population for resistance development and report suspected resistance.
- Contact your local extension or crop expert (advisor) for any additional pesticide resistance management and/or iPM recommendations for specific crops and weed biotypes.
- For further information contact Nufarm Inc. at the following toll free number 800-345-3330.

### PREEMERGENCE APPLICATION

Preemergence application of this product should be made prior to weed emergence. Moisture is necessary to activate this product for residual weed control. Moisture is needed to move this product into the soil for preemergence weed control. Dry weather following application of this product may reduce effectiveness.

### POSTEMERGENCE APPLICATION

For best results, this product should be applied to actively growing weeds. Applying this product under conditions that do not promote active weed growth will reduce herbicide effectiveness.

Do not apply this product when the weeds are under stress due to drought, excessive water and extremes in temperatures or disease. This product is most effective when applied under sunny conditions at temperatures above 65° F.

This product is rainfast one hour after application. Applications should not be made if rain is expected within one hour of application or efficacy may be reduced.

### APPLICATION EQUIPMENT

**Important:** Spray equipment, including all tanks, hoses, booms, screens and nozzles, should be thoroughly cleaned. **Spray equipment used to apply this product should not be used to apply other materials to any desirable plant foliage.** Equipment with this product's residue remaining in the system may result in crop injury to subsequently treated crops.

### SPRAYER PREPARATION

Before applying this product, start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms should be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. The spray equipment should be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to this product's application, the most restrictive cleanup procedure should be followed.

## MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. To ensure a uniform spray mixture, pre-slurry the required amount of this product with water prior to addition to the spray tank. Use a minimum of 1 gal of water per 10 oz of this product.
3. While agitating, slowly add the pre-slurried product to the spray tank. Agitation should create a rippling or rolling action on the water surface.
4. If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
5. Add any required adjuvants.
6. Fill spray tank to desired level with water. **Agitation should continue until spray solution has been applied.**
7. Mix only the amount of spray solution that can be applied the day of mixing. This product should be applied within 24 hours of mixing.

## SPRAYER CLEANUP

Except for dedicated bare ground herbicide application equipment, spray equipment should be cleaned each day following this product application. The following steps should be used to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank, add suitable commercial spray tank cleaning material, following label directions, or add 1 gal of 3% household ammonia for every 100 gals of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them with clean water.

## SPRAY DRIFT REDUCTION

Do not apply under circumstances where possible drift to unprotected persons or to food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial or ground applications when the wind velocity favors on-target product deposition. Drift potential is lowest between wind speeds of 2-10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For ground boom applications, apply with nozzle height at the lowest boom height which provides uniform coverage and reduces exposure to evaporation and wind.

## WEEDS CONTROLLED

When this product is applied preemergence or postemergence at recommended rates and weed stages, the following grasses and broadleaf weeds are controlled:

**TABLE 1. WEEDS CONTROLLED BY LOCK DOWN HERBICIDE**

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
Alyssum, Hoary	<i>Berteroa incana</i>	Moss	<i>Bryum</i> spp.
Amaranth		Mustard	
Palmer	<i>Amaranthus palmeri</i>	Tumble	<i>Sisymbrium altissimum</i>
Spiny	<i>Amaranthus spinosus</i>	Wild	<i>Brassica kaber</i>
Barnyardgrass*	<i>Echinochloa crus-galli</i>	Nightshade	
Beggarweed, Florida	<i>Desmodium Tortuosum</i>	Black	<i>Solanum nigrum</i>
Bittercress, Hairy	<i>Cardamine hirsute</i>	Eastern Black	<i>Solanum ptycanthum</i>
Bluegrass, Annual*	<i>Poa annua</i>	Hairy	<i>Solanum sarrachoides</i>
Burclover, California	<i>Medicago Polymorpha</i>	Panicum	
Carpetweed	<i>Mollugo verticillata</i>	Fall*	<i>Panicum dichotomiflorum</i>
Chickweed		Texas*	<i>Panicum texanum</i>
Common	<i>Stellaria media</i>	Parsley-Peirt	<i>Atchemilla arvensis</i>
Mouseear	<i>Cerastium vulgatum</i>	Pearlwork, Birdseye*	<i>Sagina procumbens</i>
Crabgrass		Pennycress, Field	<i>Thlaspi arvense</i>
Large*	<i>Digitaria sanguinalis</i>	Phyllanthus, Longstalked	<i>Phyllanthus tenellus</i>
Smooth*	<i>Digitaria ishaemum</i>	Pigweed	
Southern*	<i>Digitaria ciliaris</i>	Prostrate	<i>Amaranthus blitoides</i>
Croton, Tropic	<i>Croton glandulosus</i> var. <i>septentrionalis</i>	Redroot	<i>Amaranthus retroflexus</i>
	<i>Taraxacum officinale</i>	Smooth	<i>Amaranthus hybridus</i>
Dandelion*	<i>Eupatorium capillifolium</i>	Tumble	<i>Amaranthus albus</i>
Donfennel	<i>Eclipta prostrate</i>	Pineapple-weed*	<i>Matricaria matricarioides</i>
Eclipta		Plantain	
Foxtail		Broadleaf*	<i>Plantago major</i>
Bristly*	<i>Setaria verticillata</i>	Buckhorn*	<i>Plantago lanceolata</i>
Giant*	<i>Setaria faberi</i>	Poinsettia, Wild	<i>Euphorbia heterophylla</i>
Green*	<i>Setaria viridis</i>	Pondweed, Sago	<i>Potamogeton pectinatus</i>
Yellow*	<i>Setaria glauca</i>	Puncturevine	<i>Tribulus terrestris</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>	Purslane, Common	<i>Portulaca oleracea</i>
Geranium, Carolina	<i>Geranium carolinianum</i>	Pusley, Florida	<i>Richardia scabra</i>
Goosegrass*	<i>Eleusine indica</i>	Ragweed	
Groundsel, Common	<i>Senecio vulgaris</i>	Common	<i>Ambrosia artemisiifolia</i>
Henbit	<i>Lamium amplexicaule</i>	Giant	<i>Ambrosia trifida</i>
Horseweed*	<i>Conyza Canadensis</i>	Redmaids	<i>Calandrinia ciliata</i>
Indigo, Hairy	<i>Indigofera hirsuta</i>	Redweed	<i>Melochia corchorifolia</i>
Ivy, Ground*	<i>Glechoma hederacea</i>	Rocket, Yellow	<i>Barbarea vulgaris</i>
Jimsonweed	<i>Datura stramonium</i>	Senna, Coffee	<i>Cassia occidentalis</i>
Kochia	<i>Kochia scoparia</i>	Sesbania, Hemp	<i>Sesbania exaltata</i>
Kyllinga, Green*	<i>Kyllinga brevifolia</i>	Shepherd's-Purse	<i>Capsella bursa-pastoris</i>
Ladysthumb	<i>Polygonum persicaria</i>	Sida, Prickly (Teaweed)	<i>Sida spinosa</i>
Lambsquarters, Common	<i>Chenopodium album</i>	Signalgrass*	<i>Brachiaria platyphylla</i>
Lovegrass, California*	<i>Eragrostis diffusa</i>	Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Mallow		Sowthistle, Annual	<i>Sonchus oleraceus</i>
Common	<i>Malva neglecta</i>	Spurge	
Little	<i>Malva parviflora</i>	Prostrate	<i>Euphorbia humistrata</i> Engelm
Venice	<i>Hibiscus trionum</i>	Spotted	<i>Euphorbia maculata</i>
Mayweed*	<i>Anthemis cotula</i>	Starbur, Bristly*	<i>Acanthospermum hispidum</i>
Morningglory		Thistle	
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	Canada*	<i>Cirsium arvense</i>
	<i>Ipomoea hederacea</i>	Russian	<i>Salsola iberica</i>
Ivyleaf	<i>Ipomoea coccinea</i>	Velvetleaf	<i>Abutilon theophrasti</i>
Red/Scarlet	<i>Jacquemontia tamnifolia</i>	Waterhemp	
Smallflower	<i>Ipomoea purpurea</i>	Common	<i>Amaranthus rudis</i>
Tall		Tall	<i>Amaranthus tuberculatus</i>
		Woodsorrel, Yellow*	<i>Oxalis stricta</i>

\*Preemergence control only

## **DIRECTIONS FOR USE**

### **TO MAINTAIN BARE GROUND NON-CROP AREAS**

This product, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply this product only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings, and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders.

Follow all applicable directions as outlined above under General Information. See Table 1 for a list of broadleaf weeds and grasses controlled by this product.

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

#### **PREEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of this product per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of this product should be made to a weed free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

#### **POSTEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). The addition of an adjuvant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

#### **SOIL CHARACTERISTICS**

Application of this product to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

### **CARRIER VOLUME AND SPRAY PRESSURE**

#### **PREEMERGENCE APPLICATION**

To ensure uniform coverage, use 10 to 30 gals of spray solution per acre. Nozzle selection should meet manufacturer's gallonage and pressure recommendation for preemergence herbicide application.

#### **POSTEMERGENCE APPLICATION**

To ensure thorough coverage, use 15 to 30 gals of spray solution per acre. Use 20 to 30 gals per acre if dense vegetation or heavy residue is present on the soil surface. Nozzle selection should meet manufacturer's gallonage and pressure recommendations for postemergence herbicide application.

### **ADDITIVES**

#### **POSTEMERGENCE APPLICATION**

When applying this product after weed emergence, mix with an agronomically approved adjuvant. A crop oil concentrate which contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient should be used when applying this product as part of a postemergence weed control program. Mixing compatibility should be verified by a jar test before using.

A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or a 28 to 32% nitrogen solution at 1 to 2 qt/A) may be added to the spray mixture along with a crop oil concentrate or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for crop oil concentrate or non-ionic surfactant.

#### **JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND LOCK DOWN HERBICIDE**

A jar test should be performed before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pt of water to a quart jar. The water should be from the same source and have the same temperature as the water used in the spray tank mixing operation.
2. Add 3 grams (approximately 1 level tsp) of this product for the 8 oz/A rate or 4 grams (approximately 1 1/2 tsp) for 12 oz/A rate to the jar. Gently mix until product disperses.
3. Add 60 ml (4 Tbsp or 2 fl oz) of additive to the quart jar and gently mix.
4. If nitrogen is being used, add 16 ml (1 Tbsp) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 grams of AMS to the quart jar in place of the 28 to 32% nitrogen.

5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - a) Layer of oil or globules on the solution surface.
  - b) Flocculation: Fine particles in suspension or as a layer on the bottom of the jar.
  - c) Clabbering: Thickening texture (coagulated) like gelatin.

#### **APPLICATION EQUIPMENT**

Application equipment should be clean and in good repair. Nozzles should be uniformly spaced on boom and frequently checked for accuracy.

#### **BROADCAST APPLICATION**

Apply this product, and this product's tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

#### **BAND APPLICATION**

When banding, use proportionately less water and this product per acre.

#### **HANDGUN APPLICATION**

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gals per acre to insure uniform coverage.

#### **AERIAL APPLICATION**

**• Aerial applications are limited to maintaining weed free railroad beds, railroad yards and surrounding areas and military installations.**

To obtain satisfactory weed control with aerial applications of this product, uniform coverage must be obtained. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

##### **Volume Pressure**

Use this product in 5 to 10 gals of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gals per acre will provide inadequate weed control. Higher gallonage applications provide more consistent weed control.

##### **Nozzle and Nozzle Operation**

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles, such as diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

##### **Adjuvants**

Refer to the additive section or the tank mix partner's label for adjuvant recommendation.

#### **TANK MIX APPLICATION**

In addition to weeds controlled by this product used alone, tank mixtures with other preemergence and postemergence herbicides registered for use in non-crop areas provide a broader spectrum of weed control. This product must be tank mixed with other non-crop herbicides including, but not limited to those products listed below.

#### **TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL**

2,4-D	hexazinon	picloram
bromacil	imazapic	pramitol
chlorsulfuron	imazapyr	prodiamine
dicamba	metsulfuron-methyl	simazine
diuron	norflurazon	sulfometuron-methyl
chlorpyralid	oryzalin	tebuthiuron
glyphosate	pendimethalin	triclopyr

**IMPORTANT:** Completely read and follow the label of any potential this product's tank mix partner. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply this product within 30 days.

## STORAGE AND DISPOSAL

### PESTICIDE STORAGE

Keep pesticide in original container.

Store in a cool, dry, secure place.

Do not put formulation or dilute spray solution into food or drink containers.

Do not store or transport near feed or food.

Not for use or storage in or around the home.

For help with any spill, leak, fire or exposure involving this material, call day or night (800) 424-9300. Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

### PESTICIDE DISPOSAL

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container 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.

## WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

## LIMITATION OF LIABILITY

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR ARISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

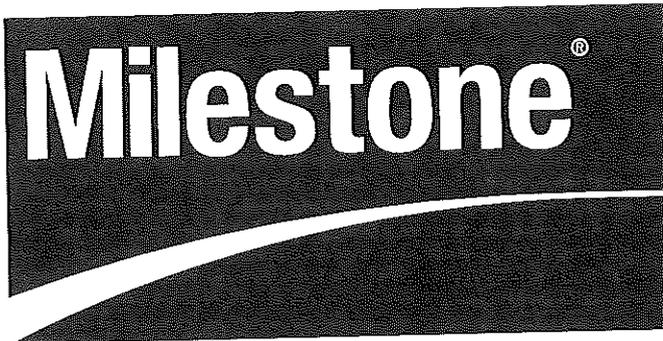
If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

(RV062013)

# Specimen Label



Dow AgroSciences



**SPECIALTY HERBICIDE**

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

- For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines, on:
  - rangeland, permanent grass pastures (including grasses grown for hay\*), Conservation Reserve Program (CRP)
  - non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses; and
  - natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools;
  - including grazed areas in and around these sites.

\*Hay from grass treated with Milestone within the preceding 18-months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling

<p><b>IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS</b></p> <ul style="list-style-type: none"> <li>• Carefully read the section <b>"Restrictions in Hay or Manure Use ."</b></li> <li>• It is mandatory to follow the <b>"Use Precautions and Restrictions"</b> section of this label.</li> <li>• Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.</li> <li>• Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.</li> <li>• Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions". <b>Call [1-(800) 263-1196] Customer Information Group.</b></li> </ul>	<p><b>Forage and Manure Management</b></p> <p>©Copyright 2011 Dow AgroSciences LLC</p>
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Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.  
 Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

GROUP	4	HERBICIDE
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Active Ingredient:  
 Triisopropanolammonium salt of 2-pyridine  
 carboxylic acid, 4-amino-3,6-dichloro-..... 40.6%  
 Other Ingredients ..... 59.4%  
 Total ..... 100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid,  
 4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal

**Container Use Directions**

<p><b>1 - Tip</b></p>  <p>Tilt container to angle as shown and fill head to desired amount - use vertical scale for measuring. Container should be closed.</p>	<p><b>2 - Level</b></p>  <p>Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.</p>	<p><b>3 - Dispense</b></p>  <p>Remove cap on head and pour into sprayer or other devices. No fluid will pour from the main container. Replace cap for storage in sealed condition.</p>
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**Precautionary Statements**

**Hazards to Humans and Domestic Animals**

EPA Reg. No. 62719-519

**CAUTION**

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing.

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

**User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco 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.

**First Aid**

**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. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

**Environmental Hazards**

Do not apply directly to water. Take care to minimize the incidental overspray along the shoreline when applying to terrestrial plants at the water's edge or to water in areas where surface water is present. Do not apply directly to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater 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. Application around a cistern or well may result in contamination of drinking water or groundwater.

**Directions for Use**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.  
 Read all Directions for Use carefully before applying.

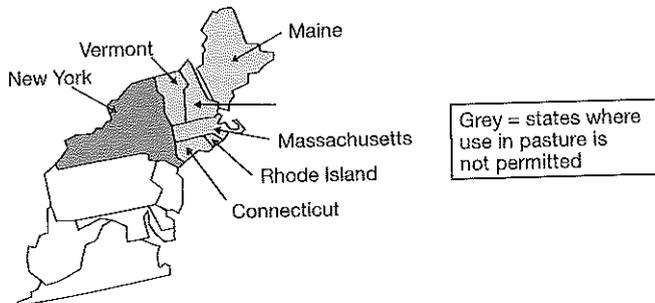
This product is not intended for reformulation or repackaging into other end-use products.

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.

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.

Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

Not for use on pastures in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. All other labeled uses are permitted in these states including grazed areas in and around these sites.



**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 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
- Chemical-resistant gloves made of any waterproof material as polyethylene or polyvinyl chloride
- Shoes plus socks
- 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 for Agricultural Pesticides (40 CFR Part 170). The WPS does not pertain to non-agricultural use on sites, such as, rangeland, permanent grass pastures, or non-cropland. See the Agricultural Use Requirements section below for information where the WPS applies.

**Entry Restrictions for Non-WPS Uses:** For applications on rangeland and permanent grass pastures (not harvested for hay) and non-cropland areas, do not enter or allow worker entry into treated areas until sprays have dried.

**Storage and Disposal**

Do not contaminate water, food, feed or fertilizer by storage or disposal. Open dumping is prohibited.

**Pesticide Storage:** If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized active ingredient prior to use.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Nonrefillable containers 5 gallons or less:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

## Storage and Disposal (Cont.)

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 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. **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 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 containers larger than 5 gallons:

**Container Handling:** 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. 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.

### Nonrefillable containers larger than 5 gallons:

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

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 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.

### Resistance Management Guidelines

- Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications.
- In croplands, use an effective integrated pest management (IPM) program, integrating tillage or other mechanical methods, crop rotation or other cultural control methods into weed control programs whenever practical.
- Similar looking biotypes of a given weed species occurring in a treated area may vary in their susceptibility to a herbicide. Application of a herbicide below its labeled rate may allow more tolerant weeds to survive and a shift to more tolerant biotypes within the treated area.
- Where identified, spreading of resistant weeds to other fields may be prevented by cleaning harvesting and tillage equipment before moving to other areas and by planting weed-free seed.
- Contact your extension specialist, certified crop consultant, or Dow AgroSciences representative for the latest resistance management information.

### Use Precautions

- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of Milestone. Injury to crops may result if treated soil and/or runoff water containing Milestone is washed, or moved onto land used to produce crops. Exposure to Milestone may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals.

### • Grass revegetation:

- Milestone can be used to control broadleaf plants in grass revegetation programs. Consult Dow AgroSciences' literature for more details about Milestone applications and grass stand establishment.

### • Application before seeding grasses

- Milestone can be applied to control broadleaf weeds prior to grass planting. Grass seed germination and seedling development can be adversely affected by many factors such as seed viability and seedling vigor, soil condition (sub-optimal soil temperatures or soil water content), weather after planting, seedbed preparation and seed placement, disease, insects, or animals. Milestone applications will help to reduce competition from weeds and improve the chance for successful grass stand establishment. Some grass species are more sensitive to Milestone; consult Dow AgroSciences' literature for more details.

- **Postemergence applications on grass:** During the season of establishment, Milestone should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor). Most perennial grasses are tolerant to Milestone at this stage of development. Milestone may suppress certain established grasses, such as smooth brome grass (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.

### • Seeding Broadleaf Plants (Forbs) and Wildflowers

Milestone can be applied in the summer to control broadleaf weeds prior to forb planting. Forbs can be seeded 90 days after a summer application as a dormant fall planting or the following spring. Consult Dow AgroSciences literature for details.

- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated one year after the last application of aminopyralid in that field. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), epinasty, and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, forage grasses, native grasses or grasses grown for hay.

**Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions." Call (1-800-263-1196) for more information.**

### Pasture and Rangeland Restrictions

- Do not use grasses treated with Milestone in the preceding 18-months for hay intended for export outside the United States.
- Hay from areas treated with Milestone in the preceding 18-months CAN NOT be distributed or made available for sale off the farm or ranch where harvested unless allowed by supplemental labeling.
- Hay from areas treated with Milestone in the preceding 18-months CAN NOT be used for silage, haylage, baylage and green chop unless allowed by supplemental labeling.
- Do not move hay made from grass treated with Milestone within the preceding 18-months off farm unless allowed by supplemental labeling.
- Do not use hay or straw from areas treated with Milestone within the preceding 18-months or manure from animals feeding on hay treated with Milestone in compost.
- Do not use grasses treated with Milestone in the preceding 18-months for seed production.

## Restrictions for All Uses

**Maximum Application Rate:** On all labeled use sites do not broadcast apply more than 7 fl oz per acre of Milestone per year. The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.

Obtain Required Permits: Consult with appropriate state or local water authorities before applying this product around public waters. State or local public agencies may require permits.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply Milestone within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" to help minimize the potential for spray drift.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Do not apply this product to lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Do not apply Milestone within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- Do not treat frozen soil where runoff could damage sensitive plants.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Restrictions in Hay or Manure Use:**
  - ◆ Do not use aminopyralid-treated plant residues, including grass, wood plants, trees, hay or straw from areas treated within the preceeding 18-months, in compost, mulch wood chips, or mushroom spawn.-
  - ◆ Do not use manure from animals that have eaten aminopyralid-treated forage or hay within the previous 3 days in compost, mulch or mushroom spawn. Livestock must have 3 days of eating non-aminopyralid-treated materials in order to clear their system of aminopyralid. Do not use aminopyralid-treated plants in areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
  - ◆ Do not spread manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days on land used for growing susceptible broadleaf crops.
  - ◆ Manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days may only be used on areas used for pasture, grass grown for seed, wheat and corn.
  - ◆ Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields or areas treated with aminopyralid or manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
  - ◆ Do not plant a broadleaf crop in fields or areas treated in the previous year with manure from animals that have consumed

aminopyralid-treated forage or hay until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.

- ◆ To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field bioassay (see instructions below) is the BEST way to determine planting options. Broadleaf crops such as canola, flax, and alfalfa can require at least 2 to 3 years depending on the crop and environmental conditions. More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

## Precautions for Avoiding Spray Drift

Avoid application under conditions that may allow spray drift because very small quantities of spray, which may not be visible, may injure susceptible crops. This product should be applied only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, non-target crops and other plants) is minimal (e.g., when wind is blowing away from the sensitive areas. A drift control aid may be added to the spray solution to further reduce the potential for drift. If a drift control aid is used, follow the use directions and precautions on the manufacturer's label. Do not use a thickening agent with Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

**Ground Equipment:** With ground equipment spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's specified minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to thermal inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift.

**Aerial Application:** Avoid spray drift at the application site. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. Users 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 boom length must not exceed 75% of the fixed wing span and must be located at least 8 -10 inches below the trailing edge of the fixed wing; the boom length must not exceed 85% of the rotary blade.
2. Nozzles should be pointed backward parallel with the air stream or not pointed downwards more than 45 degrees.

State regulations must be followed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. This information is advisory in nature and does not supersede 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 specified 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 will provide uniform coverage.

- **Nozzle Orientation** - Orient nozzles so that the spray is released parallel to the airstream to produce larger droplets than other orientations. 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:** The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor diameter.

**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 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 should increase, with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2 to 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 such as valleys and ravines 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 the 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.

#### Sprayer Clean-Out Instructions

It is recommended to use separate spray equipment on highly sensitive crops such as tobacco, soybeans, potatoes, peanuts and tomatoes.

Do not use spray equipment used to apply Milestone for other applications to land planted to, or to be planted to, broadleaf plants unless it has been determined that all residues of this herbicide have been removed by thorough cleaning of equipment.

Equipment used to apply Milestone should be thoroughly cleaned before reusing to apply any other chemicals as follows:

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
  2. Rinse a second time, adding 1 quart of household ammonia or tank cleaning agent for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
  3. Flush the solution out of the spray tank through the boom.
  4. Rinse the system twice with clean water, recirculating and draining each time.
  5. Spray nozzles and screens should be removed and cleaned separately.
- Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce control achieved with the herbicide and increase spray drift potential.

#### Use Information

Apply the specified rate of Milestone as a coarse low-pressure spray. Do not apply this product with mist blower systems that deliver very fine spray droplets. Spray volume should be sufficient to uniformly cover foliage or intended application site. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, a non-ionic agricultural

surfactant or other adjuvant may be added to the spray mixture as specified by the adjuvant label.

Milestone may be applied by ground or aerial application equipment on any registered use site specified on this label.

**Ground Broadcast Application:** Higher spray volumes (greater than 10 gallons per acre) generally provide better coverage and better control, particularly in dense and/or tall foliage.

**Aerial Broadcast Application:** Do not apply less than 2 gallons per acre total spray volume. Five gallons per acre or greater will generally provide better coverage and better control, particularly in dense and/or tall foliage.

**High-Volume Foliar Application:** High volume foliar treatments may be applied at rates equivalent to a maximum of 7 fl oz per acre per year. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

For basal bark and cut stubble and all types of cut surface applications, see woody plant section.

#### Low-Volume Foliar Treatment

To control susceptible woody plants, use Milestone alone or in tank mixes with other herbicides in water. The spray concentration of Milestone tank mixes and total spray volume per acre should be adjusted according to the size and density of target woody plants and type of spray equipment used. With low-volume application, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars.

For best results, an adjuvant should be added to all spray mixtures. 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.

**Spot Application:** Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.) Spray volume should be sufficient to thoroughly and uniformly wet weed foliage, but not to the point of runoff. Repeat treatments may be made, but the total amount of Milestone applied must not exceed 7 fl oz per acre per year. To prevent misapplication, spot treatments should be applied with a calibrated sprayer with a known volume per acre. Table 1 shows Milestone amount to mix for various sprayer outputs in gallons per acre (GPA)

Table 1: Amount of Milestone (in mL) to mix in 1 gallon of water

Gallons per acre	Milestone amount (in mL) to mix to achieve target application rates		
	5 fl oz/a	7 fl oz/a	14 fl oz/a
20	7.5	10.5	21.0
30	5.0	7.0	14.0
40	3.8	5.3	10.5
50	3.0	4.2	8.4
60	2.5	3.5	7.0
70	2.1	3.0	6.0
80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

Use a syringe to measure cc

Note: Table 1 above shows mixes for various sprayer outputs in gallons per acre (GPA).

#### Conversions:

1 tsp = 5 mL                      30 ml = 1 fluid ounce                      1 cc = 1 mL  
3 tsp = 1 Tbsp                      2 Tbsp = 1 fluid ounce

#### Mixing Instructions

**Mixing with Water:** To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of Milestone and other herbicides, if tank mixing. Finally, with continued agitation, add the rest of the water and additives such as adjuvants, surfactants or drift control and deposition aids.

**Addition of Surfactants or Adjuvants on All Labeled Use Sites:** The addition of a high quality non-ionic surfactant (of at least 80% active principal) or adjuvant at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

**Tank Mixing with Other Herbicides:** Milestone may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the tank mix product(s), and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels.

- 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 statements of each product in the tank mixture.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** Perform a jar test prior to mixing in a spray tank to ensure compatibility of Milestone and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily remix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

#### **Invert emulsion spray mixtures**

Milestone can be applied in an invert emulsion using oil and an appropriate inverting agent. Follow label directions of the inverting agent.

**Mixing with Sprayable Liquid Fertilizer Solutions:** Milestone is usually compatible with liquid fertilizer solutions. It is anticipated that Milestone will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

**Note:** The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. Use of a compatibility aid may be required if Milestone is mixed with a 2,4-D-containing product and liquid fertilizer. **Mixing Milestone and 2,4-D in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

**Note:** Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

#### **Use Rates and Timing**

Milestone may be applied as a broadcast spray by ground or aerial equipment or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given use the higher rate to control weeds at advanced growth stages, or under less than favorable growing conditions, or for longer residual control. Best results are obtained when spray volume is sufficient to provide uniform coverage of treated weeds. For optimum uptake and translocation of Milestone, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 14 days following application.

Milestone provides post emergence control and preemergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

Milestone can provide long-term control of susceptible weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

Milestone can be an important component of integrated vegetation management programs designed to renovate or restore desired plant communities. To maximize and extend the benefits of weed control provided by Milestone, it is important that other vegetation management practices, including proper grazing management, biological control agents, replanting, fertilization, prescribed fire, etc., be used in appropriate sequences and combinations to further alleviate the adverse effects of weeds on desirable plant species and to promote development of desired plant communities. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management programs.

#### **Plants Controlled**

The following weeds and woody plants will be controlled with the rates of Milestone indicated below (table 2). For best results, most weeds and woody plants should be treated when they are actively growing and under conditions favorable for growth. Use a higher rate in the rate range when growing conditions are less than favorable or when weed foliage is tall and dense, or when optimal longer term residual control is desired. Milestone also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

**Table 2:** Weeds and Woody Plants Controlled

**Note:** Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
amaranth, spiny	<i>Amaranthus spinosus</i>	4 to 7	annual	Amaranthaceae
bedstraw	<i>Galium spp.</i>	4 to 7	perennial	Rubiaceae
beggarticks	<i>Bidens spp.</i>	4 to 7	annual	Asteraceae
broomweed, annual	<i>Amphichyris dracunculoides</i>	4 to 7	annual	Asteraceae
burdock, common	<i>Arctium minus</i>	4 to 7	biennial	Asteraceae
buttercup, hairy	<i>Ranunculus sardous</i>	4 to 7	annual	Ranunculaceae
buttercup, tall	<i>Ranunculus acris</i>	4 to 7	perennial	Ranunculaceae
buttercup spp	<i>Ranunculus spp</i>	4 to 7	various	Ranunculaceae
camelthorn	<i>Alhagi pseudalhagi</i>	5 to 7	perennial	Fabaceae
cat's ear, common	<i>Hypochaeris radicata</i>	5 to 7	perennial	Asteraceae
cat's ear	<i>Hypochaeris spp</i>	5 to 7	perennial	Asteraceae
chamomile, scentless	<i>Matricaria inodora</i>	4 to 7	annual	Asteraceae
chicory	<i>Cichorium intybus</i>	4 to 6	perennial	Asteraceae
chickweed	<i>Stellaria media</i>	7	annual	Caryophyllaceae

**Table 2: Weeds and Woody Plants Controlled (Cont.)**

**Note:** Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
cinquefoil, sulfur (1)	<i>Potentilla recta</i>	4 to 7	perennial	Rosaceae
cocklebur	<i>Xanthium strumarium</i>	3 to 5	annual	Asteraceae
clover	<i>Trifolium spp.</i>	5 to 7	perennial	Fabaceae
crazyweed	<i>Oxytropis</i>	5 to 7	perennial	Fabaceae
croton, tropic	<i>Croton glandulosus</i>	3 to 5	annual	Euphorbiaceae
crownvetch	<i>Securigera varia</i>	5 to 7	perennial	Fabaceae
cutweed, purple	<i>Gamochaeta purpurea</i>	4 to 7	annual	Asteraceae
daisy, oxeye (1)	<i>Leucanthemum vulgare</i>	4 to 7	perennial	Asteraceae
dock, curly	<i>Rumex crispus</i>	4 to 7	perennial	Polygonaceae
evening primrose, cutleaf	<i>Oenothera laciniata</i>	4 to 7	annual	Onagraceae
fiddleneck	<i>Amsinckia spp</i>	4 to 7	annual	Boraginaceae
fireweed	<i>Epilobium angustifolium</i>	5 to 7	perennial	Onagraceae
fleabane, flax-leaf	<i>Conyza bonariensis</i>	4 to 7	annual	Asteraceae
fleabane, hairy	<i>Conyza bonariensis</i>	5-7	annual/biennial	Asteraceae
hawkweed, orange (2)	<i>Hieracium aurantiacum</i>	4 to 7	perennial	Asteraceae
hawkweed, yellow (2)	<i>Hieracium caespitosum</i>	4 to 7	perennial	Asteraceae
henbane, black	<i>Hyoscyamus niger</i>	5 to 7	annual/biennial	Solanaceae
henbit	<i>Lamium amplexicaule</i>	5 to 7	annual/biennial	Lamiaceae
hogweed, giant	<i>Heracleum mantegazzianum</i>	7	perennial	Apiaceae
horsenettle, Carolina	<i>Solanum carolinense</i>	4 to 7	perennial	Solanaceae
horseweed (marestail)	<i>Conyza canadensis</i>	4 to 7	annual	Asteraceae
ironweed, tall	<i>Vernonia gigantea</i>	5 to 7	perennial	Asteraceae
ironweed, western	<i>Vernonia baldwinii</i>	7	perennial	Asteraceae
knapweed, diffuse (3)	<i>Centaurea diffusa</i>	5 to 7	biennial/perennial	Asteraceae
knapweed, meadow	<i>Centaurea debeauxii</i>	5 to 7	perennial	Asteraceae
knapweed, Russian (4)	<i>Acroptilon repens</i>	5 to 7	perennial	Asteraceae
knapweed, spotted (3)	<i>Centaurea stoebe</i>	5 to 7	biennial/perennial	Asteraceae
knapweed, squarrose	<i>Centaurea virgata</i>	5 to 7	biennial/perennial	Asteraceae
knapweeds	<i>Centaurea spp.</i>	5 to 7	biennial/perennial	Asteraceae
knotweeds, Japanese, bohemian (11)	<i>Reynoutria japonica</i>	7-14	perennial	Polygonaceae
kudzu	<i>Pueraria montana</i>	7	perennial	Fabaceae
lady's thumb	<i>Polygonum persicaria</i>	3 to 5	annual	Polygonaceae
lambsquarters	<i>Chenopodium album</i>	5 to 7	annual	Chenopodiaceae
lespedeza, annual	<i>Lespedeza striata</i>	5 to 7	annual	Fabaceae
licorice, wild	<i>Glycyrrhiza lepidota</i>	7	perennial	Fabaceae
locoweed	<i>Astragalus spp.</i>	5 to 7	perennial	Fabaceae
locust, black	<i>Robinia pseudoacacia</i>	7	woody perennial	Fabaceae
locust, honey	<i>Gleditsia triacanthos</i>	7	woody perennial	Fabaceae
loosestrife, purple (12)	<i>Lythrum salicaria</i>	7-14	perennial	Lythraceae
mayweed, scentless	<i>Tripleurospermum perforate</i>	4 to 7	annual	Asteraceae
mayweed, stinking	<i>Anthemis cotula</i>	7	annual	Asteraceae
medic, black	<i>Medicago lupulina</i>	4 to 7	perennial	Fabaceae
mimosa	<i>Albizia julibrissin</i>	7	woody perennial	Fabaceae
mullein (5)	<i>Verbascum spp.</i>	7	biennial	Scrophulariaceae
nightshade, silverleaf	<i>Solanum elaeagnifolium</i>	4-7	perennial	Solanaceae
oxtongue, bristly	<i>Picris echioides</i>	5 to 7	biennial	Asteraceae
pea, Swainson	<i>Sphaerophysa salsula</i>	5-7	perennial	Fabaceae
povertyweed	<i>Iva axillaris</i>	5-7	perennial	Asteraceae
ragweed, common	<i>Ambrosia artemisiifolia</i>	3 to 5	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	4 to 7	perennial	Asteraceae
ragweed, giant	<i>Ambrosia trifida</i>	4 to 7	annual	Asteraceae
ragwort, tansy	<i>Senecio jacobaea</i>	5 to 7	perennial	Asteraceae
redbud	<i>Cercis Canadensis</i>	7	woody perennial	Fabaceae

**Table 2: Weeds and Woody Plants Controlled (Cont.)**

**Note:** Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
rush skeletonweed	<i>Chondrilla juncea</i>	5 to 7	perennial	Asteraceae
sicklepod	<i>Cassia obtusifolia</i>	7	perennial	Fabaceae
smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	3 to 5	annual	Polygonaceae
sneezeweed, bitter	<i>Helenium amarum</i>	4 to 7	annual	Asteraceae
soda apple, tropical (6)	<i>Solanum viarum</i>	5 to 7	perennial	Solanaceae
sowthistle, annual	<i>Sonchus oleraceae</i>	7	annual	Asteraceae
sowthistle, perennial	<i>Sonchus arvensis</i>	3 to 5	perennial	Asteraceae
spanishneedles	<i>Bidens bipinnata</i>	4 to 7	annual	Asteraceae
St. Johnswort, common	<i>Hypericum perforatum</i>	5 to 7	perennial	Clusiaceae
stiltgrass, Japanese	<i>Microstegium vimineum</i>	5-7	annual	Poaceae
starthistle, Malta (7)	<i>Centaurea melitensis</i>	3 to 5	annual	Asteraceae
starthistle, purple (7)	<i>Centaurea calcitrapa</i>	3 to 5	biennial	Asteraceae
starthistle, yellow (7)	<i>Centaurea solstitialis</i>	3 to 5	annual	Asteraceae
sunflower, common	<i>Helianthus annuus</i>	4 to 7	annual	Asteraceae
sweetclover, white	<i>Mellilotus albus</i>	5 to 7	biennial	Fabaceae
sweetclover, yellow	<i>Mellilotus officinalis</i>	5 to 7	biennial	Fabaceae
teasel	<i>Dipsacus spp.</i>	4 to 7	biennial	Dipsacaceae
thistle, artichoke	<i>Cynara cardunculus</i>	5 to 7	perennial	Asteraceae
thistle, blessed milk	<i>Silybum marianum</i>	4-7	biennial	Asteraceae
thistle, bull (8)	<i>Cirsium vulgare</i>	3 to 5	biennial	Asteraceae
thistle, Canada (9)	<i>Cirsium arvense</i>	5 to 7	perennial	Asteraceae
thistle, woolly distaff	<i>Carthamus lanatus</i>	4 to 7	annual	Asteraceae
thistle, Italian	<i>Carduus pycnocephalus</i>	7	annual	Asteraceae
thistle, musk (8)	<i>Carduus nutans</i>	3 to 5	biennial	Asteraceae
thistle, plumeless (8)	<i>Carduus acanthoides</i>	3 to 5	biennial	Asteraceae
thistle, Scotch	<i>Onopordum acanthium</i>	5 to 7	biennial	Asteraceae
thistle, Russian (preemergence)	<i>Salsola spp</i>	7	annual	Chenopodiaceae
tree of heaven	<i>Ailanthus altissima</i>	7	perennial	Simaroubaceae
vetch	<i>Vicia spp.</i>	3 to 7	perennial	Fabaceae
willoweed, panicle	<i>Epilobium brachycarpum</i>	5-7	annual	Onagraceae
wisteria	<i>Wisteria brachybotris</i>	7	woody perennial	Fabaceae
wormwood, absinth(10)	<i>Artemisia absinthium</i>	6 to 7	perennial	Asteraceae
yarrow, common	<i>Achillea millefolium</i>	7	perennial	Asteraceae

- (1) **Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
- (2) **Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
- (3) **Diffuse, spotted, and squarrose knapweeds:** Apply Milestone at 5 to 7 fl oz per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
- (4) **Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer at early bud to flowering stages and to dormant plants in the fall.
- (5) **Mullein:** Apply to the rosette stage
- (6) **Tropical soda apple:** Apply Milestone at 5 to 7 fl oz per acre at any growth stage, but application by flowering will reduce seed production potential.
- (7) **Malta, purple, and yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
- (8) **Bull, musk, and plumeless thistles:** Apply Milestone at 3 to 5 fl oz per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl oz when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with Milestone starting at the late bud stages
- (9) **Canada thistle:** Apply Milestone at 5 to 7 fl oz per acre in the spring after all plants have fully emerged (some may be budding) until the oldest plants are in full flower stage. Use the higher rate when applying to the flower stage. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.
- (10) **Absinth wormwood:** Apply 6 to 7 fl oz per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results
- (11) **Invasive knotweeds:** Japanese, Bohemian, giant knotweeds: Optimum suppression of invasive knotweeds with Milestone herbicide is obtained when applications are made to plants that are at least 3 to 4 feet tall. Results of field trials conducted in the western U.S. indicate that high volume applications (100 gpa or greater) of Milestone at 7 fl oz/A or a spot treatment rate up to 14 fl oz/A applied in summer will provide good control of invasive knotweeds. In the upper Midwest, mowing in summer followed by fall application of Milestone (prior to frost) provided the best control. Infestations of invasive knotweed that are mowed should be allowed to regrow to at least 3 feet in height prior to herbicide treatment. Monitoring and follow-up herbicide treatments on regrowth will be necessary to control resprouts and achieve long-term control.
- (12) **Purple looestrife:** For optimum control apply Milestone at 7 fl oz per acre plus 1 pt to 1 qt of 2,4-D amine or 1 to 2 qts of Garlon 3A. Spot treatments may also be made by applying Milestone at 14 fl oz (see Spot treatment section of the label) with or without the addition of 2,4-D or Garlon 3A.
- (13) **Fiddleneck:** For optimum control apply Milestone at 4 to 7 fl oz per acre when the plants are young and before flowering. Use higher rates if the plants are older and larger. In California optimal application timing is November through March.

### For Control or Suppression of Medusahead Rye

Milestone applied broadcast at 7 to 14 fl oz/A can suppress or control medusahead rye (*Taeniatherum caput-medusae*) and downy brome (*Bromus tectorum*, also called cheatgrass). The key to optimum results is the timing of application. Applications should be made in late summer prior to rains and seed germination in order to provide the best possibility of suppression or control. In general, control or suppression will be poor if any of the seeds have germinated prior to application even if they have not yet emerged through the soil surface. Tank mixes with Accord XRT II at 12 fl oz/A, where a non-selective herbicide can be used or where desired grasses are dormant and will not be harmed, and will aid in control. Spot treatment restrictions (see spot treatment section) apply for rates above 7 fl oz/A for broadcast applications.

### Control of Terrestrial Weeds near and up to the Water's Edge

Milestone can be used to treat terrestrial weeds that extend up to the water's edge. **Do not apply directly to water.** This product must not be used to treat vegetation standing in the water. When controlling terrestrial weed species near and up to the water's edge, take precautions to minimize incidental overspray to the adjacent water. Consult local public water control authorities before applying this product near public waters. Permits may be required to treat such areas. Apply the specified rate, listed in Table 2, of Milestone as a coarse low-pressure spray as ground broadcast or spot applications. Do not apply aerially for control of weeds growing at or near the water's edge. Spray volume should be sufficient to uniformly cover foliage. Increase the spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. It is also permissible to treat target weeds within dry non-irrigation ditches and seasonally dry transitional areas between upland and lowland sites (such as flood plains, deltas, marshes, prairie potholes or vernal pools), but only at times when those sites are dry and are forecasted or managed by water control systems to remain dry for at least 2 weeks following application.

#### Use Rate Restrictions:

Do not broadcast apply more than 7 fl oz per acre of Milestone per year. The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.

#### Woody Plant Control

Milestone may be applied to control woody plants by any application method listed on the label on any site listed.

Milestone may be applied alone or in tank-mix combinations with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products. Use as directed in the Directions of Use section of the tank-mix partner. Follow Mixing Instructions under the General Mixing and Application Instructions section.

Add Milestone to tank mixes for improved brush control on species such as alder, aspen, blackberry, boxelder, cherry, coyote brush, conifers, cottonwood, elm, maple, poplar, oak, brooms (Scotch, Spanish, French, Portuguese), gorse, hackberry, Russian and Autumn olive, salt-cedar.

#### Low or High Volume Foliar Applications:

For broad spectrum brush control using a foliar application, Milestone may be added to tank mixes with Accord® XRT II, Arsenal Powerline, DMA® 4IVM, Garlon 4 Ultra, Remedy Ultra, Tordon 101M, Transline, Forestry Garlon XRT, or Garlon 3A, Rodeo®, Tordon® K, Tordon 22K or other products labeled for use on the intended site.

#### Low Volume Basal Bark Applications:

To control susceptible woody plants with stems less than 6 inches in basal diameter, apply herbicide mix (see below for rates) 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 to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems but not to the point of runoff. The use of a Spraying Systems Y2 nozzle or similar nozzle is recommended, which will narrow the spray pattern to target individual stems. Herbicide concentration should vary with tree diameter, bark thickness, volume used per acre, and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water.

Milestone may be used as a low volume basal treatment alone, for sensitive woody species in the Fabaceae family (legumes), or in combination with

other products such as Garlon 4 Ultra, Forestry Garlon XRT, Remedy Ultra for broader control of other sensitive woody species. Applications should not exceed the maximum use rate per acre for the site.

Mix Milestone at 0.5 to 5% v/v alone, or with Garlon 4 Ultra or Forestry Garlon XRT in a commercially available basal diluent (or other oils or basal diluents as recommended by the manufacturer); the basal oil should be compatible with a water soluble herbicide such as Milestone. See table 3 to calculate the amount of Milestone that can be applied per acre at the various volumes and rates. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. If using a tank mix, mix the oil-based products such as Garlon 4 Ultra thoroughly with basal oil and add any other oil-based products before adding the water based products. If the mixture stands for more than 30 minutes, reagitation may be required.

Oil and water based mixtures can separate over time. Long-term storage is not recommended without vigorous agitation prior to use or without a recommended compatibility agent.

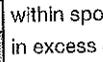
Use caution when treating areas adjacent to susceptible and desirable species to avoid root uptake and possible injury when using Milestone or other soil active herbicides

#### Low Volume Stem Bark Band Treatment

To control susceptible woody plants (see table 2) with stems less than 6 inches in basal diameter, mix 0.5 to 5 gallons of Milestone 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 anytime, including winter months.

Table 3:

% of Milestone in Basal Mix	Fluid ounces of Milestone by GPA (gallons per acre)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.0	1.3	2.6	3.8	5.1	6.4	7.7	9.0
1.5	1.9	3.8	5.8	7.7	9.6	11.5	13.4
2.0	2.6	5.1	7.7	10.2	12.8		
2.5	3.2	6.4	9.6	12.8			
3.0	3.8	7.7	11.5				
3.5	4.5	9.0	13.4				
4.0	5.1	10.2					
5.0	6.4	12.8					

 within spot treatment labeled rate  
 in excess of spot treatment labeled rate

NOTE: Avoid treating high density of stems adjacent to desirable trees with roots in the treatment zone. See table 4 for guidance on estimated volume per acre by treated stem density. Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Applications of Milestone within the root zone of desirable trees should not be made unless injury can be tolerated. Severe injury or plant death can occur if used near roses, or leguminous trees such as locusts, redbud, mimosa, and caragana.

Table 4:

Number of Stems/Acre	Estimated gallons of spray solution per acre for basal bark applications on various stem densities per acre	
	Volume Range (gal/acre)	Target Spacing (ft between brush/trees)
250	1.0 - 1.7	8.4
500	2.0 - 3.3	5.9
750	3.0 - 5.0	4.9
1000	4.0 - 6.6	4.2
1250	5.0 - 8.3	3.8
1500	5.9 - 9.9	3.4

## Cut surface

Apply Milestone in the cut surface applications listed below for control of susceptible tree species such as legumes like Albezia, mimosa, locust, etc. Mixtures of Milestone and Garlon 3A or Garlon 4 Ultra may be effective on species other than legumes such as elm, maple, oak and conifers.

Cut surface applications may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples in the spring.

### Cut-Stump Treatment

Apply Milestone as a 10% dilution v/v in water, by spraying or painting all the exposed cambium layer on the freshly cut surface. The cambium area next to the bark is the most vital area to wet.

### With Tree Injector Method

Apply by injecting 1 milliliter of 10% v/v Milestone in water through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient height. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.

### With Hack and Squirt Method

Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1 milliliter of 10% v/v Milestone in water into the pocket created between the bark and the inner stem/trunk by each cut.

### With Frill or Girdle Method

Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with 10% v/v Milestone in water.

**For use in Hawaii only:**  
**Incision Point Application (IPA) also known as Tree Injection or Hack and Squirt**

For control of susceptible tree species such as Albezia, and other legumes and susceptible tree species, make cuts around the tree trunk at a convenient height with a machete, hatchet or similar equipment so that the cuts are about 6 inches apart between centers. Inject ½ to 1 milliliter of undiluted Milestone into the pocket created between the bark and the inner stem/trunk by each cut as soon as possible after cutting. The cambium area next to the bark is the most vital area to wet.

## Preemergent Weed Control

Typically Milestone is used as a post emergent herbicide but it has preemergent activity on susceptible weeds. Use Milestone as a preemergence spray prior to weed seed germination. Control will depend upon species susceptibility, application timing, and environmental conditions, such as precipitation, following application. When applied at rates lower than 7 fl oz per acre, Milestone can provide short-term control of some susceptible weeds but when applied at 7 fl oz (broadcast) or 14 fl oz (spot treatment), weed control is extended.

Best results for use as a preemergent application for total vegetation control are obtained if Milestone at 7 fl oz per acre is tank mixed with other herbicides to broaden the weed spectrum and to control grasses. If grasses and broadleaf weeds tolerant to Milestone are present at the time of application or will germinate on the site, then tank mixtures with other herbicides, such as Accord® XRT II, Rodeo®, Dimension® 2EW or EC (annual grasses), Oust XP, Esplanade, flumioxazin, diuron, or other herbicides labeled for total vegetation control applications.

### SPOT TREATMENTS FOR AREAS SUCH AS SUBJECT POLES, SUBSTATIONS, AND OTHER SMALL AREAS

Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year to small spots for clearing around utility subject poles to help prevent fire damage, on small substations and other spot areas. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

## Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

## Warranty Disclaimer

Dow AgroSciences 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. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY 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. Crop 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 temperatures, 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 Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

## Limitation of Remedies

To the extent permitted by law, 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 Dow AgroSciences' 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.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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Produced for  
**Dow AgroSciences LLC**  
9330 Zionsville Road  
Indianapolis, IN 46268

Label Code: D02-879-007  
Replaced Label: D02-879-006  
LOES Number: 010-02112  
EPA accepted 01/30/17

## Revisions:

1. Added the following to the use site list in description: "seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools."
2. Revised the restriction for New York to read, "Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State."
3. Added the following restriction: "Not For Sale, Distribution, or Use in the San Luis Valley of Colorado."
4. Updated the Use Precautions and Restriction section and divided into two distinct sections.
5. Updated Tank Mixing with Other Herbicides section by adding, "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 statements of each product in the tank mixture."
6. Added the following use section: Control of Terrestrial Weeds at the Water's Edge



# SureGuard<sup>®</sup> HERBICIDE



**FOR USE IN CONTAINER AND FIELD GROWN CONIFERS AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES, TO MAINTAIN BARE GROUND NON-CROP AREAS AND DORMANT TURFGRASS**

Active Ingredient	By Wt.
*Flumioxazin .....	51%
Other Ingredients .....	49%
Total	100%
*(2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione)	

SureGuard<sup>®</sup> Herbicide is a water dispersible granule containing 51% active ingredient.

EPA Reg. No. 59639-120  
EPA Est. 11773-IA-01<sup>®</sup>, 39578-TX-01<sup>®</sup>, 5905-IA-01<sup>®</sup>  
Superscript is first letter of lot number.

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS & DOMESTIC ANIMALS CAUTION

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing.

FIRST AID	
<b>If inhaled:</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
<b>If on skin or clothing:</b>	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. (continued)

FIRST AID (continued)	
<b>If in eyes:</b>	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.
<b>If swallowed:</b>	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.
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 <b>800-892-0099</b> for emergency medical treatment information.	

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the 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-resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS
Users should:
<ul style="list-style-type: none"> <li>• Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.</li> <li>• Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> </ul>

### ENVIRONMENTAL HAZARDS:

This product is toxic to non-target plants and aquatic invertebrates. 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 non-target plants and aquatic organisms in neighboring areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

This pesticide is toxic to plants and should be used strictly in accordance with the drift and runoff precautions on this label in order to minimize off-site exposures.

Under some conditions this product may have a potential to run off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, such as no till, limited till and contour plowing; these methods also reduce pesticide runoff. Use of vegetation filter strips along rivers, creeks, streams, wetlands or on the downhill side of fields where runoff could occur will minimize water runoff and is recommended.

### **DIRECTIONS FOR USE**

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

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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 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 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 made of waterproof material, 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 Standards 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.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift.

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

### **DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY**

**IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.**

#### **RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield,

(continued)

(continued)

increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

**LIMITED WARRANTY**

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

**LIMITATION OF LIABILITY**

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR 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 THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

**PROMPT NOTICE OF CLAIM**

To the extent consistent with applicable law allowing such requirements, Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is later, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law, if Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

(continued)

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**NO AMENDMENTS**

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing **Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability**, which may not be modified by any oral or written agreement.

**TANK MIXES**

**NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.**

Read and follow the entire label of each product to be used in the tank mix with this product.

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**STORAGE AND DISPOSAL****PRODUCT INFORMATION**

*SureGuard* Herbicide is a preemergence and early postemergence herbicide for control of selected grass and broadleaf weeds in and around ornamental woody shrubs, deciduous trees and conifers grown outdoors in containers or in the field (in ground) and to maintain bare ground non-crop areas and dormant warm season turfgrass.

*SureGuard* Herbicide controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

*SureGuard* Herbicide may cause spotting or speckling on foliage if the spray solution directly contacts actively growing plant foliage or green bark. Leaves that receive indirect (drift) spray contact may be affected in a similar manner. Translocation of *SureGuard* Herbicide is limited, and under most conditions established and vigorously growing woody

ornamentals will rapidly outgrow any injury symptoms. **However, direct application to actively growing foliage can cause severe injury or death with sensitive ornamental plant species, especially in herbaceous bedding plants and flowers.**

**IMPORTANT:** When applied as directed, plants listed on this label have shown tolerance to *SureGuard* Herbicide. However, *SureGuard* Herbicide is a very active herbicide and the user should exercise responsible judgment and caution until familiarity is gained with this product. Due to variability within species, crop growth stage, environmental conditions and application techniques, it is recommended that users test this product under local growing conditions on a small number of plants and evaluate for 4 to 6 weeks for phytotoxicity. Testing *SureGuard* herbicide on a small number of plants will determine if the herbicide can be used safely on a widespread application. Neither the seller nor the manufacturer of *SureGuard* Herbicide has investigated the safety to plants not listed on the label.

**USE RESTRICTIONS**

- Do not apply in enclosed greenhouse structures, if plants are present.
- Do not move plants for 24 hours into enclosed greenhouses until the *SureGuard* Herbicide treated area has been watered.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not graze treated fields or hay to livestock.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply when plants are under stress from insects, diseases, animals or winter injury, planting shock or any other stresses.
- Only apply to healthy established trees and ornamentals.
- Do not apply more than 12 oz of *SureGuard* Herbicide per acre per application.
- Do not apply more than 24 oz of *SureGuard* Herbicide per acre per year.

**RESISTANCE MANAGEMENT**

Any weed population may contain or develop plants naturally resistant to herbicides in various modes of action. Resistant biotypes may eventually dominate the weed population if herbicides with the same mode of action are used repeatedly in the same field or in successive years. These resistant biotypes may not be adequately controlled by herbicides in a mode of action class for which resistance has developed. A gradual or total loss of weed control may occur over time. Other resistance mechanisms that are not linked to site of action, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

**To Delay Herbicide Resistance**

- Avoid the use of herbicides that have a similar target site mode of action in consecutive years.
- Herbicide use should be based on an Integrated Pest Management (IPM) program that includes

scouting, record keeping, and consideration of cultivation practices, water management, weed free crop seed, crop rotation, and other chemical or cultural control practices.

- Monitor treated weed population for resistance development and report suspected resistance.
- Contact your local extension or crop expert (advisor) for any additional pesticide resistance management and/or IPM recommendations for specific crops and weed biotypes.
- For further information contact Valent U.S.A. Corporation at the following toll free number 800-682-5368.

#### **PREEMERGENCE APPLICATION**

Preemergence weed control with *SureGuard* Herbicide is most effective when applied to clean, weed free soil surfaces prior to weed emergence. Moisture is necessary to activate *SureGuard* Herbicide on soil for residual weed control. Dry weather following application of *SureGuard* Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, *SureGuard* Herbicide will control susceptible germinating weeds.

When adequate moisture is not received soon after *SureGuard* Herbicide is applied to soil, weed control may be improved by utilizing shallow cultivation. If weeds begin to emerge, irrigate (1/2" of water) or cultivate uniformly with shallow tillage equipment that will not damage the crop. Deep cultivation reduces the effectiveness of *SureGuard* Herbicide and should be avoided.

#### **POSTEMERGENCE APPLICATION**

The most effective postemergence weed control with *SureGuard* Herbicide occurs when applied in combination with a surfactant to weeds less than 2 inches in height. Apply *SureGuard* Herbicide only to actively growing weeds. Applying *SureGuard* Herbicide under conditions that do not promote active weed growth will reduce herbicide effectiveness. *SureGuard* Herbicide is most effective when applied under sunny conditions at temperatures above 65°F.

*SureGuard* Herbicide is rainfast one hour after application. Applications should not be made if rain is expected within one hour of application or efficacy may be reduced.

#### **SOIL CHARACTERISTICS**

Application of *SureGuard* Herbicide to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

#### **CARRIER VOLUME AND SPRAY PRESSURE**

##### **PREEMERGENCE APPLICATION**

To ensure uniform coverage when using boom sprayers, use at least 10 gals of spray solution per acre. When making backpack applications, apply 50 to 100 gals of spray solution per acre. Nozzle selection should meet manufacturer's gallonage and pressure recommendation for preemergence herbicide application.

##### **POSTEMERGENCE APPLICATION**

To ensure thorough coverage when using boom sprayers apply at least 15 gals of spray solution per acre. Apply at least 20 gals per acre when using a boom sprayer if dense vegetation or heavy residue is present on the soil surface. When applying with a backpack sprayer, apply 1 gal of spray solution per 500 to 1,000 sq ft. Nozzle selection should meet manufacturer's gallonage and pressure recommendations for postemergence herbicide application.

#### **ADDITIVES**

##### **POSTEMERGENCE APPLICATION**

When applying *SureGuard* Herbicide after weeds emerge, mix with an agronomically approved adjuvant. When an adjuvant is to be used with this product, Valent recommends the use of a Chemical Producers and Distributors Association certified adjuvant. Mix *SureGuard* Herbicide with a crop oil concentrate that contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient when applying *SureGuard* Herbicide as part of a postemergence weed control program. Mixing compatibility should be verified by a jar test before using. Do not mix *SureGuard* Herbicide with a surfactant when applying over the top of dormant woody ornamentals or conifer trees.

A spray-grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or a 28 to 32% nitrogen solution at 1 to 2 qts/A) may be added to the spray mixture along with a crop oil concentrate or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for crop oil concentrate or non-ionic surfactant.

##### **JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND *SureGuard* Herbicide**

A jar test should be performed before mixing commercial quantities of *SureGuard* Herbicide, when using *SureGuard* Herbicide for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pt of water to a quart jar. The water should be from the same source and have the same temperature as the water used in the spray tank mixing operation.
2. Add 3 grams (approximately 1 level tsp) of *SureGuard* Herbicide for the 8 oz/A rate or 4 grams (approximately 1-1/2 tsp) for 12 oz/A rate to the jar. Gently mix until product disperses.
3. Add 60 ml (4 Tbsp or 2 fl oz) of additive to the quart jar and gently mix.
4. If nitrogen is being used, add 16 ml (1 Tbsp) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 grams of AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.

6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - a) Layer of oil or globules on the solution surface.
  - b) Flocculation: Fine particles in suspension or as a layer on the bottom of the jar.
  - c) Clabbering: Thickening texture (coagulated) like gelatin.

#### APPLICATION EQUIPMENT

**Important:** Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles, after application of *SureGuard* Herbicide. Equipment with *SureGuard* Herbicide residue remaining in the system may result in crop injury to subsequently treated crops.

#### SPRAYER PREPARATION

Before applying *SureGuard* Herbicide, clean the spray tank, as well as all hoses and booms to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. Clean spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply *SureGuard* Herbicide. If two or more products were tank mixed prior to *SureGuard* Herbicide application, follow the most restrictive cleanup procedure on the label of all products.

#### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. To ensure a uniform spray mixture, pre-slurry the required amount of *SureGuard* Herbicide with water prior to addition to the spray tank. Use a minimum of 1 gal of water per 10 oz of *SureGuard* Herbicide.
3. While agitating, slowly add the pre-slurried *SureGuard* Herbicide to the spray tank. Agitation should create a rippling or rolling action on the water surface.
4. If tank mixing *SureGuard* Herbicide with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
5. Add any required adjuvants.
6. Fill spray tank to desired level with water. **Continue agitation until spray solution has been applied.**
7. Mix only the amount of spray solution that can be applied the day of mixing. **Apply *SureGuard* Herbicide within 12 hours of mixing.**

#### SPRAYER CLEANUP

Spray equipment must be cleaned each day following *SureGuard* Herbicide application. After *SureGuard* Herbicide is applied, the following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the

- sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water and household ammonia. Use 1 gal of 3% household ammonia for every 100 gals of water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Loosen any diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm.
7. Drain tank completely.
8. Add enough clean water to the spray tank to flush hoses, booms, screens and nozzles for 2 minutes.
9. Remove all nozzles and screens and rinse them with clean water.

#### APPLICATION EQUIPMENT

Application equipment should be clean and in good repair. Nozzles should be uniformly spaced on boom and frequently checked for accuracy.

#### BROADCAST APPLICATION

Apply *SureGuard* Herbicide, and *SureGuard* Herbicide tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

#### BAND APPLICATION

When banding, use proportionately less water and *SureGuard* Herbicide per acre.

#### BACKPACK APPLICATION

When applying *SureGuard* Herbicide with a backpack sprayer follow all above restrictions. Calibrate backpack sprayers to deliver 1 gal of spray solution per 500 to 1,000 sq ft.

#### For Backpack Applications of *SureGuard* Herbicide at 10 oz per acre

Application Volume	Amount of <i>SureGuard</i> Herbicide to mix in 1 gal of water	Amount of <i>SureGuard</i> Herbicide to mix in 2 gals of water	Amount of <i>SureGuard</i> Herbicide to mix in 3 gals of water
1 gal per 500 sq ft (= 87 GPA)	1-1/4 tsp	2-1/2 tsp	3-3/4 tsp
1 gal per 750 sq ft (= 58 GPA)	1-3/4 tsp	3-1/2 tsp	5-1/4 tsp
1 gal per 1,000 sq ft (= 43.5 GPA)	2-1/2 tsp	5 tsp	7-1/2 tsp

1 level teaspoon (tsp) holds 2.8 grams of *SureGuard* Herbicide

Example: Applicator wants to spray 1 gal of *SureGuard* Herbicide solution per 1,000 sq ft of ground

bed, and wants to mix up 2 gals of spray solution. Therefore, applicator should mix 5 teaspoons of *SureGuard* Herbicide in 2 gals of water.

### AERIAL APPLICATION

To obtain satisfactory weed control with aerial application of *SureGuard* Herbicide, coverage must be uniform. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying *SureGuard* Herbicide within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

#### Volume Pressure

Apply *SureGuard* Herbicide in 5 to 10 gals of water per acre, with a maximum spray pressure of 40 PSI. Application at less than 5 gals per acre may not provide adequate weed control. Higher gallonage applications generally provide more consistent weed control.

#### Nozzles and Nozzle Operation

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles such as diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0 and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

#### Adjuvants

Refer to the additive section or the tank mix partners label for adjuvant recommendation.

### CALIBRATION TABLE

<b>SUREGUARD HERBICIDE RATES OZ/A</b>	<b>SUREGUARD HERBICIDE RATES GRAMS/GAL</b>	<b>SUREGUARD HERBICIDE RATES PER GAL</b>
8	2.3	3/4 tsp
10	2.8	1 level tsp
12	3.4	1-1/4 tsp

### SPRAY DRIFT REDUCTION

Do not apply under circumstances where possible drift to unprotected persons or to food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial or ground applications when the wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site

- on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For ground boom applications, apply with nozzle height no more than 4 ft above the ground or crop canopy.

### WEEDS CONTROLLED

When *SureGuard* Herbicide is applied preemergence or postemergence at recommended rates and weed stages, the following grasses and broadleaf weeds are controlled.

**TABLE 1. WEEDS CONTROLLED BY SUREGUARD HERBICIDE**

<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
Alyssum, Hoary	<i>Berteroa incana</i>
Amaranth	
Palmer	<i>Amaranthus palmeri</i>
Spiny	<i>Amaranthus spinosus</i>
American Burnweed	<i>Erechtites hieracifolia</i>
Barnyardgrass*	<i>Echinochloa crus-galli</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Bittercress, Hairy	<i>Cardamine hirsuta</i>
Bluegrass, Annual*	<i>Poa annua</i>
Burclover, California	<i>Medicago polymorpha</i>
Carpetweed	<i>Mollugo verticillata</i>
Chamberbitter	<i>Phyllanthus urinaria</i>
Chickweed	
Common	<i>Stellaria media</i>
Mouseear	<i>Cerastium vulgatum</i>
Crabgrass	
Large*	<i>Digitaria sanguinalis</i>
Smooth*	<i>Digitaria ischaemum</i>
Southern*	<i>Digitaria ciliaris</i>
Croton, Tropic	<i>Croton glandulosus</i> var. <i>septentrionalis</i>
Dandelion*	<i>Taraxacum officinale</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Doveweed	<i>Murdannia nudiflora</i>
Eclipta	<i>Eclipta prostrata</i>
Filaree, Redstem*	<i>Erodium cicutarium</i>

(continued)

\*Preemergence control only.

**TABLE 1. WEEDS CONTROLLED BY SUREGUARD HERBICIDE (continued)**

COMMON NAME	SCIENTIFIC NAME
Foxtail	
Bristly*	<i>Setaria verticillata</i>
Giant*	<i>Setaria faberi</i>
Green*	<i>Setaria viridis</i>
Yellow*	<i>Setaria glauca</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Goosegrass*	<i>Eleusine indica</i>
Groundsel, Common	<i>Senecio vulgaris</i>
Groundsel Tree	<i>Baccharis halimifolia</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed*	<i>Conyza canadensis</i>
Indigo, Hairy	<i>Indigofera hirsuta</i>
Ivy, Ground*	<i>Glechoma hederacea</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Kyllinga, Green*	<i>Kyllinga brevifolia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, Common	<i>Chenopodium album</i>
Liverwort	<i>Marchantia polymorpha</i>
Lovegrass, California*	<i>Eragrostis diffusa</i>
Mallow	
Common	<i>Malva neglecta</i>
Little	<i>Malva parviflora</i>
Venice	<i>Hibiscus trionum</i>
Marsh Parsley	<i>Apium leptophyllum</i>
Marsh Yellowcress	<i>Rorippa islandica</i>
Mayweed*	<i>Anthemis cotula</i>
Morningglory	
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>
Ivyleaf	<i>Ipomoea hederacea</i>
Red/Scarlet	<i>Ipomoea coccinea</i>
Smallflower	<i>Jacquemontia tamnifolia</i>
Tall	<i>Ipomoea purpurea</i>
Moss	<i>Bryum</i> spp.
Mulberry Weed	<i>Fatua villosa</i>
Mustard	
Tumble	<i>Sisymbrium altissimum</i>
Wild	<i>Brassica kaber</i>
Nightshade	
Black	<i>Solanum nigrum</i>
Eastern Black	<i>Solanum ptycanthum</i>
Hairy	<i>Solanum sarrachoides</i>
Northern Willowherb	<i>Epilobium cillatum</i>
Panicum	
Fall*	<i>Panicum dichotomiflorum</i>
Texas*	<i>Panicum texanum</i>
Parsley-Piert	<i>Alchemilla arvensis</i>
Pearlwort, Birdseye*	<i>Sagina procumbens</i>

(continued)

\*Preemergence control only.

**TABLE 1. WEEDS CONTROLLED BY SUREGUARD HERBICIDE (continued)**

COMMON NAME	SCIENTIFIC NAME
Pennycress, Field	<i>Thlaspi arvense</i>
Phyllanthus, Longstalked	<i>Phyllanthus tenellus</i>
Pigweed	
Prostrate	<i>Amaranthus blitoides</i>
Redroot	<i>Amaranthus retroflexus</i>
Smooth	<i>Amaranthus hybridus</i>
Tumble	<i>Amaranthus albus</i>
Pineapple-weed*	<i>Matricaria matricarioides</i>
Plantain	
Broadleaf*	<i>Plantago major</i>
Buckhorn*	<i>Plantago lanceolata</i>
Poinsettia, Wild	<i>Euphorbia heterophylla</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane, Common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Ragweed	
Common	<i>Ambrosia artemisiifolia</i>
Giant	<i>Ambrosia trifida</i>
Redmaids	<i>Calandrinia ciliata</i>
Redweed	<i>Melochia corchorifolia</i>
Rocket, Yellow	<i>Barbarea vulgaris</i>
Senna, Coffee	<i>Cassia occidentalis</i>
Sesbania, Hemp	<i>Sesbania exaltata</i>
Shepherd's-Purse	<i>Capsella bursa-pastoris</i>
Sida, Prickly (Teaweed)	<i>Sida spinosa</i>
Signalgrass*	<i>Brachiaria platyphylla</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Sowthistle, Annual	<i>Sonchus oleraceus</i>
Spiderwort, Tropical	<i>Commelina benghalensis</i>
Spurge	
Petty	<i>Euphorbia peplus</i>
Prostrate	<i>Euphorbia humistrata</i>
	Engelm
Spotted	<i>Euphorbia maculata</i>
Starbur, Bristly*	<i>Acanthospermum hispidum</i>
	<i>Emilia</i> spp.
Tassel-flower	<i>Crassocephalum crepidoides</i>
Thickhead	
Thistle	
Canada*	<i>Cirsium arvense</i>
Russian	<i>Salsola iberica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Waterhemp	
Common	<i>Amaranthus rudis</i>
Tall	<i>Amaranthus tuberculatus</i>
Woodsorrel, Yellow*	<i>Oxalis stricta</i>

**DIRECTIONS FOR USE IN ESTABLISHED CONTAINER AND FIELD GROWN CONIFERS**

Apply *SureGuard* Herbicide as a single or split application to established container and field grown conifers. The conifers listed in Table 2 have exhibited tolerance to *SureGuard* Herbicide only when the product is applied to dormant or hardened off plant material. If applied over the top of plant foliage, apply *SureGuard* Herbicide before spring bud break or after conifers have sufficiently hardened off. During periods of cool, cloudy weather, use caution to ensure conifers have hardened off prior to herbicide application. Do not apply to conifers within 1 year of seedling emergence.

**PREEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard* Herbicide per broadcast acre before weeds emerge. Apply to weed free, established conifers grown in containers or in the field (in ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. *SureGuard* Herbicide may be sprayed directly over conifers listed in Table 2, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, *SureGuard* Herbicide will typically not effect subsequent growth. If conifers are not dormant or hardened off at time of application, and foliar injury cannot be tolerated, apply *SureGuard* Herbicide as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage. Mechanically incorporating *SureGuard* Herbicide after application will disturb soil surfaces, which may reduce herbicidal efficacy. When applied before weed germination, *SureGuard* Herbicide will control broadleaf and grassy weeds listed in Table 1.

**POSTEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard* Herbicide per broadcast acre after weeds have emerged. *SureGuard* Herbicide may be sprayed directly over conifers listed in Table 2, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, *SureGuard* Herbicide will typically not affect subsequent growth. If conifers are not dormant or hardened off at the time of application, and foliar injury cannot be tolerated, apply *SureGuard* Herbicide as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage.

If applied when weeds are actively growing and no larger than 2 inches in height, *SureGuard* Herbicide will provide postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergent control of *SureGuard* Herbicide may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

**TANK MIXTURES FOR CONTAINER AND FIELD GROWN CONIFERS**

Tank mixing *SureGuard* Herbicide with other pre-emergence and postemergence herbicides registered for use on conifers may provide a broader spectrum of weed control than *SureGuard* Herbicide applied alone. *SureGuard* Herbicide may also be applied as part of a postemergence burndown program for control of annual and perennial weeds. Tank mixing *SureGuard* Herbicide with glyphosate will increase the speed of burndown compared to glyphosate applied alone. *SureGuard* Herbicide may be tank mixed with products containing the following active ingredients labeled for use in conifers:

- clethodim                      oryzalin                      simazine\*
- glyphosate\*                      prodiamine

\*Do not apply glyphosate or simazine to containerized ornamentals.

**IMPORTANT:** Completely read and follow the label of any potential *SureGuard* Herbicide tank mix partner. When tank mixing *SureGuard* Herbicide with other herbicides, always follow the most restrictive label limitations and precautions on the label of any tank mix partner.

**TOLERANT CONIFERS**

*SureGuard* Herbicide may be applied to the conifer species listed in Table 2. If a desired conifer species is not listed in Table 2, users should evaluate the safety of *SureGuard* Herbicide on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Testing *SureGuard* Herbicide on a small number of plants will determine if *SureGuard* Herbicide can be used safely on a widespread basis.

**RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply *SureGuard* Herbicide within 30 days.

**TABLE 2. TOLERANT CONIFERS**

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	<i>Thuja occidentalis</i>
Oriental	<i>Thuja orientalis</i>
Fir	
Concolor	<i>Abies concolor</i>
Cork Bark	<i>Abies lasiocarpa</i>
Douglas	<i>Pseudotsuga menziesii</i>
Fraser	<i>Abies fraseri</i>
Grand	<i>Abies grandis</i>
Noble	<i>Abies procera</i>
Turkish	<i>Abies bommuelleriana</i>
Hemlock	
Eastern	<i>Tsuga canadensis</i>
Western	<i>Tsuga heterophylla</i>

(continued)

**TABLE 2. TOLERANT CONIFERS (continued)**

COMMON NAME	SCIENTIFIC NAME
Juniper	
Blue Star	<i>Juniperus scopularum</i>
Creeping	<i>Juniperus horizontalis</i>
Japanese Garden	<i>Juniperus chinensis</i>
Tamarix	<i>Juniperus sabina</i>
Pine	
Austrian	<i>Pinus nigra</i>
Eastern White	<i>Pinus strobus</i>
Jack	<i>Pinus banksiana</i>
Japanese Black	<i>Pinus thunbergiana</i>
Loblolly	<i>Pinus taeda</i>
Lodgepole	<i>Pinus contorta</i>
Longleaf	<i>Pinus palustris</i>
Mugo	<i>Pinus mugo</i>
Ponderosa	<i>Pinus ponderosa</i>
Sand	<i>Pinus clausa</i>
Scotch	<i>Pinus sylvestris</i>
Shortleaf	<i>Pinus echinata</i>
Slash	<i>Pinus elliotii</i>
Virginia	<i>Pinus virginiana</i>
Spruce	
Blue	<i>Picea pungens</i>
Dwarf Alberta	<i>Picea glauca conica</i>
Norway	<i>Picea abies</i>
Sitka	<i>Picea sitchensis</i>
Yew	
English	<i>Taxus baccata</i>
Japanese	<i>Taxus cuspidata</i>

**DIRECTIONS FOR USE IN CONTAINER AND FIELD GROWN DECIDUOUS TREES AND NON-BEARING FRUIT AND NON-BEARING NUT TREES**

*SureGuard* Herbicide may be applied as single or split applications to container and field grown deciduous trees with an established root system. The deciduous trees listed in Table 3 have exhibited tolerance to *SureGuard* Herbicide only when applied to the soil and base of plants. Application of *SureGuard* Herbicide to deciduous foliage or green bark may result in unacceptable injury.

*SureGuard* Herbicide may be applied to established (or transplanted) container and field grown deciduous trees. Do not apply to trees that are less than one year old or have been transplanted less than one year, unless completely protected by non-porous wraps, grow tubes, waxed protectors or other forms of protection to young foliage and/or bark. Do not harvest fruit or nuts from treated trees within one year of application.

**IMPORTANT:** Direct application of *SureGuard* Herbicide to the soil surface and away from plant foliage and bark. Avoid direct spray contact on plant surfaces, foliage and green bark or injury may result. Application of *SureGuard* Herbicide after bud swell may cause injury if herbicide contacts foliage. Avoid application under environmental conditions that favor drift to non-targeted areas.

**PREEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard*

Herbicide per broadcast acre as a preemergence (to weed emergence) application. Apply *SureGuard* Herbicide to weed free deciduous trees grown in containers or in the field (in-ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. *SureGuard* Herbicide may be applied to the soil surface and base of deciduous trees, provided that direct and indirect (drift) applications to plant foliage, flowers and green bark does not occur. Mechanically incorporating *SureGuard* Herbicide will disturb soil surfaces, which may reduce herbicidal efficacy. The use of spray shields that limit exposure of foliage and bark to *SureGuard* Herbicide is suggested. When applied before weed germination, *SureGuard* Herbicide will control broadleaf and grassy weeds listed in Table 1.

**POSTEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard* Herbicide per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). Make postemergence (to weed emergence) applications of *SureGuard* Herbicide when weeds are actively growing and are no larger than 2 inches in height. The addition of a surfactant enhances *SureGuard* Herbicide activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of *SureGuard* Herbicide. When applied after weed germination, *SureGuard* Herbicide will provide preemergence and postemergence control of broadleaf weeds and grasses listed in Table 1. If plant injury is a concern, use a spray shield to limit the exposure of trees to *SureGuard* Herbicide.

Postemergence control of *SureGuard* Herbicide may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

**TANK MIXTURES FOR FIELD AND CONTAINER GROWN DECIDUOUS TREES**

Tank mixing *SureGuard* Herbicide with other pre-emergence and postemergence herbicides registered for use on deciduous trees may provide a broader spectrum of weed control than *SureGuard* Herbicide alone. *SureGuard* Herbicide may also be applied as part of a postemergence burndown program of control of annual and perennial weeds. Tank mixing *SureGuard* Herbicide with glyphosate will increase the speed of burndown compared to glyphosate applied alone. *SureGuard* Herbicide may be tank mixed with products containing the following active ingredient labeled for use in deciduous trees:

- clethodim                      oryzalin                      prodiamine
- glyphosate\*                  pendimethalin              simazine\*

\*Do not apply glyphosate or simazine to containerized plants.

**IMPORTANT:** Completely read and follow the label of any herbicides mixed with *SureGuard* Herbicide. When tank mixing *SureGuard* Herbicide with other herbicides always follow the most restrictive limitations and precautions on the label of any tank mix partner.

**TOLERANT DECIDUOUS TREES, NON-BEARING FRUIT AND NON-BEARING NUT TREES**

*SureGuard* Herbicide may be applied as a directed spray to the deciduous, non-bearing fruit and non-bearing nut trees species listed in Table 3. If a desired tree species is not listed in Table 3, users should evaluate the safety of *SureGuard* Herbicide on a small number of plants under commercial growing conditions and monitor plant response for four to six weeks for phytotoxicity. Testing *SureGuard* Herbicide on a small number of plants will determine if *SureGuard* Herbicide can be used safely on a widespread basis.

**RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply *SureGuard* Herbicide within 30 days.

**TABLE 3. TOLERANT DECIDUOUS TREE SPECIES**

COMMON NAME	SCIENTIFIC NAME
Apricot*	<i>Prunus</i> spp.
Ash	<i>Fraxinus</i> spp.
Birch	<i>Betula</i> spp.
Buckeye	<i>Aesculus</i> spp.
Cherry*	<i>Prunus</i> spp.
Chestnut	<i>Castanea</i> spp.
Citrus*	<i>Citrus</i> spp.
Dogwood	<i>Cornus</i> spp.
Eucalyptus	<i>Eucalyptus</i> spp.
Ginkgo	<i>Ginkgo</i> spp.
Hawthorn	<i>Crataegus</i> spp.
Honeylocust	<i>Gleditsia</i> spp.
Larch	<i>Larix</i> spp.
Lilac	<i>Syringa</i> spp.
Maple**	<i>Acer</i> spp.
Mrytle, Crepe	<i>Lagerstroemia indica</i>
Oak	<i>Quercus</i> spp.
Poplar	<i>Populus</i> spp.
Peach*	<i>Prunus</i> spp.
Plum*	<i>Prunus</i> spp.
Pecan*	<i>Carya</i> spp.
Redbud	<i>Cercis canadensis</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus</i> spp.
Walnut, Black	<i>Juglans nigra</i>
Willow	<i>Salix</i> spp.

\* Non-bearing trees only.

\*\*Not for use on maple trees used for production of maple sap or syrup.

**DIRECTIONS FOR USE AROUND ESTABLISHED WOODY LANDSCAPE ORNAMENTALS AND TO MAINTAIN BARE GROUND NON-CROP AREAS**

In residential and commercial landscapes, *SureGuard* Herbicide should only be applied by commercial licensed applicators. Application of *SureGuard* Herbicide in the vicinity of ornamental plants is limited to directed sprays around well established woody shrubs and trees such as azalea, euonymus, holly, and the conifers and deciduous trees listed in Tables 2 and 3. *SureGuard* Herbicide may also be applied to maintain bare ground in non-crop areas in apartment complexes, fence rows, gravel surfaces, ground mats, golf courses, lumberyards, office complexes, parks, parking areas, recreational sites, schools, sidewalks, storage areas and other similar industrial sites. Do not apply *SureGuard* Herbicide within any enclosed structure in residential or commercial landscapes.

*SureGuard* Herbicide offers postemergence and residual control of susceptible grasses and broad-leaf weeds, as well as additional mode of action to assist in the control of resistant weeds. The length of residual control is dependent on the rate applied, rainfall and temperature. Length of residual control will decrease as temperature and precipitation increase.

**IMPORTANT:** Contact with *SureGuard* Herbicide spray or spray drift may cause severe injury or destruction of certain desirable plants, especially herbaceous species such as bedding plants or direct seeded annual and perennial flowers. Therefore, do not apply *SureGuard* Herbicide over the top of ornamental plants growing in the landscape, and do not allow *SureGuard* Herbicide spray to contact, drift or splash from soil onto the foliage, green stems, exposed roots or fruit of desirable plants. Avoid application of *SureGuard* Herbicide under conditions that favor drift of sprays onto desired ornamentals or turfgrass. The use of spray shields that limit the plant exposure to *SureGuard* Herbicide is highly recommended when applying *SureGuard* Herbicide near desirable plants.

Do not apply *SureGuard* Herbicide around landscape ornamentals until plants have been actively growing for at least 30 days after transplanting, or for at least two months before ornamentals will be planted into treated areas.

**PREEMERGENCE APPLICATION (NO WEEDS ARE PRESENT)**

Mix 1-1/4 to 2-1/2 tsp of *SureGuard* Herbicide per gal (10 oz/A) of spray solution, and apply 1 gal of spray solution to 500 - 1,000 sq ft (10 oz/A) prior to weed germination (see calibration table for backpack sprayers). Apply *SureGuard* Herbicide to weed free soil, mulch or gravel surfaces. Moisture is necessary to activate *SureGuard* Herbicide on soil for residual weed control. When applied before weed germination, *SureGuard* Herbicide will control the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to *SureGuard* Herbicide **only** when applied to the soil at the base of the plant. For maximum plant safety when using around desirable ornamentals, direct applications of *SureGuard* Herbicide to the soil, and leave a sufficient untreated buffer to ensure spray solution does not contact desired plants. Do not harvest fruit or nuts from treated trees within one year of application.

#### **POSTEMERGENCE APPLICATION (WEEDS ARE PRESENT)**

Mix 1-1/4 to 2-1/2 tsp of *SureGuard* Herbicide per gal (10 oz/A) and apply 1 gal of spray solution to 500 - 1,000 sq ft to actively growing weeds (see calibration chart for backpack sprayers). Tank mixing *SureGuard* Herbicide with glyphosate will increase the spectrum of postemergent weed control over *SureGuard* Herbicide alone, provide faster postemergence weed control than glyphosate alone, and provide pre and postemergence control of the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to applications of *SureGuard* Herbicide plus glyphosate **only** when applied to the soil at the base of the plant, and sprays do not directly contact or drift onto desirable plants. For maximum plant safety when using around desirable ornamentals, direct applications of *SureGuard* Herbicide plus glyphosate towards the soil, and leave a sufficient non-treated buffer to ensure spray solution does not contact desired plants.

Thorough spray coverage of weeds is necessary to maximize weed control. Spray coverage should be uniform, but do not spray to the point of runoff.

Do not harvest fruit or nuts from treated trees within one year of application.

**IMPORTANT:** Completely read and follow the glyphosate label. When tank mixing *SureGuard* Herbicide with other products, always follow the most restrictive use conditions on either label.

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications per year.

#### **DIRECTIONS FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS IN AND AROUND ORNAMENTAL NURSERIES**

*SureGuard* Herbicide, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply *SureGuard* Herbicide only to:

- Bare ground areas around buildings and other structures. Do not apply within any structure.
- Bare ground along fence rows.
- Gravel surfaces and driveways.
- Ground matting and gravel pads prior to the addition of containerized plants (conifers, deciduous trees and ornamentals).

**IMPORTANT:** Follow all applicable directions as outlined above under General Information. See Table 1 for a list of grasses and broadleaf weeds controlled by *SureGuard* Herbicide.

*SureGuard* Herbicide offers residual and postemergence control of susceptible grasses and broadleaf weeds as well as additional mode of action to assist in the control of resistant weeds. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

#### **PREEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard* Herbicide per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of *SureGuard* Herbicide should be made to weed free surfaces. Moisture is necessary to activate *SureGuard* Herbicide for residual weed control. Dry weather following application of *SureGuard* Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, *SureGuard* Herbicide will control susceptible germinating weeds.

#### **POSTEMERGENCE APPLICATION**

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *SureGuard* Herbicide per broadcast acre plus a surfactant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). The addition of a surfactant enhances *SureGuard* Herbicide activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of *SureGuard* Herbicide. Emerged weeds are controlled postemergence with *SureGuard* Herbicide, however, translocation of *SureGuard* Herbicide within a weed is limited, and control is affected by spray coverage and by the addition of a surfactant. The most effective postemergence weed control with *SureGuard* Herbicide occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply *SureGuard* Herbicide within 30 days.

#### **DIRECTIONS FOR USE ON DORMANT WARM-SEASON TURFGRASS GROWN ON RESIDENTIAL SITES, GOLF COURSES, SOD PRODUCTION AND SIMILAR AREAS**

*SureGuard* Herbicide may be applied as a single or split application to well established dormant turfgrass listed in Table 4. *SureGuard* Herbicide will provide Preemergence and early postemergence control of annual bluegrass, chickweed, henbit and other winter annual weeds found in Table 1. *SureGuard* Herbicide will provide preemergence control of crabgrass, goosegrass and other summer annual weeds found in Table 1. *SureGuard* Herbicide may be applied to dormant turfgrass in such areas as apartment complexes, golf courses, sod farms, roadsides, sports fields, campgrounds, office complexes, parks, parking areas, recreational sites, schools and other similar sites. Bermudagrass exhibits tolerance to *SureGuard* Herbicide only when applied to com-

pletely dormant turf in the late fall and before active growth resumes in the late winter/early spring. Application of *SureGuard* Herbicide to actively growing turfgrass (warm season and cool season) or during green-up may cause unacceptable injury.

### BROADCAST APPLICATIONS

Apply 8 to 12 oz of *SureGuard* Herbicide per broadcast acre as a preemergence (to weed emergence) application. If weeds are present at the time of application apply *SureGuard* Herbicide plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of *SureGuard* Herbicide when weeds are actively growing and no larger than 2 inches in height. Thorough spray coverage is necessary to maximize the postemergence activity of *SureGuard* Herbicide. When applied after weed germination, *SureGuard* Herbicide will provide preemergence and postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergence control of *SureGuard* Herbicide may be more effective on certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

*SureGuard* Herbicide will provide best control of annual bluegrass when applied in the late fall while plants are small. Control may be less effective when applied in the winter under cold conditions when weeds are not actively growing. A second application of *SureGuard* Herbicide may be required to provide adequate season-long annual bluegrass control. *SureGuard* Herbicide will provide best control of crabgrass, goosegrass and other summer annual weeds when applied in the late winter before turfgrass resumes active growth.

### SPOT TREATMENTS

Mix 2-1/2 tsp per gal of *SureGuard* Herbicide and 2 tsp (1/3 fl oz) of non-ionic surfactant in one gal of water and apply one gal of spray solution per 1,000 sq ft. Occasionally shake the spray solution while spraying to ensure the spray solution remains well mixed. Spray the target weeds until the leaves are wet.

### TANK MIXING WITH OTHER TURFGRASS HERBICIDES

*SureGuard* Herbicide will suppress, but will not effectively control established winter perennial weeds such as dandelion and clover. *SureGuard* Herbicide may be tank mixed with metsulfuron to control winter perennial weeds.

**IMPORTANT:** If applied in the spring after turfgrass resumes active growth, *SureGuard* Herbicide will cause temporary discoloration of turf and delay greenup. Read and follow the label of any herbicides mixed with *SureGuard* Herbicide. When tank mixing *SureGuard* Herbicide with other herbicides, always follow the most restrictive limitations and precautions on the label of any tank mix partner.

### USE PRECAUTIONS

- Use Around Bentgrass and Poa Greens: *SureGuard* Herbicide has limited potential for lateral movement on level terrain, but can potentially move down slope after excessive rainfall and affect sensitive turf species such as bentgrass and *Poa trivialis*. When applied upslope from bentgrass greens or bermudagrass greens overseeded with *Poa trivialis*, allow an adequate buffer zone between greens and the treated area. If uncertain about the size of the buffer, 15 feet is suggested. Risk of movement is decreased when *SureGuard* Herbicide is applied to soil at less than field capacity. Avoid application when heavy rain is imminent or when the soil is saturated.

### RESTRICTIONS AND LIMITATIONS

- Do not apply to golf course putting greens.
- Do not apply to warm season turfgrass that has been overseeded with cool season turfgrass (eg., perennial rye, *Poa trivialis*).
- Do not irrigate within 1 hour before or after application.
- Do not apply if rain is expected within 1 hour after application.
- Do not mow turfgrass within 12 hours after application.
- Do not apply within 30 days prior to cutting or lifting sod.
- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply *SureGuard* Herbicide within 30 days.
- Do not apply in fall before turfgrass has ceased active growth or in late winter/ early spring after turfgrass has resumed active growth.
- Allow 8 weeks between application and seeding or sodding of turfgrass.

TABLE 4. TOLERANT TURFGRASS SPECIES

COMMON NAME	SCIENTIFIC NAME
Bermudagrass	<i>Cynodon</i> spp.

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## STORAGE AND DISPOSAL

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### PESTICIDE STORAGE

Keep pesticide in original container.  
Store in a cool, dry, secure place.  
Do not put formulation or dilute spray solution into food or drink containers.  
Do not store or transport near feed or food.  
Not for use or storage in or around the home.  
For help with any spill, leak, fire or exposure involving this material, call day or night **(800) 892-0099**.  
Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

### PESTICIDE DISPOSAL

Waste 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. Offer for recycling, if available. Clean container 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.

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Manufactured for

**Valent U.S.A. Corporation**

P.O. Box 8025

Walnut Creek CA 94596-8025

Form 1732-C

Made in U.S.A.

EPA Reg. No. 59639-120

EPA Est. 11773-IA-01®, 39578-TX-01®, 5905-IA-01®

Superscript is first letter of lot number.

Information contained in this booklet is accurate at the time of printing. Since product testing is a continuous process, please read and follow the directions on the product label for the most current directions and precautionary statements.

Always check with your state to verify state registration status or call 800-89-VALENT (898-2536).



For state registration and/or supplemental labels, please call or visit us online.

*Products That Work, From People Who Care*® | [valentpro.com](http://valentpro.com) | 800-89-VALENT (898-2536)

**Always read and follow label instructions.**

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40706HE0022

# VISION™

Herbicide for weed control in asparagus, barley, conservation reserve programs, corn (field, pop, seed, silage), cotton (preplant), fallow croplands, general farmstead (noncropland), grass grown for seed, hay, oats, pasture, proso millet, rangeland, sorghum, soybean, sugarcane, triticale, turf and wheat.

<b>ACTIVE INGREDIENT:</b>	
Dicamba Acid	40.0%
<b>OTHER INGREDIENTS</b>	60.0%
<b>TOTAL</b>	100.0%

\*Contains 3.8 lbs. dicamba acid per gallon or 450 grams per liter.  
\*CAS No. 1918-00-9

## 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 DANGER

**CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE.** Harmful if swallowed, inhaled, or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**In Case of Spill:** In case of large-scale spillage regarding this product, call: CHEMTREC 1-800-424-9300.

#### FIRST AID

**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 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 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 a poison control center or doctor. Do not give anything to an unconscious person.

**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.

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

**NOTICE NUMBER:** In case of an emergency involving this product, call CHEMTREC toll free at 1-800-424-9300. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONS AND DIRECTIONS FOR USE.

NET CONTENTS: 2.5 GALLONS

#### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or 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 or rinsate. Apply this product only as directed on the label. This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. 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. Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions and "Conditions of Sale and Warranty" are to be followed. This labeling must be in the user's possession during application.

#### STORAGE AND DISPOSAL

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. This product may not be mixed, loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sinkholes.

**PESTICIDE STORAGE:** Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material. Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides.

**PESTICIDE DISPOSAL:** Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, state or local procedures under Subtitle C of the Resource Conservation and Recovery Act. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of Federal law.

**CONTAINER DISPOSAL: Non-Refillable Containers (1, 2.5, 30 & 55 gallon):** Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Non-Refillable (<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. **Non-Refillable (>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. **Pressure rinse as follows (all sizes):** 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 (250 gallon & bulk):** 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.

**Steps to be taken in case material is released or spilled:** Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing, and wash affected skin areas with soap and water. Wash clothing before re-use. Keep the spill out of all sewers and open bodies of water.

AD 062112

EPA Reg. No. 5905-576  
EPA Est. No. 42750-MO-001

Manufactured For  
**HELENA CHEMICAL COMPANY**  
225 SCHILLING BOULEVARD, SUITE 300  
COLLIERVILLE, TENNESSEE 38017

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING

# VISION™

*Herbicide for weed control in asparagus, barley, conservation reserve programs, corn (field, pop, seed, silage), cotton (preplant), fallow croplands, general farmstead (noncropland), grass grown for seed, hay, oats, pasture, proso millet, rangeland, sorghum, soybean, sugarcane, triticale, turf and wheat.*

<b>ACTIVE INGREDIENT:</b>	40.0%
Dicamba Acid* .....	60.0%
<b>OTHER INGREDIENTS</b> .....	100.0%
<b>TOTAL</b> .....	

\*Contains 3.8 lbs. dicamba acid per gallon or 450 grams per liter.  
\*CAS No. 1918-00-9

## 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 DANGER

**CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE.** Harmful if swallowed, inhaled, or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**In Case of Spill:** In case of large-scale spillage regarding this product, call: CHEMTREC 1-800-424-9300.

#### FIRST AID

**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 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 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 a poison control center or doctor. Do not give anything to an unconscious person.

**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.

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

**HOT LINE NUMBER:** In case of an emergency involving this product, call CHEMTREC toll free at 1-800-424-9300. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

**SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONS AND DIRECTIONS FOR USE.**

AD 062112

EPA Reg. No. 5905-576

EPA Est. No. 42750-MO-001

Manufactured For  
**HELENA CHEMICAL COMPANY**  
225 SCHILLING BOULEVARD, SUITE 300 • COLLIERVILLE, TENNESSEE 38017

Job #62358



### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are made of barrier laminate, butyl rubber, nitrile rubber or Viton. If you want more options, follow the instructions for category F of an EPA chemical resistance category chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks
- Protective eyewear

See "Engineering Controls" for additional requirements and exceptions.

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

### ENGINEERING CONTROLS STATEMENT

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.

Pilots must use cockpits in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)].

### USER SAFETY RECOMMENDATIONS

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, 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

Do not apply directly to water, or 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 or rinsates. Apply this product only as directed on the label.

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

#### Ground and Surface Water Protection

**Point source contamination:** To prevent point source contamination, do not mix or load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. Do not apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment wash waters, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

**Care must be taken when using this product to prevent:** a) back siphoning into wells, b) spills, or c) improper disposal of excess pesticide, spray mixtures or rinsates. Check valves or antisiphoning devices must be used on all mixing equipment.

**Movement by surface runoff or through soil:** Do not apply under conditions which favor runoff. Do not apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for groundwater contamination. Ground water contamination may occur in areas where soils are permeable or coarse and ground water is near the surface. Do not apply to soils classified as sand with less than 3% organic matter and where groundwater depth is shallow. To minimize the possibility of ground water contamination, carefully follow application rate recommendations as affected by soil type in the "General Information" section of this label.

**Movement by water erosion of treated soil:** Do not apply or incorporate this product through any type of irrigation equipment nor by flood or furrow irrigation. Ensure treated areas have received at least one-half inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

### ENDANGERED SPECIES CONCERNS

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of Federal law.



## 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.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions and "Conditions of Sale and Warranty" are to be followed. This labeling must be in the user's possession during application.

### 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 24 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
- Chemical-resistant footwear 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 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 or allow others to enter until sprays have dried.

## STORAGE AND DISPOSAL

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. This product may not be mixed, loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sinkholes.

**PESTICIDE STORAGE:** Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material. Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides.

**PESTICIDE DISPOSAL:** Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility.

Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, state or local procedures under Subtitle C of the Resource Conservation and Recovery Act. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of Federal law.

#### CONTAINER DISPOSAL:

**Non-refillable containers (1, 2.5, 30 & 55 gallon):** Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**Non-Refillable (<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.

**Non-Refillable (>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.

**Pressure rinse as follows (all sizes):** 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.

(continued)

## STORAGE AND DISPOSAL (cont.)

### CONTAINER DISPOSAL: (cont.)

**Refillable Container (250 gallon & bulk):** 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.

### Steps to be taken in case material is released or spilled:

Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing, and wash affected skin areas with soap and water. Wash clothing before re-use. Keep the spill out of all sewers and open bodies of water.

## I. GENERAL INFORMATION

**VISION™** herbicide is an emulsifiable formulation intended for control or suppression of many annual, biennial, and perennial broadleaf weeds as well as woody brush and vines listed in Table 1. **VISION™** may be used for control of these weeds in asparagus, corn (field, pop, seed, silage), cotton (preplant), conservation reserve programs, fallow cropland, grass grown for seed, hay, pasture, proso millet, rangeland, general farmstead (non-cropland), small grains, sorghum, soybean, sugarcane, and turf.

### MODE OF ACTION

**VISION™** is readily absorbed by plants through shoot and root uptake, translocates throughout the plant's system, and accumulates in areas of active growth. **VISION™** interferes with the plant's growth hormones (auxins) resulting in death of many broadleaf weeds.

### CLEANING SPRAY EQUIPMENT

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions and then triple rinsing the equipment before and after applying this product.

**Table 1. General Weed List**

ANNUALS			
Alkanet	Cornflower (Bachelor Button)	Mayweed	Shepherdspurse
Amaranth, Palmer, Powell, Spiny	Croton, Tropic, Woolly	Morningglory, Ivyleaf, Tall	Sicklepod
Aster, Slender	Daisy, English	Mustard, Black, Blue, Tansy,	Sida, Prickly (Feaweed)
Bedstraw, Catchweed	Dragonhead, American	Treacle, Tumble, Wild,	Smartweed, Green, Pennsylvania
Beggarweed, Florida	Eveningprimrose, Cutleaf	Yellowtops	Sneezeweed, Bitter
Broomweed, Common	Falseflax, Smallseed	Nightshade, Black, Cutleaf,	Sowthistle, Annual, Spiny
Buckwheat, Tartary, Wild	Fleabane, Annual	Pennycress, Field (Fanweed,	Spanish Needles
Buffalobur	Flixweed	Frenchweed, Stinkweed)	Spikeweed, Common
Burclover, California	Fumitory	Pineappleweed	Spurge, Prostrate, Leafy
Burcucumber	Goosefoot, Nettleleaf	Poorjoe	Spurry, Corn
Buttercup, Corn, Creeping, Roughseed, Western Field	Hempnettle	Poppy, Red-horned	Starbur, Bristly
Carpetweed	Henbit	Puncturevine	Starwort, Little
Catchfly, Nightflowering	Jacobs-Ladder	Purslane, Common	Sumpweed, Rough
Chamomile, Corn	Jimsonweed	Pusley, Florida	Sunflower, Common (Wild), Volunteer
Chervil, Bur	Knawel (German Moss)	Radish, Wild	Thistle, Russian
Chickweed, Common	Knautweed, Prostrate	Ragweed, Common, Giant (Buffaloweed), Lance-Leaf	Velvetleaf
Clovers	Kochia	Rocket, London, Yellow	Waterhemp
Cockle, Corn, Cow, White	Ladysthumb	Rubberweed, Bitter (Bitterweed)	Waterprimrose, Winged
Cocklebur, Common	Lambsquarters, Common	Salsify	Wormwood
Copperleaf, Hophornbeam	Lettuce, Miners, Prickly	Senna, Coffee	
	Mallow, Common, Venice	Sesbania, Hemp	
	Marestail (Horseweed)		

(continued)

Table 1. General Weed List (cont.)

<b>BIENNIALS</b>			
Burdock, Common Carrot, Wild (Queen Anne's Lace) Cockle, White Eveningprimrose, Common	Geranium, Carolina Gromwell Knapweed, Diffuse, Spotted Mallow, Dwarf	Plantain, Bracted Ragwort, Tansy Starthistle, Yellow Sweetclover	Teasel Thistle, Bull, Milk, Musk, Plumeless
<b>PERENNIALS</b>			
Alfalfa <sup>(1)</sup> Artichoke, Jerusalem Aster, Spiny, Whiteheath Bedstraw, Smooth Bindweed, Field, Hedge Blueweed, Texas Bursage, Woollyleaf <sup>(1)</sup> (Bur Ragweed, Povertyweed) Buttercup, Tail Camplon, Bladder Chickweed, Field, Mouseear Chicory <sup>(1)</sup> Clover <sup>(1)</sup> , Hop Dandelion <sup>(1)</sup>	Dock <sup>(1)</sup> , Broadleaf (Bitterdock), Curly Dogbane, Hemp Dogfennel <sup>(1)</sup> (Cypressweed) Fern, Bracken Garlic, Wild Goldenrod, Canada, Missouri Goldenweed, Common Hawkweed Henbane, Black <sup>(1)</sup> Horsenettle, Carolina Ironweed Knapweed, Black, Diffuse, Russian <sup>(1)</sup> , Spotted	Milkweed, Climbing, Common, Honeyvine, Western Whorled Nettle, Stinging Nightshade, Silverleaf (White Horsenettle) Onion, Wild Plantain, Broadleaf, Buckhorn Pokeweed Ragweed, Western Redvine Sericia Lespedeza Smartweed, Swamp Snakeweed, Broom Sorrel <sup>(1)</sup> , Red (Sheep Sorrel)	Sowthistle <sup>(1)</sup> , Perennial Spurge, Leafy Sundrop Thistle, Canada, Scotch Toadflax, Dalmatian Tropical Soda Apple Trumpet creeper (Buckvine) Vetch Waterhemlock, Spotted Waterprimrose, Creeping Woodsorrel <sup>(1)</sup> , Creeping, Yellow Wormwood, Louisiana Yankee weed Yarrow, Common <sup>(1)</sup>
<b>WOODY SPECIES</b>			
Alder Ash Aspen Basswood Beech Birch Blackberry <sup>(2)</sup> Blackgum <sup>(2)</sup> Cedar <sup>(2)</sup> Cherry Chinquapin Cottonwood Creosotebush <sup>(2)</sup> Cucumbertree	Dewberry <sup>(2)</sup> Dogwood <sup>(2)</sup> Elm Grape Hawthorn (Thornapple) <sup>(2)</sup> Hemlock Hickory Honeylocust Honeysuckle Hornbeam Huckleberry Huisache Ivy, Poison Kudzu	Locust, Black Maple Mesquite Oak Oak, Poison Olive, Russian Persimmon, Eastern Pine Plum, Sand (Wild Plum) <sup>(2)</sup> Poplar Rabbitbrush Redcedar, Eastern <sup>(2)</sup> Rose <sup>(2)</sup> , McCartney, Multiflora	Sagebrush, Fringed <sup>(2)</sup> Sassafras Serviceberry Spicebush Spruce Sumac Sweetgum <sup>(2)</sup> Sycamore Tarbrush Willow Witchhazel Yaupon <sup>(2)</sup> Yucca <sup>(2)</sup>

<sup>(1)</sup>Noted perennials may be controlled using lower rates of VISION™ than those listed for other listed perennial weeds.

<sup>(2)</sup>Growth suppression only



## II. APPLICATION INSTRUCTIONS

**VISION™** can be applied to actively growing weeds with aerial, broadcast, band, or spot spray applications using water or sprayable fertilizer as a carrier. For **VISION™** application rates for control or suppression by weed type and growth stage see **Table 2**. For crop-specific application rates, timing, directions for use, precautions and restrictions, refer to section "**VI. Crop-Specific Information**".

To avoid uneven spray coverage, **VISION™** must not be applied during periods of gusty wind or when wind is in excess of 15 mph.

Avoid off-target movement. Use extreme care when applying **VISION™** to prevent injury to desirable plants and shrubs.

### CULTIVATION

Do not cultivate within 7 days after applying **VISION™**.

### SENSITIVE CROP PRECAUTIONS

**VISION™** herbicide may cause injury or death to desirable crops and ornamental plants, particularly beans, cotton, flowers, fruit trees, grapes, ornamentals (trees and shrubs), peas, potatoes, soybeans, sunflowers, tobacco, tomatoes, and other broadleaf plants when their roots, stems, or foliage are exposed to low levels. These plants are most sensitive to **VISION™** during their development or growth stage.

Use coarse sprays (volume median diameter of 400 microns or more) to avoid potential herbicide drift. Select nozzles that are designed to produce minimal amounts of fine spray particles (less than 200 microns). Examples of nozzles designed to produce coarse sprays via ground applications are Delavan® Raindrops, Spraying Systems XR (excluding 1100 tips) flat fans, Turbo Teejets Turbo Floodjets®, or large capacity flood nozzles such as D10, TK10, or greater capacity tips. Keep the spray pressure at or below 20 psi and the spray volume at or above 20 gallons per acre, unless otherwise required by the manufacturer of drift-reducing nozzles. Consult your spray nozzle supplier concerning the choice of drift-reducing nozzles.

Agriculturally approved drift-reducing additives may be used.

### AERIAL APPLICATION METHODS AND EQUIPMENT

**Water Volume:** Use 1–10 gallons of water per acre for post harvest use. Use 2–20 gallons of diluted spray per treated acre for preharvest uses. Use the higher spray volume when treating dense or tall vegetation.

## SPRAY DRIFT MANAGEMENT

### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and grower are 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 outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downwards more than 45 degrees.

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

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

## AERIAL DRIFT REDUCTION INFORMATION

### 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 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

(continued)



**APPLICATION HEIGHT**

Applications should 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 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 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).

**Application Equipment:**

Select nozzles designed to produce minimal amounts of fine spray particles. Make aerial applications at the lowest safe height to reduce exposing the spray to evaporation and wind. The applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Do not use aerial equipment if spray particles can be carried by the wind into areas where sensitive crops or plants are growing or when temperature inversions exist.

**GROUND APPLICATION (BANDING)**

When applying **VISION™** herbicide by banding, determine the amount of herbicide and water volume needed using the following formula:

Bandwidth in inches	X	Broadcast rate	=	Banding herbicide
Row width in inches		per acre		rate per acre
Bandwidth in inches	X	Broadcast	=	Banding water
Row width in inches		volume per acre		volume per acre

**GROUND APPLICATION (BROADCAST)**

**Water Volume:** Use 3–50 gallons of spray solution per broadcast acre for optimal performance. Use the higher spray volume when treating dense or tall vegetation.

**Application Equipment:** Select nozzles designed to produce minimal amounts of fine spray particles. Spray with nozzles as close to the weeds as is practical for good weed coverage.

**GROUND APPLICATION (WIPERS)**

**VISION™** may be applied through wiper application equipment to control or suppress actively growing broadleaf weeds, brush, and vines listed on this label. Use a solution containing 1 part **VISION™** to 1 part water. Do not contact desirable vegetation with herbicide solution. Wiper application may be made to crops (but not to sorghum or soybeans) and on non-cropland areas and pasture described in this label.



### III. ADDITIVES

To improve postemergence weed control, agriculturally approved surfactants, sprayable fertilizers (urea ammonium nitrate, or ammonium sulfate), or crop oil concentrate may be added, particularly in dry growing conditions. (Refer to "Table 3, Additive Rate".) Do not use crop oil concentrate for postemergence in-crop applications unless specifically allowed in section "VI. Crop-Specific Information" of this label.

#### Nitrogen Source

- **Urea ammonium nitrate (UAN):** Use 2–4 quarts of UAN (commonly referred to as 28%, 30%, or 32% nitrogen solution) per acre. Do not use brass or aluminum nozzles when spraying UAN.
- **Ammonium sulfate (AMS):** AMS at 2.5 pounds per acre may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as those mentioned. Helena Chemical Company does not recommend applying AMS if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS only if it has been demonstrated to be successful in local experience.

**Table 2. General VISION™ Application Rates for Control or Suppression by Weed Type and Growth Stage**  
Use rate limitations are given in sections "V & VI. Crop-Specific Information".

Weed Type and Stage	Rate Per Acre <sup>(3)</sup>
<b>Annual<sup>(1)</sup></b>	
Small, actively growing	8–16 fluid ounces
Established weed growth	16–24 fluid ounces
<b>Biennial</b>	
Rosette diameter 1–3"	8–16 fluid ounces
Rosette diameter 3" or more	16–32 fluid ounces
Bolting	32 fluid ounces
<b>Perennial</b>	
Top growth suppression	8–16 fluid ounces
Top growth control and root suppression	16–32 fluid ounces
Noted perennials (footnote 1 in Table 1).	32 fluid ounces
Other perennials <sup>(2)</sup>	32 fluid ounces
<b>Woody Brush &amp; Vines</b>	
Top growth suppression	16–32 fluid ounces
Top growth control <sup>(2)</sup>	32 fluid ounces
Stems and stem suppression <sup>(2)</sup>	32 fluid ounces
(1) Rates below 8 fluid ounces per acre may provide control or suppression but should typically be applied with other herbicides that are effective on the same species and biotype.	
(2) Species noted in Table 2 will require tank mixes for adequate control.	
(3) No more than 2 applications per year are allowed. Do not broadcast apply more than 32 fluid ounces per acre. Use the higher level of listed rate ranges when treating dense vegetative growth or perennial weeds with well established root growth.	

#### Nonionic Surfactant

The standard label recommendation is 1 pint of an 80% active nonionic spray surfactant per 100 gallons of water.

#### Oil Concentrate

A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of the following criteria:

- be non-phytotoxic,
- contain only EPA exempt from tolerance regulation ingredients,
- provide good mixing quality in the jar test, and
- be successful in local experience.

The exact composition of suitable products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

Adjuvants containing crop oil concentrates may be used in preplant, pre-emergence, and preharvest applications as well as in pastures and non-cropland. Do not use crop oil concentrate for postemergence in-crop applications unless specifically allowed in section "VI. Crop-Specific Information" of this label.

**Table 3. Additive Rate Per Acre**

ADDITIVE	RATE PER ACRE
Nonionic Surfactant	1-2 pints
AMS	2.5 pounds
UAN Solution	2-4 quarts
Crop Oil Concentrate	1 quart*

\*See manufacturer's label for specific rate recommendations.

#### Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust accordingly. Only use water from the intended source at the source temperature.

Add components in the sequence indicated in the "Mixing Order" using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre.

Always cap the jar and invert 10 cycles between component additions.

When the components have all been added to the jar, let the solution stand for 15 minutes. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, do not mix the ingredients in the same tank.

#### Mixing Order

1. Water. Begin by agitating a thoroughly clean sprayer tank three-quarters full of clean water.
2. Agitation. Maintain constant agitation throughout mixing and application.
3. Products in PVA bags. Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. Water-dispersible products (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions).
5. Water-based soluble concentrate products.
6. Emulsifiable concentrates.
7. Water-soluble additives (such as AMS or UAN when applicable).
8. Remaining quantity of water. Maintain constant agitation during application.

#### IV. GENERAL TANK MIXING INFORMATION

##### Tank Mix Partners/Components

The herbicide products listed below may be applied with **VISION™** herbicide according to the specific tank mixing instructions on this label and on the respective product labels.

See section **"VI. Crop-Specific Information"** for more details. Read and follow the applicable **"Restrictions and Limitations"** and **"Directions For Use"** on all products involved in tank mixing. Follow the **"Directions for Use"** of the labeling of any product used in the tank mixes.

**VISION™** may also be used in tank mixtures with foliar-applied insecticides including synthetic pyrethroids such as Ambush, Asana, Pounce and Warrior or with the carbamate insecticide Furadan.

Physical incompatibility, reduced weed control, or crop injury may result from mixing **VISION™** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Helena Chemical Company does not recommend using tank mixes other than those listed as follows:

Accent® (nicosulfuron)	Guardsman® (dimethenamid + atrazine)
Acquire™ (glyphosate)	Harmony® Extra (thifensulfuron + tribenuron-methyl)
Ally® (metsulfuron-methyl)	Harness® (acetochlor)
Amber® (triasulfuron)	Harness® Xtra (acetochlor + atrazine)
Asulox® (asulam)	Hornet™ (flumetsulam + clopyralid)
Atrazine	Karmex® (diuron)
Axiom™ (flufenacet + metribuzin)	Kerb® (pronamide)
Banvel® SGF (dicamba)	Laddok® S-12 (bentazon + atrazine)
Basagran® (bentazon)	Landmaster® BW (glyphosate + 2,4-D)
Beacon® (primisulfuron-methyl)	Lariat® (alachlor + atrazine)
Bicep II Magnum® (s-metolachlor + atrazine)	Lasso® (alachlor)
Bronate® (bromoxynil MCPA)	Lexone® (metribuzin)
Bronco® (alachlor + glyphosate)	Liberty® (glufosinate)
Buctril® (bromoxynil)	Lightning® (imazethapyr + imazapyr)
Bullet® (alachlor + atrazine)	Marksman® (dicamba + atrazine)
Canvas® (thifensulfuron tribenuron + metsulfuron)	MCPA
Caparo® (prometryn)	Outlook™ (dimethenamid-P)
Crossbow® (2,4-D + triclopyr)	Paramount® (quinclorac)
Curtail® (clopyralid + 2,4-D)	Partner® (alachlor)
Cyclone® (paraquat)	Peak® (prosofuron)
Dakota® (fenoxaprop + MCPA)	Permit® (halosulfuron)
Degree™ (acetochlor)	Princep® (simazine)
Degree Xtra™ (acetochlor + atrazine)	Prowl® (pendimethalin)
DoublePlay® (acetochlor + EPI/C)	Python™ (flumetsulam)
Dual® Magnum® (s-metolachlor)	Ramrod® (propachlor)
Dual® II Magnum® (s-metolachlor + atrazine)	Roundup Ultra® (glyphosate)
Eradicane® (EPTC)	Roundup Ultra® RT (glyphosate)
Evik® (ametryn)	Sencor® (metribuzin)
Exceed® (primisulfuron prosofuron)	Spirit™ (primisulfuron + prosofuron)
Express® (thifensulfuron + tribenuron-methyl)	Stinger® (clopyralid)
Fallow Master® (glyphosate + dicamba)	Surpass® (acetochlor)
Field Master™ (acetochlor + atrazine + glyphosate)	Sutan® + (butylate)
Finesse® (chlorsulfuron metsulfuron-methyl)	Tiller® (fenoxaprop-ethyl + MCPA + 2,4-D)
Frontier® (dimethenamid)	TopNotch™ (acetochlor)
FulTime™ (acetochlor + atrazine)	Tordon® 22K (picloram)
Garton® (triclopyr)	Touchdown® (sulfosate)
Glean® (chlorsulfuron)	Tough® (pyridate)
Gramoxone® Extra (paraquat)	2,4-D

### V. RESTRICTIONS AND LIMITATIONS

- Maximum seasonal use rate: Refer to **Table 4** for crop-specific maximum seasonal use rates. Do not exceed 64 fluid ounces of **VISION™** herbicide (2.0 pounds acid equivalent) per acre, per year.
- Preharvest Interval (PHI): Refer to section "**VI. Crop-Specific Information**" for preharvest intervals.
- Restricted-Entry Interval (REI): 24 hours
- **Crop Rotational Restrictions:**  
The interval between application and planting rotational crop is given below. Always exclude counting days when the ground is frozen. Planting at intervals less than specified below may result in crop injury. Moisture is essential for the degradation of this herbicide in soil. If dry weather prevails, use cultivation to allow herbicide contact with moist soil.

CROP	MINIMUM DAYS PLANTBACK INTERVAL (Days) Application < 24 fl. oz. per acre	MINIMUM DAYS PLANTBACK INTERVAL (Days) Application 24–32 fl. oz. per acre
Corn (field, pop, seed, silage)	0*	120
Cotton (preplant)	21**	120
Sorghum	15***	120
Soybeans	14**** 28****	
Barley, oat, wheat and other grass seedings	15 – per 8 fl. oz./acre east of the Mississippi River 22 – per 8 fl. oz./acre west of the Mississippi River 30 – per 16 fl. oz./acre east of the Mississippi River 45 – per 16 fl. oz./acre west of the Mississippi River	30 – per 16 fl. oz./acre east of the Mississippi River 45 – per 16 fl. oz./acre west of the Mississippi River
All other crops grown in areas with 30" or more of annual rainfall	120	120
All other crops grown in areas with 30" or less of annual rainfall	180	180
*Up to 8 fl. oz./acre on medium- to coarse-textured soils containing < 2.5% OM and up to 16 fl. oz. on fine- to medium-textured soils containing > 2.5% OM **Per 8 fl. oz./acre or less following application and an accumulation of 1" of rainfall and/or irrigation. ***Up to 8 fl. oz./acre ****More than 8 fl. oz./acre up to 16 fl. oz./acre		

- **Rainfast period:** Rainfall or irrigation occurring within 4 hours after postemergence applications may reduce the effectiveness of **VISION™**.
- **Stress:** Do not apply to crops under stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, insects, or widely fluctuating temperatures as injury may result.
- Do not apply through any type of irrigation equipment. Do not treat irrigation ditches or water used for crop irrigation or domestic purposes.
- Livestock may be grazed or fed after application on labeled sites. For corn, once the crop reaches the ensilage (milk) stage or later in maturity
- Aircraft application is allowed for all labeled sites.



Table 4. Crop Specific Maximum Seasonal Use Rates

CROP	Maximum Rate Per Acre Per Application	Maximum In-Crop Rate Per Acre Per Season
Asparagus	16 fluid ounces	16 fluid ounces
Barley, Fall	8 fluid ounces	12 fluid ounces
Barley, Spring	8 fluid ounces	11 fluid ounces
Corn	16 fluid ounces	24 fluid ounces
Fallow Ground	32 fluid ounces	64 fluid ounces
Grass grown for seed	32 fluid ounces	64 fluid ounces
Proso Millet	4 fluid ounces	4 fluid ounces
Pastureland	32 fluid ounces	64 fluid ounces
Conservation Reserve Program (CRP)	32 fluid ounces	64 fluid ounces
Oats	4 fluid ounces	4 fluid ounces
Sorghum	8 fluid ounces	16 fluid ounces
Soybean	32 fluid ounces	64 fluid ounces
Sugarcane	32 fluid ounces	64 fluid ounces
Turf	32 fluid ounces	32 fluid ounces
Triticale	4 fluid ounces	4 fluid ounces
Wheat	8 fluid ounces	16 fluid ounces

## VI. CROP-SPECIFIC INFORMATION

### ASPARAGUS

Apply **VISION™** herbicide to emerged and actively growing weeds in 40–60 gallons of diluted spray per treated acre immediately after cutting the field, but at least 24 hours before the next cutting. If spray contacts emerged spears, crooking (twisting) of some spears may result. If such crooking occurs, discard affected spears.

**Rates:** Apply 8–16 fluid ounces of **VISION™** to asparagus to control annual sowthistle, black mustard, Canada and Russian thistle, and redroot pigweed (carelessweed). Apply 16 fluid ounces of **VISION™** to asparagus to control common chickweed, field bindweed, nettleleaf goosefoot, and wild radish.

### ASPARAGUS TANK MIXES

Apply 8–16 fluid ounces of **VISION™** with glyphosate or 2,4-D to asparagus to improve control of Canada thistle and field bindweed.

### ASPARAGUS RESTRICTIONS:

- Do not exceed a total of 16 fluid ounces of **VISION™** to asparagus per treated acre, per crop year.
- Do not harvest prior to 24 hours after treatment.
- Do not use in the Coachella Valley of California.
- Do not make more than two applications per year.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

### BETWEEN CROP APPLICATIONS PREPLANT DIRECTIONS (POSTHARVEST, FALLOW, CROP STUBBLE, CONSERVATION RESERVE PROGRAMS, FARMLAND) FOR BROADLEAF WEED CONTROL

**VISION™** can be applied either postharvest in the fall, spring, or summer during the fallow period or to crop stubble/set-aside acres. Apply **VISION™** as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost or in the fallow cropland or crop stubble the following spring or summer.

See "Crop Rotational Restrictions" in section "V. General Restrictions and Limitations" for the recommended interval between application and planting to prevent crop injury.



**Rates and Timings:**

Apply 4–32 fluid ounces of **VISION™** per acre for between crop applications. Refer to **Table 2** to determine use rates for specific targeted weed species. For best performance, apply **VISION™** when annual weeds are less than 6" tall, when biennial weeds are in the rosette stage and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. The most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke occurs if **VISION™** is applied when the majority of weeds have at least 4–6" of regrowth or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts such as rhizomes or bulblets, after the effective period for **VISION™**. For seedling control, a follow-up program or other cultural practices could be instituted. For small grain in-crop uses of **VISION™**, refer to the small grain section for details.

**BETWEEN CROP TANK MIXES**

In tank mixes with one or more of the following herbicides for between crop applications, apply 4–16 fluid ounces of **VISION™** per acre for control of annual weeds, or 16–32 fluid ounces of **VISION™** per acre for control of biennial and perennial weeds:

Acquire®	Atrazine	Fallow Master®	Gramoxone® Extra	Paramount®	Tordon® 22K
Ally®	Curtail®	Finesse®	Kerb®	Roundup® Ultra	Touchdown®
Amber®	Cyclone®	GlyStar® Plus	Landmaster® BW	Sencor®	2,4-D

**BETWEEN CROP RESTRICTIONS:**

- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Make no more than two applications per year.
- Timing Restrictions for Lactating Dairy Animals Following Treatment

<b>VISION™ Rate Per Treated Acre</b>	<b>Days Before Grazing</b>	<b>Days Before Hay Harvest</b>
Up to 1 pint	7 days	37 days
Up to 2 pints	21 days	51 days

**CORN (FIELD, POP, SEED, AND SILAGE)**

Direct contact of **VISION™** with corn seed must be avoided. If corn seeds are less than 1.5" below the soil surface, delay application until corn has emerged. Applications of **VISION™** to corn during periods of rapid growth may result in temporary leaning. Corn will usually become erect within 3–7 days. Cultivation should be delayed until after corn is growing normally to avoid breakage.

Corn may be harvested or grazed for feed once the crop has reached the ensilage (milk) stage or later in maturity.

**PREPLANT AND PRE-EMERGENCE APPLICATION IN NO TILLAGE CORN:**

**Rates:** Apply 16 fluid ounces of **VISION™** per acre for no-tillage corn on medium- or fine-textured soils containing 2.5% or greater organic matter. Use 8 fluid ounces of **VISION™** per acre for no-tillage corn on coarse soils (sand, loamy sand, and sandy loam) or medium- and fine-textured soils with less than 2.5% organic matter.

**Timing:** **VISION™** can be applied to emerged weeds before, during, or after planting a corn crop. When planting into a legume sod (e.g., alfalfa or clover), apply **VISION™** after 4–6" of regrowth has occurred.

**PRE-EMERGENCE APPLICATION IN CONVENTIONAL OR REDUCED TILLAGE CORN:**

**Rates:** Apply 16 fluid ounces of **VISION™** herbicide per treated acre for conventional or reduced tillage corn to medium- or fine-textured soils that contain 2.5% organic matter or more. Do not apply to coarse-textured soils (sand, loamy sand, or sandy loam) or any soil with less than 2.5% organic matter until after corn emergence (see Early Postemergence uses below).

**Timing:** **VISION™** may be applied after planting and prior to corn emergence. Pre-emergence application of **VISION™** does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if the application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g., drags, harrows) that concentrate treated soil over seed furrow, as seed damage could result.

Pre-emergence control of cocklebur, jimsonweed, and velvetleaf may be reduced if conditions such as low temperature or lack of soil moisture cause delayed or deep germination of weeds.

**EARLY POSTEMERGENCE APPLICATION IN ALL TILLAGE SYSTEMS:**

**Rates:** Apply 16 fluid ounces of **VISION™** per treated acre to corn for early postemergence. Reduce the rate to 8 fluid ounces of **VISION™** per treated acre for corn grown on coarse textured soils (sand, loamy sand, and sandy loam).

**Timing:** Apply between corn emergence and the 5-leaf stage or 8" tall, whichever occurs first. Refer to Late Postemergence Application if the sixth true leaf is emerging from whorl or the corn is greater than 8" tall.





**LATE POSTEMERGENCE APPLICATION:**

**Rate:** Apply 8 fluid ounces of **VISION™** per treated acre to corn for late postemergence application.

**Timing:** Apply **VISION™** from 8–36" tall corn or 15 days before tassel emergence, whichever comes first. For best performance, apply when weeds are less than 3" tall.

Apply directed spray when corn leaves prevent proper spray coverage, sensitive crops are growing nearby, or tank mixing with 2,4-D.

Do not apply **VISION™** when soybeans are growing nearby if any of these conditions exist:

- corn is more than 24" tall
- soybeans are more than 10" tall
- soybeans have begun to bloom

**CORN TANK MIXES OR SEQUENTIAL USES**

When using tank mix or sequential applications with **VISION™**, always follow the companion product label to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

Apply **VISION™** prior to, in tank mix with, or after one more of the following herbicides:

Accent <sup>(1)</sup>	Bullet <sup>®</sup>	Frontier <sup>®</sup>	Lasso <sup>®</sup>	Stinger <sup>®(1)</sup>
Acquire™	Degree™	FulTime <sup>®</sup>	Liberty <sup>®(3)</sup>	Surpass <sup>®</sup>
Atrazine	Degree Xtra™	GlyStar <sup>®</sup> Plus	Lightning <sup>®(6)</sup>	Sutan <sup>®</sup> + <sup>(2)</sup>
Axiom™	DoublePlay <sup>®(2)</sup>	Gramoxone <sup>®</sup> Extra	Outlook™	TopNotch™
Banvel <sup>®(1)</sup>	Dual <sup>®</sup> Magnum <sup>®</sup>	Guardzman <sup>®</sup>	Permit <sup>®(1)</sup>	Roundup Ultra <sup>®(4)</sup>
Dicamba DMA <sup>(1)</sup>	Dual <sup>®</sup> II Magnum <sup>®</sup>	Harness <sup>®</sup>	Princep <sup>®</sup>	Touchdown <sup>®</sup>
Dicamba + 2,4-D <sup>(1)</sup>	Eradicane <sup>®</sup>	Harness <sup>®</sup> Xtra	Prowl <sup>®</sup>	Tough <sup>®</sup>
Beacon <sup>®(1)</sup>	Exceed <sup>®(1)</sup>	Horne <sup>®(1)</sup>	Python™	2,4-D <sup>(1)</sup>
Bicep <sup>®</sup>	Field Master <sup>®</sup>	Laddock <sup>®</sup> S-12	Spirit™ <sup>(1)</sup>	

**NOTE:**

<sup>(1)</sup>See Table 5 below for additional limitations or restrictions that apply for tank mix or sequential use programs with these products.

<sup>(2)</sup>Sequential use only.

<sup>(3)</sup>Use only Clearfield (imidazolinone-tolerant) corn hybrids.

<sup>(4)</sup>Includes postemergence use on Roundup Ready (glyphosate-tolerant) corn hybrids.

<sup>(6)</sup>Use only on Liberty Link (glufosinate-tolerant) corn hybrids.

**Table 5. Specific Guidelines for Tank Mixes or Sequential Use Programs**

Tank Mix Partner	Rate Per Acre
Accent or Beacon	When tank mixing, applications immediately following extreme day or night temperature fluctuations or applications when daytime temperatures do not exceed 50°F may result in decreased weed control or crop injury. Delay application until the temperatures warm and both weeds and crop resume normal growth.
2,4-D	To provide maximum crop safety after corn emergence, use this tank mix only after corn is greater than 8" tall and when application can be made with drop pipes that direct spray beneath corn leaves and away from the whorl of the corn. The maximum rate of 2,4-D recommended in this tank mix is 0.25 pint per acre (0.125 pound of acid equivalent per acre).
Exceed, Spirit, Stinger, Hornet, or Permit	For improved control of velvetleaf, tank mix Exceed, Spirit, or Permit with <b>VISION™</b> . For improved control of Canada thistle, Stinger or Hornet may be tank mixed with <b>VISION™</b> . Use the higher rate in the range for heavier infestations of these weeds.

**CORN PRECAUTIONS:**

- Do not apply **VISION™** to seed corn or popcorn without first verifying with your local seed corn company (supplier) the tolerance of your inbred line or variety of popcorn to **VISION™**. This precaution will help avoid potential injury of sensitive varieties.
- Do not use crop oil concentrates in a tank mix with **VISION™** after crop emergence as crop injury may result.
- Use of sprayable fluid fertilizer as the carrier is not recommended for applications of **VISION™** made after corn emergence.



**CORN RESTRICTIONS:**

- Up to 2 applications of **VISION™** may be made during a growing season.
- Sequential applications must be separated by 2 weeks or more.
- **VISION™** is not registered for use on sweet corn.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Timing Restrictions for Lactating Dairy Animals Following Treatment

<b>VISION™ Rate Per Treated Acre</b>	<b>Days Before Grazing</b>	<b>Days Before Hay Harvest</b>
Up to 1 pint	7 days	37 days
Up to 2 pints	21 days	51 days
Up to 4 pints	40 days	70 days

**COTTON****PREPLANT APPLICATION:**

Apply up to 8 fluid ounces of **VISION™** herbicide per acre to cotton to control emerged broadleaf weeds prior to planting cotton in conventional or conservation tillage systems.

For best performance, apply **VISION™** when weeds are in the 2- to 4-leaf stage and rosettes are less than 2" across

**COTTON TANK MIXES**

For control of grasses or additional broadleaf weeds, **VISION™** may be tank mixed with Caparol®, Gramoxone® Extra, and glyphosate herbicides.

**COTTON RESTRICTIONS:**

Following application of **VISION™** to cotton and a minimum accumulation of 1" of rainfall or overhead irrigation, a waiting interval of 21 days is required per 8 fluid ounces per acre or less. These intervals must be observed prior to planting cotton.

Do not apply preplant to cotton west of the Rockies.

Do not make **VISION™** preplant applications to cotton in geographic areas with average annual rainfall less than 25".

If applying a spring preplant treatment following application of a fall preplant (postharvest) treatment, then the combination of both treatments may not exceed 2 pounds acid equivalent per acre.

**VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

**GRASS GROWN FOR SEED**

Apply 8–16 fluid ounces of **VISION™** per treated acre on seedling grass after the crop reaches the 3- to 5-leaf stage. Apply up to 32 fluid ounces of **VISION™** on well-established perennial grass. For best performance, apply **VISION™** when weeds are in the 2- to 4-leaf stage and rosettes are less than 2" across. Use the higher level of listed rate ranges when treating more mature weeds or dense vegetative growth.

To suppress annual grasses such as brome (downy and riggut), rattail fescue, and windgrass, apply up to 32 fluid ounces of **VISION™** per treated acre in the fall or late summer after harvest and burning of established grass seed crops. Applications should be made immediately following the first irrigation when the soil is moist and before weeds have more than 2 leaves.

**GRASS SEED TANK MIXES**

**VISION™** may be applied in tank mixes with one or more of the following herbicides:

Brox 2E	Express®	MCPA amine	Stinger®
Curtail®	Karmex®	Sencor®	2,4-D amine or ester

**GRASS GROWN FOR SEED RESTRICTIONS:**

- Do not apply **VISION™** after the grass seed crop begins to joint.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Do not make more than 2 applications per year.
- Refer to the "Pasture, Hay, Rangeland, and General Farmstead" section for grazing and feeding restrictions.



## PROSO MILLET

For use only within Colorado, Nebraska, North Dakota, South Dakota, and Wyoming.

**VISION™** combined with 2,4-D will provide control or suppression of the annual broadleaf weeds listed in Table 1.

Apply 4 ounces of **VISION™** with 0.375 pound a.i. of 2,4-D. Apply the tank mix of **VISION™** + 2,4-D as a broadcast or spot treatment to emerged and actively growing weeds and when proso millet is in the 2- to 5-leaf stage. Use directions for 2,4-D products vary with manufacturers. Refer to a 2,4-D product with labeling consistent with the crop stage timing for **VISION™**. Some types of proso millet may be affected adversely by a tank mix of **VISION™** + 2,4-D.

Do not apply unless possible proso millet crop injury will be acceptable.

### PROSO MILLET RESTRICTIONS:

- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Do not make more than 2 applications per year.
- Restrictions for proso millet that is grazed or cut for hay are indicated in "PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD (NON-CROPLAND)" section of this label.

### PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD (NON-CROPLAND)

**VISION™** is recommended for use on pasture, hay, rangeland, and general farmstead (non-cropland) (including fencerows and non-irrigation ditch-banks) for control or suppression of broadleaf weed and brush species listed in Table 1.

**VISION™** may also be applied to non-cropland areas to control broadleaf weeds in noxious weed control programs, districts, or areas including broadcast or spot treatment of roadsides and highways, utilities, railroad, and pipeline rights-of-way. Noxious weeds must be recognized at the state level, but programs may be administered at state, county, or other level. **VISION™** uses described in this section also pertain to small grains (forage sorghum, rye, sudangrass, or wheat) grown for pasture use only. Some perennial weeds may be controlled with lower rates of either **VISION™** or **VISION™** plus 2,4-D (refer to Table 2).

#### Rates and Timings

Refer to Table 2 for rate selection based on targeted weed or brush species.

Some weeds will require tank mixes for adequate control.

**VISION™** herbicide can be applied using water, oil-in-water emulsions including invert systems, or sprayable fluid fertilizer as a carrier (refer to the "Compatibility Test for Mix Components").

#### COMPATIBILITY TEST FOR MIX COMPONENTS

To prepare oil in water emulsions, half-fill spray tank with water, then add the appropriate amount of emulsifier. With continuous agitation, slowly add the herbicide and then the oil (such as diesel oil or fuel oil) or a premix of oil plus additional emulsifier to spray tank. Complete filling of spray tank with water.

Maintain vigorous agitation during spray operation to prevent oil and water from forming separate layers. **VISION™** may be applied broadcast using either ground or aerial application equipment.

#### Aerial Application:

**Spray Volume:** Use 2–40 gallons of diluted spray per treated acre in a water-based carrier.

#### Ground Application:

**Spray Volume:** Use 3–600 gallons of diluted spray per treated acre. The volume of spray applied will depend on the height, density, and type of weeds or brush being treated and on the type of equipment being used.

**Spot Treatments:** **VISION™** may be applied to individual clumps or small areas of undesirable vegetation using handgun or similar types of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

#### Cut Surface Treatments:

**VISION™** may be applied as a cut surface treatment for control of unwanted trees and prevention of sprouts of cut trees.

**Rate:** Mix 1 part **VISION™** with 1–3 parts water to create the application solution. Use the lower dilution rate when treating difficult-to-control species.

**For Frill or Girdle Treatments:** Make a continuous cut or a series of overlapping cuts using an axe to girdle tree trunk. Spray or paint the cut surface with the solution.

**For Stump Treatments:** Spray or paint freshly cut surface with the water mix. The area adjacent to the bark should be thoroughly wet.

**Note:** For more rapid foliar effects, a 2,4-D product labeled for cut surface treatment may be added to the solution.

(continued)



#### APPLICATIONS FOR CONTROL OF DORMANT MULTIFLORA ROSE:

**VISION™** can be applied when plants are dormant as an undiluted spot treatment directly to the soil or as a Lo-Oil basal bark treatment using an oil-water emulsion solution.

- **Spot Treatments:** Spot treatment applications of **VISION™** should be applied directly to the soil as close as possible to the root crown but within 6–8" of the crown. On sloping terrain, apply **VISION™** to the uphill side of the crown. Do not apply when snow or water prevents applying **VISION™** directly to the soil. The use rate of **VISION™** depends on the canopy diameter of the multiflora rose. Examples: Use 0.25, 1.0, or 2.35 fluid ounces of **VISION™** respectively, for 5, 10, or 15 feet canopy diameters.
- **Lo-Oil Basal Bark Treatments:** For Lo-Oil basal bark treatments, apply **VISION™** to the basal stem region from the ground line to a height of 12–18". Spray until runoff, with special emphasis on covering the root crown. For best results, apply **VISION™** when plants are dormant. Do not apply after bud break or when plants are showing signs of active growth. Do not apply when snow or water prevents applying **VISION™** to the ground line.

#### To prepare approximately 2 gallons of a Lo-Oil spray solution:

1. Combine 1.5 gallons of water, 1 ounce of emulsifier, 16 fluid ounces of **VISION™**, and 2.5 pints of No. 2 diesel fuel.
2. Adjust the amounts of materials used proportionately to the amount of final spray solution desired.

Do not exceed 8 gallons of spray solution mix applied per acre, per year.

### GRASS PASTURE TANK MIXES

**VISION™** may be applied in tank mixes with one or more of the following herbicides:

2,4-D	Amber®	Garlon®	Stinger®
Acquire®	Crossbow®	Gramoxone® Extra	Tordon 22K®
Ally®	Curtail®	GlyStar® Plus	

#### PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD (NON-CROPLAND) RESTRICTIONS:

- Do not apply more than 16 fluid ounces of **VISION™** per acre to small grains grown for pasture.
- Newly seeded areas may be severely injured if more than 16 fluid ounces of **VISION™** is applied per acre to small grains grown for pasture.
- Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, carpetgrass, buffalograss, and St. Augustinegrass may be injured if more than 16 fluid ounces of **VISION™** is applied per acre. Usually colonial bentgrasses are more tolerant than creeping types. Velvetgrasses have the least tolerance. Treatments will kill or injure alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.
- Do not make more than 2 applications per year.
- Do not harvest hay within 7 days of last application.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- There are no grazing restrictions for animals other than lactating dairy animals.
- Timing Restrictions for Lactating Dairy Animals Following Treatment

<b>VISION™ Rate Per Treated Acre</b>	<b>Days Before Grazing</b>	<b>Days Before Hay Harvest</b>
Up to 1 pint	7 days	37 days
Up to 2 pints	21 days	51 days





### CONSERVATION RESERVE PROGRAM (CRP)

**VISION™** is recommended for use on both newly seeded and established grasses grown on land in Conservation Reserve Programs. Treatments of **VISION™** will injure or may kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

#### NEWLY SEEDDED AREAS

**VISION™** may be applied either preplant or postemergence to newly seeded grasses or small grains such as barley, oats, rye, sudangrass, wheat, or other grain species grown as a cover crop. Postemergence applications may be made after seedling grasses exceed the 3-leaf stage. Rates of **VISION™** greater than 16 fluid ounces per treated acre to CRP may severely injure newly seeded grasses.

Preplant applications may injure new seedlings if the interval between application and grass planting is less than 45 days per 16 fluid ounces of **VISION™** applied per treated acre west of the Mississippi River or 20 days per 16 fluid ounces applied east of the Mississippi River.

#### ESTABLISHED GRASS STANDS

Established grass stands are perennial grasses planted one or more seasons prior to treatment. Certain species (bentgrass, carpetgrass, smooth brome, buffalograss, or St. Augustinegrass) may be injured when treated with more than 16 fluid ounces of **VISION™** per treated acre.

When applied at recommended rates, **VISION™** herbicide will control many annual and biennial weeds and provide control or suppression of many perennial weeds.

#### Rates and Timings

Apply 4–32 fluid ounces of **VISION™** to established grass stands per acre. See list of weeds in **Table 2** for rates for control and suppression based on target weed species.

### CONSERVATION RESERVE PROGRAM TANK MIXES

**VISION™** may be tank mixed or applied sequentially with other products labeled for use in Conservation Reserve Programs such as atrazine, Cyclone®, glyphosate, Gramoxone® Extra, Touchdown® or generic 2,4-D labeled for Conservation Reserve Program use.

#### CONSERVATION RESERVE PROGRAM (CRP) RESTRICTIONS:

Retreatments may be made as needed; however, do not exceed a total of 64 fluid ounces (4 pints) of **VISION™** per acre to established grass stands under CRP. Do not make more than 2 applications per year. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 lb. a.e./acre/application.

### FALL- AND SPRING-SEEDDED BARLEY, OATS, TRITICALE AND WHEAT

**VISION™** combinations with listed tank mix partners will provide control or suppression of the annual broadleaf weeds listed in **Table 1**. For improved control of listed weeds, tank mix **VISION™** with one or more of the herbicides listed.

**VISION™** used in a tank mix with other herbicides offers the best spectrum of weed control and herbicide tolerant weed management. Refer to the specific section crop for **VISION™** application rate and timing.

For applications prior to weed emergence or when sulfonylurea-resistant weeds are present or suspected, tank mix a minimum of 3 fluid ounces of **VISION™** per treated acre with a non-sulfonylurea herbicide such as 2,4-D or MCPA. Tank mixing **VISION™** with these products will offer more consistent control of sulfonylurea-tolerant weeds.

**Additives:** When tank mixing **VISION™** with sulfonylurea herbicides (Ally®, Amber®, Canvas®, Express®, Finesse®, Glean®, Harmony® Extra, and Peak®), use 1–4 pints of an agriculturally approved surfactant (containing at least 80% active ingredient) per 100 gallons of spray or not more than 0.25–0.5% by volume. Use the highest rate of surfactant when using the lower rate ranges of the tank mix or when treating more mature and difficult-to-control weeds or dense vegetative growth.

Refer to the specific crop sections below for use rates. When treating difficult-to-control weeds such as kochia, wild buckwheat, cow cockle, prostrate knotweed, Russian thistle, and prickly lettuce or when dense vegetative growth occurs, use the 4 fluid ounces of **VISION™** per acre on barley, oats, triticale and wheat.

#### Timings:

Apply **VISION™** before, during, or after planting barley, oats, triticale and wheat. See specific barley, oats, triticale and wheat crop uses below for maximum crop stage. For best performance, apply **VISION™** when weeds are in the 2- to 3-leaf stage and rosettes are less than 2" across. Applying **VISION™** to barley, oats, triticale and wheat during periods of rapid growth may result in crop leaning. This condition is temporary and will not reduce crop yields. Applications to barley, oats, triticale and wheat may be made with aerial applications with 1 gallon of water or more per acre. Where dense foliage is present, 2–3 gallons of water per acre should be used.





## BARLEY (Fall- and Spring-Seeded)

### EARLY-SEASON APPLICATIONS:

Apply 2–4 fluid ounces of **VISION™** to fall-seeded barley prior to the jointing stage. Apply 2–3 fluid ounces of **VISION™** before spring-seeded barley exceeds the 4-leaf stage.

**Note:** For spring barley varieties that are seeded during the winter months or later, follow the rates and timings given for spring-seeded barley. Do not tank mix **VISION™** with 2,4-D in early season applications on spring-seeded barley.

### PREHARVEST APPLICATIONS:

**VISION™** can be used to control weeds that may interfere with harvest of fall- and spring-seeded barley. Apply 8 fluid ounces of **VISION™** per acre as a broadcast or spot treatment to annual broadleaf weeds when barley is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if application can be made when weeds are actively growing but before weeds canopy.

A waiting interval of 7 days is required before harvest. Do not use preharvest-treated barley for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better. For control of additional broadleaf weeds or grasses, **VISION™** may be tank mixed with other herbicides, such as 2,4-D, that are labeled for preharvest uses in barley.

Do not make preharvest applications in California.

**Table 7. Barley Tank Mixes**

Tank Mix Partner			
Ally®	Buctril®	Finesse®	MCPA amine or ester
Amber®	Canvas®	Glean	Metribuzin (Sencor®, Lexone®) <sup>(1)</sup>
Bronate®	Express	Harmony® Extra	2,4-D amine or ester <sup>(2,3)</sup>

<sup>(1)</sup>Do not use low rates of sulfonylureas (Ally, Amber, Canvas, Express, Finesse, Glean, and Harmony Extra) on more mature weeds or on dense vegetative growth.

<sup>(2)</sup>When using formulations other than 4 pounds per gallon, use pounds of a.e. per acre listed.

<sup>(3)</sup>This tank mix is for fall-seeded barley only.

## OATS (Fall- and Spring-Seeded)

### EARLY-SEASON APPLICATIONS:

Apply 4 fluid ounces of **VISION™** herbicide per acre to fall-seeded oats prior to the jointing stage. Apply 4 fluid ounces of **VISION™** before spring-seeded oats exceed the 5-leaf stage.

**VISION™** may be tank mixed with MCPA amine or ester for applications in oat.

Do not tank mix **VISION™** with 2,4-D in oats.

Do not harvest oats within 7 days of last application.

## TRITICALE (Fall- and Spring-Seeded)

### EARLY SEASON APPLICATIONS:

Apply 4 fluid ounces of **VISION™** to triticale.

Early season applications to fall-seeded triticale must be made prior to the jointing stage.

Early season applications to spring-seeded triticale must be made before triticale reaches the 6-leaf stage.

**Triticale Tank Mixes:** For best performance, should be used in tank mix combination with bromoxynil (Buctril®, Moxy® 2E) herbicide.





## WHEAT (Fall- and Spring-Seeded)

### EARLY-SEASON APPLICATIONS:

Apply 4 fluid ounces of **VISION™** to wheat unless using one of the fall-seeded wheat specific programs below.  
Early season applications to fall-seeded wheat must be made prior to the jointing stage.

Early season applications to spring-seeded wheat must be made before wheat reaches the 6-leaf stage. Early developing wheat varieties such as TAM 107, Madison, or Wakefield must receive application between early tillering and the jointing stage. Care should be taken in staging these varieties to be certain that the application occurs prior to the jointing stage.

To improve control of Russian thistle, flixweed, groomwell, or mayweed, add 2,4-D amine or ester to a tank mix with one of the following herbicides: Ally®, Amber®, Canvas®, Express®, Finesse®, Glean®, Harmony® Extra, or Peak®.

### SPECIFIC USE PROGRAMS FOR FALL-SEEDED WHEAT ONLY:

**VISION™** may be used at 6 fluid ounces on fall-seeded wheat in Western Oregon as a spring application only. In Colorado, Kansas, New Mexico, Oklahoma, and Texas, up to 8 fluid ounces of **VISION™** may be applied on fall-seeded wheat after it exceeds the 3-leaf stage for suppression of perennial weeds, such as field bindweed. Applications may be made in the fall following a frost but before a killing freeze. **VISION™** may be tank mixed with 2,4-D amine at 8 fluid ounces after wheat begins to tiller. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, do not use if the potential for crop injury is not acceptable.

### PREHARVEST APPLICATIONS:

**VISION™** can be used to control weeds that may interfere with harvest of wheat. Apply 8 fluid ounces **VISION™** per acre as a broadcast or spot treatment to annual broadleaf weeds when wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if application can be made when weeds are actively growing but before weeds canopy.

A waiting interval of 7 days is required before harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better. For control of additional broadleaf weeds or grasses, **VISION™** may be tank mixed with other herbicides such as Ally, Roundup® Ultra, and 2,4-D.

Do not make preharvest applications in California.

**Table 8. Wheat Tank Mixes**

Tank Mix Partner			
Ally®(1)	Curtail®	Harmony Extra®(1)	Peak®(1)
Amber®(1)	Dakota®(2)	Karmex®(3)	Stinger
Bronate®	Express®(1)	Glyphosate (Roundup Ultra® RT(4))	Tiller®(2)
Buctril®	Finesse®(1)	MCPA amine or ester(5)	2,4-D amine or ester(5)
Canvas®(1)	Glean®(1)	Metribuzin®(3) (Sencor®, Lexone®)	

(1) Do not use low rates of sulfonylurea herbicides, such as Ally, Amber, Canvas, Express, Finesse, Glean, Harmony Extra, and Peak on more mature weeds or on dense vegetative growth.

(2) Do not use **VISION™** as a tank mix treatment with Dakota or Tiller on Durum wheat. Do not tank mix with Tiller if wild oat is the target weed.

(3) Tank mixes with Karmex and metribuzin are for use in fall-seeded wheat only.

(4) A tank mix of up to 4 fluid ounces of **VISION™** with Roundup Ultra RT or any glyphosate formulation labeled for use as a preplant application to wheat may be applied with no waiting period prior to planting.

(5) Up to 32 fluid ounces of (1.0 pound a.e.) may be used on fall-seeded wheat if crop injury is acceptable. When using formulations other than 4 pounds per gallon, use the pounds of a.e. per acre listed.

### BARLEY, OATS, TRITICALE AND WHEAT RESTRICTIONS:

- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Timing Restrictions for Lactating Dairy Animals Following Treatment

VISION™ Rate Per Treated Acre	Days Before Grazing	Days Before Hay Harvest
Up to 1 pint	7 days	37 days
Up to 2 pints	21 days	51 days



## SORGHUM

**VISION™** herbicide may be applied preplant, postemergence, or preharvest in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds as well as control their seedlings.

Do not graze or feed treated sorghum forage or silage prior to mature grain stage. If sorghum is grown for pasture or hay, refer to "**PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD (NON-CROPLAND)**" section of this label for specific grazing and feeding restrictions.

Do not apply **VISION™** to sorghum grown for seed production.

### PREPLANT APPLICATION:

Up to 8 fluid ounces of **VISION™** may be applied per acre if applied at least 15 days before sorghum planting.

### POSTEMERGENCE APPLICATION:

Up to 8 fluid ounces of **VISION™** per acre may be applied after sorghum is in the spike stage (all sorghum emerged) but before sorghum is 15" tall. For best performance, apply **VISION™** when the sorghum crop is in the 3- to 5-leaf stage and weeds are small (less than 3" tall). Use drop pipes (drop nozzles) if sorghum is taller than 8". Keep the spray off the sorghum leaves and out of the whorl to reduce the likelihood of crop injury and to improve spray coverage of weed foliage. Applying **VISION™** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10-14 days.

**Preharvest uses in Texas and Oklahoma only:** Up to 8 fluid ounces of **VISION™** per acre may be applied for weed suppression any time after the sorghum has reached the soft dough stage. An agriculturally approved surfactant may be used to improve performance. For aerial applications, use at least 2 gallons of water-based carrier per treated acre. Delay harvest until 30 days after a preharvest treatment.

### SPLIT APPLICATION:

**VISION™** may be applied in split applications: preplant followed by postemergence or preharvest; or postemergence followed by preharvest.

### SORGHUM TANK MIXES AND SEQUENTIAL TREATMENTS

**VISION™** may be applied prior to, in a tank mix with, or after one or more of the following herbicides:

Acquire™	Cyclone®	Frontier®	Landmaster®	Peak®
Atrazine	Dual® Magnum®	Gramoxone® Extra	Lasso®	Permit®
Basagran®	Dual® II Magnum®	Guardsman®	Outlook™	Ramrod®
Bicep II Magnum®	Fallow Master™	Laddok® S-12	Paramount®	GlyStar® Plus
Buctril®				

### SORGHUM RESTRICTIONS:

- Do not exceed 8 fluid ounces per acre, per application or a total of 16 ounces per acre, per season on sorghum.
- Do not make more than 2 applications per year.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Observe the following Pre-Harvest Intervals (PHI):
  - Sorghum Grain – 30 days
  - Sorghum Fodder – 30 days
  - Sorghum Forage – 20 days
- Timing Restrictions for Lactating Dairy Animals Following Treatment

<b>VISION™ Rate Per Treated Acre</b>	<b>Days Before Grazing</b>	<b>Days Before Hay Harvest</b>
Less than 1 pint	7 days	37 days

## SOYBEAN

### PREPLANT APPLICATIONS:

Apply 4–16 fluid ounces of **VISION™** per acre to soybeans to control emerged broadleaf weeds prior to planting. Use the higher rates to control perennial or large annual broadleaf weeds. Do not exceed 16 fluid ounces of **VISION™** per acre in a spring application prior to planting soybeans. Following application of **VISION™** to soybeans and a minimum accumulation of 1" rainfall or overhead irrigation, a waiting interval of 14 days is required for 8 fluid ounces per acre or less, and 28 days for 16 fluid ounces per acre. These intervals must be observed prior to planting soybeans or crop injury may occur. Do not make **VISION™** preplant applications to soybeans in geographic areas with average annual rainfall less than 25".

### PREHARVEST APPLICATIONS:

**VISION™** can be used to control many annual and perennial broadleaf weeds and control or suppress many biennial and perennial broadleaf weeds in soybean prior to harvest (refer to Table 1). Apply 8–64 fluid ounces of **VISION™** to soybeans per acre as a broadcast or spot treatment to emerged and actively growing weeds after soybean pods have reached mature brown color and at least 75% leaf drop has occurred. Soybeans may be harvested 14 days or more after a preharvest application. Use the higher rates to control perennial broadleaf weeds or large annual broadleaf weeds. Treatments may not kill weeds that develop from seed or underground plant parts, such as rhizomes or bulblets, after the effective period for **VISION™**. For seedling control, a follow-up program or other cultural practice could be instituted.

Do not use preharvest-treated soybean for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better.

## SOYBEAN TANK MIXES

### PREPLANT TANK MIXES:

**VISION™** may be tank mixed with other herbicides registered for early preplant use in soybeans including burndown herbicides such as glyphosate (Acquire, Roundup Ultra) and 2,4-D or residual herbicides such as Outlook, Frontier or Dual Magnum.

### PREHARVEST TANK MIXES:

**VISION™** may be tank mixed with other herbicides registered for preharvest use in soybeans such as Gramoxone® Extra.

### SOYBEAN RESTRICTIONS:

- Do not feed soybean fodder or hay following a preharvest application of **VISION™**.
- Do not make preharvest applications in California.
- Do not harvest seed within 7 days of last application.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

## SUGARCANE

Apply **VISION™** herbicide for control of annual, biennial, or perennial broadleaf weeds listed in Table 1. Apply 8–24 fluid ounces of **VISION™** to sugarcane per acre for control of annual weeds, 16–32 fluid ounces/acre for control of biennial weeds, and 32 fluid ounces/acre for control or suppression of perennial weeds.

Use the higher level of listed rate ranges when treating dense vegetative growth.

**Timing:** **VISION™** may be applied to sugarcane any time after weeds have emerged, but before the close-in stage of sugarcane. Applications of 32 fluid ounces to sugarcane of **VISION™** per acre made over the top of actively growing sugarcane may result in crop injury. When possible, direct the spray beneath the sugarcane canopy to minimize the likelihood of crop injury. Using directed sprays will also help maximize the spray coverage of weed foliage.

## SUGARCANE TANK MIXES

**VISION™** may be tank mixed with other products registered for use in sugarcane such as Asulox®, atrazine, Evik®, and 2,4-D.

### SUGARCANE RESTRICTIONS:

- Do not make more than 2 applications per year.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.
- Do not harvest within 87 days of last application.
- Timing Restrictions for Lactating Dairy Animals Following Treatment:

<b>VISION™ Rate Per Treated Acre</b>	<b>Days Before Grazing</b>	<b>Days Before Hay Harvest</b>
Up to 1 pint	7 days	37 days
Up to 2 pints	21 days	51 days

### TURF AND LAWNS

For use by commercial applicators on residential, recreational or institutional turf and lawns; for use in sod farms, apply 8–24 fluid ounces to turf of **VISION™** per acre for control of annual weeds, 16–32 fluid ounces for control of biennial weeds, and 32 fluid ounces for suppression of perennial weeds.

**VISION™** will also suppress many other listed perennial broadleaf weeds and woody brush and vine species. Refer to Table 2 for rate recommendations based on targeted weed or brush species and growth stage. Some weed species will require tank mixes for adequate control.

Apply 30–200 gallons of diluted spray per treated acre (3–17 quarts of water per 1,000 square feet), depending on density or height of weeds treated and on the type of equipment used.

To avoid injury to newly seeded grasses, delay application of **VISION™** until after the second mowing. Furthermore, applying more than 16 fluid ounces of **VISION™** per treated acre to turf may cause noticeable stunting or discoloration of sensitive grass species such as bentgrass, carpetgrass, buffalograss, and St. Augustinegrass.

In areas where roots of sensitive plants extend, do not apply more than 4 fluid ounces of **VISION™** per treated acre to turf on coarse-textured (sandy-type) soils, or in excess of 8 fluid ounces per treated acre on fine-textured soils. Do not make repeat applications in these areas for 30 days and until previous applications of **VISION™** have been activated in the soil by rain or irrigation.

### TURF AND LAWN TANK MIXES

Apply 3.2–8 fluid ounces of **VISION™** per acre to turf in a tank mix with one of the products in **Table 9** at the rates listed. Use the higher rates when treating established weeds.

**Table 9.**

Tank Mix Partner
Brox 2E
MCPA
MCPP
2,4-D

### TURF and LAWN RESTRICTIONS:

- Do not make more than 2 applications per year.
- **VISION™** contains 0.475 pound a.e. of dicamba per pint. When tank mixing with products that contain dicamba, do not exceed a combined total of 1.0 pound of a.e. per acre per application.

### SITES OF USE ON THIS LABEL

This product may be used on the following sites:

Asparagus  
 Conservation Reserve Program (CRP) land  
 Corn (field, pop, seed and silage) (not for use on sweet corn)  
 Cotton (preplant only)  
 Fallow Cropland  
 Proso Millet  
 Pastures  
 Rangeland  
 General Farmstead  
 Barley, Oats, Triticale and Wheat  
 Sorghum  
 Soybean  
 Sugarcane  
 Turf

Look inside for complete "**Restrictions and Limitations**" and "**Application Instructions**".



### 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 use of the product in a manner inconsistent with its labeling, all of which are beyond the control of Helena Chemical Company or the Seller. To the extent allowed by applicable law, all such risks shall be assumed by the Buyer.

Helena Chemical Company warrants 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 ALLOWED BY APPLICABLE LAW, HELENA CHEMICAL COMPANY MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT ALLOWED BY APPLICABLE LAW, IN NO CASE SHALL HELENA CHEMICAL COMPANY OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. Helena Chemical Company and the Seller offer this product, and the Buyer and User accept 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 Helena Chemical Company.

If these conditions are not acceptable, return unopened package to point of purchase for a refund.

BASF Corporation registered trademarks are Banvel, Banvel SGF, Clarity, Fallow Master, Frontier, Guardsman, Marksman, Paramount, Acquire and Outlook.

BASF AG trademarks are Basagran and Laddok.

E. I. du Pont de Nemours & Company registered trademarks are Accent, Ally, Asana, Canvas, Express, Finesse, Glean, Harmony, Karmex, and Lexone.

Syngenta Corp. registered trademarks are Amber, Beacon, Bicep II Magnum, Caparol, Dual II Magnum, Evik, Exceed, Peak, Princep, and Tough.

Novartis AG registered trademark is Dual Magnum.

Novartis Corp. trademark is Spirit.

Rhone-Poulenc Agriculture Ltd. registered trademark is Bronate.

Bayer AG registered trademark is Sencor.

Dow AgroSciences LLC registered trademarks are Crossbow, Curtail, FirstRate, Garton, Lorsban, Stinger, and Tordon.

AgroSciences LLC. trademark is Hornet.

Monsanto Co. registered trademarks are Bronco, Bullet, Harness, Landmaster, Lariat, Lasso, Partner, Ramrod, Roundup Ultra, and Roundup Ready.

Monsanto Co. trademarks are Degree, Degree Xtra and Field Master

Zeneca Inc. registered trademarks are Ambush, Cyclone, DoublePlay, Eradicane, Gramoxone, Surpass, Touchdown, Sutan and Warrior.

Zeneca Inc. trademarks are FullTime, Topnotch and Touchdown.

AgrEvo USA Company registered trademark is Dakota.

Schering AgrEvo GmbH. registered trademarks are Liberty, Liberty Link and Tiller.

Rohm and Hass registered trademark is Kerb.

Nissan Chemical registered trademark is Permit.

American Cyanamid Co. registered trademarks are Clearfield, Lightning and Prowl.

Valent USA Corp. registered trademark is Select.

FMC Corp. registered trademarks are Furadan and Pounce.

Bayer Corporation registered trademark is Axlom.

Riverside trademark is Moxy.

Spraying Systems, Inc. registered trademarks are Turbo Teejet and Turbo Floodjet.

Gariock International, Inc. registered trademark is Delavan.

Albaugh, Inc. registered trademark is GlyStar.



# Specimen Label



Dow AgroSciences



## SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

For the control of broadleaf annual and perennial weeds, and certain woody plants and vines on:

- Conservation Reserve Program (CRP), rangeland and permanent grass pastures,
- conifer plantations, and
- airports, barrow ditches, communication transmission lines, electrical power and utility rights-of-way, fencerows, gravel pits, industrial sites, irrigation ditch banks, dry irrigation ditches or canals, military lands, mining and drilling areas, non-irrigation ditch banks, oil pads, parking lots, petroleum tank farms, pipelines, railroads, roadsides, storage areas, storm water retention areas, substations, unimproved rough turfgrasses, vacant lots and other non-crop residential areas; and
- natural areas (open space) for example, campgrounds, parks, prairie management, trails and trailheads, recreation areas, wildlife openings and wildlife habitat and management areas;
- established turfgrass, including sod farms, residential lawns, golf courses, recreational, commercial and public turf areas
- including grazed areas on all of these listed sites

Do not apply to St. Augustine grass in the state of Florida.

Not for Sale, Distribution, or Use in Nassau and Suffolk Counties, New York.

Active Ingredient(s):	
fluroxypyr 1-methylheptyl ester: ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetic acid, 1-methylheptyl ester .....	45.52%
Other Ingredient(s) .....	54.48%
Total .....	100.00%

Acid Equivalent: fluroxypyr: ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetic acid - 31.59% - 2.8 lb/gal

### Precautionary Statements

#### Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-586

## WARNING

Causes Substantial But Temporary Eye Injury. Wear Protective Eyewear • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Do not get in eyes or on clothing. Avoid contact with skin.

### 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 resistance category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as natural rubber  $\geq 14$  mils
- Shoes plus socks
- Protective eyewear

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, 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 Protections 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 before eating, drinking, chewing gum, using tobacco, 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.

### First Aid

**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. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

### Environmental Hazards

This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms and 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. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

### Directions for Use

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

Read all Directions for Use carefully before applying.

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. 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 24 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 natural rubber  $\geq 14$  mil
- Shoes plus socks
- 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 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.

**Entry Restrictions for Non-WPS Uses:** Do not allow people (other than applicator) or pets on treatment area during application. Do not enter into treated areas until sprays have dried.

### Storage and Disposal

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

**Pesticide Storage:** Store above 10°F or warm and agitate before use to ensure any crystallization that may have occurred redissolves.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. 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.

**Nonrefillable containers 5 gallons or less:**

**Container Handling:** Nonrefillable container. 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 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. **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 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**Refillable containers 5 gallons or larger:**

**Container Handling:** 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**Nonrefillable containers 5 gallons or larger:**

**Container Handling:** Nonrefillable container. 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 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. 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 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

### Product Information

Vista® XRT herbicide provides control of broadleaf annual and perennial weeds, and certain woody plants and vines on

- Conservation Reserve Program (CRP), rangeland and permanent grass pastures,
- conifer plantations, and
- airports, barrow ditches, communication transmission lines, electrical power and utility rights-of-way, fencerows, gravel pits, industrial sites, irrigation ditch banks, dry irrigation ditches or canals, military lands, mining and drilling areas, non-irrigation ditch banks, oil pads, parking lots, petroleum tank farms, pipelines, railroads, roadsides, storage areas, storm water retention areas, substations, unimproved rough turfgrasses, vacant lots and other non-crop residential areas; and
- natural areas (open space) for example, campgrounds, parks, prairie management, trails and trailheads, recreation areas, wildlife openings and wildlife habitat and management areas;
- established turfgrass, including sod farms, residential lawns, golf courses, recreational, commercial and public turf areas
- including grazed areas on all of these sites

Do not apply to St. Augustine grass in the state of Florida.

### Use Precautions and Restrictions

- Do not contaminate irrigation ditches or water used for domestic purposes.
- **Maximum Application Rate:** Do not apply more than 23 fl oz per acre of Vista XRT per year. Split applications of Vista XRT may be made during a single year provided the total amount of Vista XRT applied does not exceed the maximum labeled rate of 23 fl oz per acre.
- **Grazing restrictions:** There are no grazing restrictions for livestock, including lactating or non-lactating dairy animals.
- **Harvest restrictions:** Do not apply within 7 days of harvesting grass for hay or silage from treated areas.
- **Slaughter restrictions:** Meat animals must be withdrawn from treated forage at least 2 days before slaughter.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **In Arizona:** The state of Arizona has not approved this product for use on plants grown for agricultural/commercial production; such as on designated grazing areas.
- **Management of Kochia Biotypes:** Research has suggested that many biotypes of kochia can occur within a single population. While kochia biotypes can vary in their susceptibility to Vista XRT, all will be suppressed or controlled at 12 oz per acre provided application timing and growing conditions are optimal. Application of Vista XRT at rates of less than 6 fl oz per acre per acre can result in a shift to more tolerant biotypes within a population.
- Avoid applications where proximity of susceptible plants or other desirable plants is likely to result in exposure to spray or spray drift.
- Do not store or handle other agricultural chemicals with the same containers used for this product. Do not apply other agricultural chemicals or pesticides with equipment used to apply this product unless equipment has been thoroughly cleaned (see Clean-Out Procedures for Spray Equipment).
- **Non-irrigation Ditch Banks and Seasonally Dry Wetland Sites:** It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs), and transitional areas between upland and lowland sites. Do not apply directly to water and take precautions to minimize spray drift to water. For control of woody plants and broadleaf weeds in these sites, follow use directions and application methods on this label for the specific site being treated.
- **Dry Irrigation Canals/Ditches:** Do not apply Vista XRT to the inner banks of dry irrigation canals/ditches unless a 120-day restriction on use of irrigation water can be observed or residue levels of fluroxypyr (active ingredient in Vista XRT) are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less. Do not apply on ditches or canals currently being used to transport irrigation water or that will be used for irrigation within 4 months following treatment.
- Minimize overspray to open water when treating target vegetation non-flowing, quiescent or transient water. **Note:** Consult local public water control authorities before applying this product around public water; permits may be required to treat such areas.

### Avoiding Drift Run-off to Surface Water or Adjacent Land

Apply this product strictly in accordance with the run-off precautions on this label in order to minimize off-site exposure and potential effects on aquatic organisms and non-target plants.

Under certain conditions, this product may have a potential to run-off to surface water or adjacent land. Use vegetation filter strips or treatment setbacks along rivers, creeks, streams, wetlands, etc or on the downhill side of treated areas where run-off could occur to minimize water runoff.

### Avoiding Injurious Spray Drift

Spray drift produced during application is the responsibility of the applicator and care should be taken to minimize off-target movement of spray during application. A drift control agent suitable for agricultural use may be used with this product to aid in reducing spray drift but the first choice should be a coarser spray category nozzle set-up. If used, follow applicable use directions and precautions on the manufacturer's label.

**Do not apply where drift may be a problem due to proximity to susceptible crops or other non-target broadleaf plants. Do not apply or otherwise permit this product or sprays containing this product to contact crops or other desirable broadleaf plants**, including alfalfa, beans, cotton, grapes, melons, peas, potatoes, safflower, soybeans, sugar beets, sunflower, tobacco, tomatoes, and other vegetable crops, flowers, fruit trees, ornamentals, shade trees or other susceptible broadleaf plants. Do not permit spray mist or drift containing this product to contact susceptible plants because even very small quantities of the spray, that may not be visible, can cause severe injury during either active or dormant periods. Do not use in or around greenhouses.

**Ground Application:** To minimize spray drift, apply Vista XRT in a total spray volume of 5 gallons or more per acre using spray equipment designed to produce coarse or larger droplets per ASAE S-572 standard. Refer to the spray equipment manufacturer's recommendations for detailed information on nozzle types, arrangement, spacing and operating height and pressure. Operate equipment at spray pressures no greater than is necessary to produce a uniform spray pattern. Operate the spray boom no higher than is necessary to produce a uniformly overlapping pattern between spray nozzles. Do not apply with hollow cone-type insecticide nozzles or other nozzles that produce a fine-droplet spray.

**Aerial Application in Rights-of-Way (Helicopter Only):** In rights-of-way areas, do not apply this product with fixed-wing aircraft.

**Aerial Application in Rangeland, Permanent Grass Pastures, and Conifer Plantations:** Both fixed wing and helicopter equipment may be used to apply this product on rangeland, permanent green pastures and conifer plantations, but fixed wing aircraft require additional drift mitigation measures.

To minimize spray drift, apply Vista XRT in a total spray volume of 3 gallons or more per acre. Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Avoid applying below 2 mph due to variable wind direction and high potential for temperature inversion. Spray drift from aerial application can be minimized by applying a coarse spray at spray boom pressure no greater than 30 psi; by using straight-stream nozzles directed straight back, and by using a spray boom that does not exceed 75% of wing span or 90% of rotor diameter. For fixed wing aircraft, do not exceed 140 mph during the application. Do not apply more than 10 feet above the vegetation canopy 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.

Do not apply under conditions of a low level air temperature inversion. A temperature inversion is characterized by little or no wind and air temperature that is lower near the ground than at higher levels. The behavior of smoke generated by an aircraft-mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

### 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 operating nozzles on the boom must not exceed 75% of the wing span or 90% of the rotary diameter.
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 should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. (This information is advisory in nature and does not supersede 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, 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 75 of the wingspan or 90% of 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 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 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 be made 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 upwards 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).

### Mixing Directions

#### Vista XRT - Alone

1. Fill the spray tank with 1/2 to 3/4 of the total amount of water.
2. Start agitation.
3. Add the required amount of Vista XRT.
4. Continue agitation while filling the spray tank to the required volume.
5. To ensure a uniform spray mixture, continuous agitation is required during application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

**Vista XRT – Tank Mix**

If a broader spectrum of weed control is needed, Vista XRT may be tank mixed with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

**Tank Mixing Precautions:**

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates for respective products or maximum allowable application rates for any active ingredient in the tank mix.
- Do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment have been adequately cleaned. (See Equipment Clean-Out Procedures.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** Conduct a jar test prior to tank mixing to ensure compatibility of Vista XRT and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Undiluted Vista XRT and 2,4-D amine concentrates are not compatible and cannot be mixed together in the same supply tank when using injection equipment. Combinations of Vista XRT and 2,4-D ester are compatible for this purpose.

**Mixing Order for Tank Mixes**

1. Fill the spray tank to 1/4 to 1/3 of the total spray volume required with water.
2. Start agitation.
3. Add different formulation types in the following order: (1) dry flowables; (2) wettable powders; (3) aqueous suspensions, flowables or liquids. Maintain agitation and fill spray tank to 3/4 of the total spray volume. Allow time for complete mixing and dispersion after each addition.
4. Add Vista XRT and other emulsifiable concentrates and any solutions.
5. Finish filling the spray tank. Maintain continuous agitation during mixing and throughout application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

If application or agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

**Clean-Out Procedures for Spray Equipment**

To avoid injury to or exposure of nontarget crops, thoroughly clean and drain spray equipment used to apply this product after use. Clean equipment as soon as possible after application. Spray equipment should be cleaned by the following procedure:

1. Drain any remaining spray mixture from the application equipment.
2. Hose down the interior surfaces of the tank while filling the tank 1/2 full of water.
3. Flush tank, hoses, boom, and nozzles with clean water for 10 minutes. Fill the tank with water and recirculate for 15 minutes. Spray part of the mixture through the hoses, boom, and nozzles and drain the tank.
4. Remove all spray nozzles and screens and clean separately.
5. If spray equipment will be used for pesticide application to crops other than those labeled for this product, repeat steps 1 and 2 and thoroughly wash the outside of spray tank and the boom.

**Note:** Rinsate may be disposed of on site according to label use directions or at an approved waste disposal facility.

**Application Directions**

**Application Timing**

Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at and following time of application may reduce weed control. **Only susceptible weeds that are emerged at the time of application will be controlled.** If foliage is wet at the time of application, control may be decreased. Applications of Vista XRT are rain-fast within 1 hour after application.

**Effect of Temperature on Herbicidal Activity**

Herbicidal activity of Vista XRT is influenced by weather conditions. Optimum activity requires active plant growth. The temperature range for optimum herbicidal activity is 55°F to 85°F. Reduced activity will occur when temperature is below 45°F. Frost before application (3 days) or shortly after (3 days) may reduce weed control.

**Application Rates**

Generally, application rates at the lower end of the specified rate range will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials, brush and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds) the higher rates within the rate range will be needed. Weeds growing in the absence of competition from other vegetation generally require higher rates to obtain satisfactory control or suppression.

**Spray Coverage**

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 3 gallons per acre by air or 5 gallons per acre by ground equipment. Inadequate spray volume and coverage may result in decreased weed control. As vegetative canopy and weed density increase, increase spray volume to obtain equivalent weed control. Refer to manufacturer's directions for information on relationships between spray volume, and nozzle size and arrangement.

**Spot Treatments**

Spot treatments may be applied with a calibrated boom or hand sprayer according to directions provided below.

**Hand-Held Sprayers:** Hand-held or backpack sprayers may be used for spot applications of Vista XRT if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1,000 sq ft. Mix the amount of Vista XRT (fl oz or ml) listed in the table with 1 gallon or more of water and apply to an area of 1,000 sq ft. To calculate the amount of product required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3,500 sq ft, multiply the table value by 3.5 (Calculation: 3,500 ÷ 1,000 = 3.5). An area of 1000 sq ft is approximately 10.5 X 10.5 yards in size.

Amount of Vista XRT to Equal Specified Broadcast Rate (Mix with 1 Gallon or More of Water and Apply to 1,000 sq ft)				
6 fl oz/acre	9 fl oz/acre	12 fl oz/acre	17 fl oz/acre	23 fl oz/acre
0.14 fl oz (4.1 ml)	0.21 fl oz (6.2 ml)	0.28 fl oz (8.3 ml)	0.4 fl oz (11.7 ml)	0.59 fl oz (17.5 ml)

1 fl oz = 29.6 (30) ml

**Weeds Controlled or Suppressed**

(Numbers in parentheses (-) refer to footnotes):

Weeds Controlled			Weeds Suppressed (3)
6 – 12 fl oz/acre	12 fl oz/acre	23 fl oz/acre	23 fl oz/acre
bedstraw (cleavers)	chickweed	blackberry	buckhorn
common	cocklebur	catsear	plantain
purslane	coffeeweed, common	giant ragweed	common mullein
hairy buttercup	ragweed	goldenrod	cudweed
hemp dogbane	curly dock	henbane	field bindweed
kochia (1), (2), (4)	cutleaf primrose	hop clover	field horsetail
marshelder (2)	dandelion	horsenettle	field pennycress
sericea	dogfennel	ironweed	leafy spurge
lespedeza (2)	grape	lantana	mustard
tropic croton	horseweed/ marestail	musk thistle	narrowleaf plantain
	morningglory	prickly pear	nightshade species
	prickly lettuce	cactus	spiny amaranth
	sunflower	wild carrot	wild buckwheat
	vetch		yellow thistle
	velvetleaf		
	venice mallow		
	western ragweed		
	white clover		
	white cockle		

<sup>1</sup>Includes ALS and some other herbicide-tolerant or resistant biotypes.

<sup>2</sup>Use the higher rate in the range to control these weeds.

<sup>3</sup>Suppression is expressed as a reduction in weed competition (reduction in population or vigor) as compared to untreated areas. The degree of weed control and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.

<sup>4</sup>For best results, add a methylated or ethylated seed oil surfactant (i.e. MSO or ESO) at the rate of 1-2 quarts per acre for control of kochia. For kochia infestations with larger plants at more advanced growth stages, increasing the rate of Vista XRT to 13 - 17 or 23 fl oz or the addition of 1-2 quarts per acre of 2,4-D ester along with the 1-2 quarts of seed oil surfactant per acre will improve control.

**Uses**

- airports, barrow ditches, communication transmission lines, electrical power and utility rights-of-way, fencerows, gravel pits, industrial sites, irrigation ditch banks, dry irrigation ditches or canals, military lands, mining and drilling areas, non-irrigation ditch banks, oil pads, parking lots, petroleum tank farms, pipelines, railroads, roadsides, storage areas, storm water retention areas, substations, unimproved rough turfgrasses, vacant lots and other non-crop residential areas; and
- natural areas (open space) for example, campgrounds, parks, prairie management, trails and trailheads, recreation areas, wildlife openings and wildlife habitat and management areas;

Including rights-of-way, industrial sites, seasonally dry wetlands, non-irrigation ditch banks, and irrigation banks. Use on irrigation banks includes application of Vista XRT on the tops and outer banks of the canals or ditches. Use of Vista XRT on the inner portion of dry irrigation canals or ditches can be done as long as water is not used for irrigation for 120 days or residue levels of Vista XRT are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less. See use precautions above for more information.

Apply at the broadcast rate of 6 to 23 fl oz per acre when weeds are small and/or actively growing. Split applications of Vista XRT herbicide may be made during a single year, provided the total amount of Vista XRT applied does not exceed the maximum-labeled rate of 23 fl oz per acre. See listing of Weeds Controlled or Suppressed and use directions under the Conifer Plantations section.

Apply spot treatments at rates and spray volumes equivalent to broadcast application. See Spot Treatments in the Application Directions section.

**Conifer Plantations**

**Herbaceous Weed Control:** Apply Vista XRT at the broadcast rate of 6 to 23 fl oz per acre when weeds are small and/or actively growing. See listing of Weeds Controlled or Suppressed.

**Brush Control:** Vista XRT may be tank-mixed with Garlon® 4 Ultra herbicide, Garlon 3A herbicide, Accord XRT II herbicide, Rodeo, Tordon® K herbicide, Tordon 101M or other registered herbicides for these sites at timings recommended on the respective labels and at the indicated rates to increase control of undesirable pine species, manzanita, squaw carpet, shingle oak, red maple, red oak and other woody species.

**Directed Sprays Application for Conifer Release:** To release conifers from competing brush and weeds such as manzanita and squaw carpet, mix 2 to 4 qts of Vista XRT in enough water to make 100 gallons of spray mixture (0.5 to 1% v/v). This spray mixture should be directed onto foliage of competitive brush using calibrated sprayers anytime after the hardwoods and brush have reached full leaf size including fall applications. Care should be taken to direct spray solutions away from contact with conifer foliage, particularly foliage of desirable conifers.

**Restrictions:**

- Do not apply Vista XRT to conifer plantations as an over-the-top broadcast treatment during active terminal growth (from initiation of budbreak/growth flush until seasonal terminal growth has hardened off and over-wintering buds have formed). Directed spray applications may be made to conifer plantations during periods of active growth, but care should be taken to avoid spray contact with actively growing foliage.
- Do not apply Vista XRT in tank mix combination to conifer plantations unless the tank mix product is labeled for weed or brush control in conifers by the application method being employed.
- Maximum application rate: Do not apply more than 23 fl oz of this product per acre per year.

Products in Tank Mix	Application Rates (amount per acre)	Woody Plants Controlled
<b>Western Woody Brush</b>		
Vista XRT + Rodeo	16 - 23 fl oz + 16 - 32 fl oz	blackberry
Vista XRT + Garlon 4 Ultra or Forestry Garlon XRT	16 - 23 fl oz + 1 - 1.25 fl oz or 1.3 - 1.66 pt	Blackberry manzanita
<b>All Areas</b>		
Vista XRT + Garlon 4 Ultra or Forestry Garlon XRT	17 - 23 fl oz + 2 - 3 qt	bay species black cherry dogwood water oak willow oak
Vista XRT + Garlon 3A	17 - 23 fl oz + 3 - 4 qt	bay species black cherry dogwood water oak willow oak
Vista XRT + Garlon 3A + Tordon 101M (site preparation only)	17 - 23 fl oz + 2 - 4 qt + 4 - 8 qt	pine species red maple red oak shingle oak Virginia pine water oak
Vista XRT + Garlon 3A + Tordon K (site preparation only)	17 - 23 fl oz + 4 qt + 2 qt	pine species red maple red oak shingle oak Virginia pine water oak
Vista XRT + Rodeo or Accord XRT II herbicide	17 - 23 fl oz + 4 - 6 qt	dogwood gallberry pines wax myrtle

**Rangeland and Permanent Grass Pastures**

Broadcast apply Vista XRT as a single treatment or as sequential postemergence treatment using ground or aerial application equipment. Apply as a broadcast treatment when weeds are actively growing, but prior to bud stage of weed growth. Vista XRT may be applied in tank mix combination with other foliar-applied herbicides labeled for use on rangeland and permanent grass pastures to control additional weeds and woody plants. Read and follow applicable use directions, precautions and limitations on each product label.

**Spot Treatment for Control of Prickly Pear or Other Species**

Apply in a total spray volume of 20 to 100 gallons per acre. To prevent misapplication, spot treatments should be applied with hand sprayers according to directions provided below. Do not exceed maximum application rates for Vista XRT for a given treatment site per acre. On rangeland and permanent grass pastures, spot treatments may be applied at 0.5% v/v, however do not apply more than 23 fl oz of Vista XRT per acre per year. Repeat treatments may be applied as necessary, but total use must not exceed the maximum amount specified.

**Tank Mix:** For control of additional weeds and woody plants, Vista XRT may be tank mixed with Milestone, Remedy® Ultra herbicide, Chaparral, Opensight, ForeFront HL, Tordon 22K herbicide or other herbicides registered for use on rangeland or grass pastures at the suggested application rates or at rates allowed by the appropriate label.

Products in Tank Mix	Application Rates (amount per acre)	Additional Weeds/Brush Controlled
Vista XRT + Milestone	4-6 fl oz 4-7 fl oz	Spotted, diffuse and Russian or other knapweeds Yellow starthistle Tropical soda apple Canada thistle
Vista XRT + Opensight or Chaparral	4-6 fl oz 3.3 oz	Whitetop mustards
Vista XRT + Remedy Ultra	4 fl oz ± 9 fl oz	buttercup, hairy croton dogbane, hemp kochia lespedeza, sericea marshelder ragweeds sunflower thistle, musk vetch
Vista XRT + Remedy Ultra	6 fl oz ± 3/4 pt	dandelion dock, curly dogfennel goldenrod horseweed/ marestail ironweed lantana plantain
Vista XRT + Remedy Ultra	9 fl oz ± 1 pt	blackberry persimmon rose, multiflora wax myrtle
Vista XRT + Tordon 22K	6 fl oz ± 1/2 pt	bindweed, field broomweed, annual buttercup, hairy cocklebur croton dogbane, hemp dogfennel goldenrod horsenettle horseweed kochia lespedeza, sericea marshelder mullein ragweeds sneezeweed, bitter sunflower thistle, musk vetch
Vista XRT + Tordon 22K	12 fl oz ± 1 pt	blackberry locust plum, wild prickly pear cactus rose, Cherokee rose, Macartney rose, multiflora sumac

- Maximum application rate: Do not apply more than 23 fl oz of this product per acre per year.

Users who wish to use Vista XRT on a turfgrass species not identified on this label may determine the suitability for such use by treating a small area at a listed rate. Prior to treatment of larger areas, observe the treated area for any sign of herbicidal injury during 30 days of typical growing conditions. The user assumes the responsibility for any plant damage or other liability resulting from use of Vista XRT on turfgrass species not identified on this label.

Use Vista XRT on the following established turfgrass species:

Common Name	Scientific Name
<b>Established Cool Season Turfgrass</b>	
bentgrass <sup>1</sup>	<i>Agrostis</i> spp.
bluegrass, Kentucky	<i>Poa pratensis</i>
fescue, chewing	<i>Festuca rubra</i> var. <i>commutata</i>
fescue, creeping red	<i>Festuca rubra</i>
fescue, sheep	<i>Festuca ovina</i>
fescue, tall	<i>Schedonorus arundinaceus</i>
ryegrass, perennial	<i>Lolium perenne</i>

Common Name	Scientific Name
<b>Established Warm Season Turfgrass<sup>2</sup></b>	
bahiagrass	<i>Paspalum notatum</i> var. <i>saurae</i> parodi
bermudagrass <sup>1</sup>	<i>Cynodon dactylon</i>
centipedegrass	<i>Eremochloa ophiuroides</i>
St. Augustine grass <sup>3</sup>	<i>Stenotaphrum secundatum</i>
zoysiagrass	<i>Zoysia japonica</i>
zoysiagrass	<i>Zoysia tenuifolia</i>
fescue, tall (growing in warm season areas)	<i>Schedonorus arundinaceus</i>

<sup>1</sup>Use Vista XRT on these species only at the 6 fl oz per acre rate and only if some injury can be tolerated.

<sup>2</sup>Use no more than 11 fl oz per acre on warm season turfgrass species unless some injury can be tolerated. Do not apply this product to warm season turfgrass while it is transitioning from winter dormancy to active growth in late winter or early spring as spring green-up can be significantly delayed. Warm season turfgrass species (except St. Augustine grass) may be treated with up to 11 fl oz per acre during winter if warm season turfgrass is completely dormant when making applications to control winter annual broadleaf weeds.

<sup>3</sup>Do not apply this product to St. Augustine grass in the state of Florida. In states other than Florida, do not apply more than 6 fl oz of this product per acre to St. Augustine grass and do not make applications to St. Augustine grass between April 1 and October 31.

**Weeds Controlled or Suppressed and Application Rates**  
See the Handheld Sprayer Information and chart above

Weeds Controlled	Application Rate <sup>1</sup>	
	(fl oz/acre)	(fl oz/1000 sq ft)
bedstraw, catchweed deadnettle, purple purslane, common	6-8	0.14 - 0.19 (4.1 - 5.5 ml)
bindweed, field burnweed, American burweed, lawn buttonweed, Virginia catsear, common chickweed cinquefoil, oldfield clover, white ivy, ground lespedeza, common medic, black sida, southern speedwell, slender strawberry, wild velvetleaf woodsorrel, common woodsorrel, yellow	8-11	0.19 - 0.25 (5.5 - 7.6 ml)
clover, hop dandelion, common henbit knotweed, prostrate matchweed plantain, broadleaf plantain, buckhorn spurge, spotted	23	0.59 fl oz (17.5 ml)
dollarweed (suppression only) veronica species (suppression only)	8-23	0.19 - 0.59 (5.5 - 17.5 ml)

#### Restrictions:

- **Grazing and harvest restrictions:** There are no grazing restrictions for livestock, including lactating or non-lactating dairy animals. Withdraw meat animals from treated forage at least 2 days before slaughter. Do not harvest grass for hay or silage from treated areas within 7 days of application.
- **Plantback restriction:** Only forage grasses, wheat, barley, oats, field corn, sweet corn and grain sorghum may be planted in treated fields within 120 days following application of Vista XRT.
- **Vista XRT may injure or kill legumes.** Do not apply if the injury to legumes cannot be tolerated. Legumes may be less sensitive to herbicidal injury after plant growth is mature and seed has set.
- **Maximum Application Rate:** Do not apply more than 23 fl oz of Vista XRT per acre per year.

#### Established turfgrass

Vista XRT herbicide provides postemergence control of annual and perennial broadleaf weeds in established turfgrass, including sod farms, residential lawns, golf courses, recreational, commercial and public turf areas.

#### Use Precautions and Restrictions

- Do not use Vista XRT on golf course putting greens or tees.
- Do not allow sprays of Vista XRT to contact exposed suckers or exposed roots of shallow rooted trees and shrubs or injury may occur.
- Do not reseed turfgrass for three weeks after application.
- To minimize the potential for unacceptable turfgrass injury, do not make additional applications within 4 weeks of a previous application unless injury can be tolerated.
- Apply only to turfgrass species that are well established. Mow newly-seeded turfgrass two or three times before applying Vista XRT.
- Do not apply this product to warm season turfgrasses while they are transitioning from winter dormancy to active growth in late winter or early spring as spring green-up can be significantly delayed. Warm season turfgrass species (except St. Augustine grass) may be treated with up to 11 fl. oz of Vista XRT per acre during winter if warm season turfgrass is completely dormant when making applications to control winter annual broadleaf weeds.

<sup>1</sup>Generally, application rates at the lower end of the rate range will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials, and other conditions where control is more difficult (plant stress conditions, such as drought or extreme temperatures, dense weed stands and/or larger weeds), the higher rates within the rate range will be needed. Weeds growing in the absence of competition from other vegetation generally require higher rates to obtain satisfactory control or suppression.

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### Terms and Conditions of Use

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If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

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### Warranty Disclaimer

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Dow AgroSciences 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. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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### Inherent Risks of Use

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It is impossible to eliminate all risks associated with use of this product. Crop 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 temperatures, 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 Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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### Limitation of Remedies

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To the extent permitted by law, 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 Dow AgroSciences' 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.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

<sup>®</sup>Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

**Produced for**  
**Dow AgroSciences LLC**  
9330 Zionsville Road  
Indianapolis, IN 46268

Label Code: D02-362-002  
Replaces Label: D02-362-001  
LOES Number: 010-02181

EPA accepted 12/05/13

### Revisions

1. Update to trademark information
2. Added Alternate Brand Name: Vista XRT
3. Sale copy: Revised to read, "For the control of.....including grazed areas on all of these listed sites. Do not apply to St. Augustine grass in the state of Florida."
4. Revised Storage and Disposal
5. Deleted reference to web site for additional product information.
6. Revised Product Information and added statement, "Do not apply to St. Augustine grass in the state of Florida."
7. Use Precautions and Restrictions: (1) Changed "22 oz" in second bullet point to "23 fl oz.; (2) Added sentence to second bullet point to read, "Split applications of Vista Ultra.....does not exceed the maximum labeled rate of 23 fl oz per acre."; (3) Revised fourth bullet to read, "**Harvest restrictions:** Do not apply within 7 days of harvesting....from treated areas."; (4) Added bullet to read, "Do not store or handle other agricultural chemicals.....(see Clean-Out Procedures for Spray Equipment)."; (5) Added bullet to read, "**Non-irrigation Ditch Banks and Seasonally Dry Wetland Sites:** It is permissible....for the specific site being treated."; (6) Added bullet to read, "**Dry Irrigation Canals/Ditches:** Do not apply Vista Ultra....within 4 months following treatment."; (7) Added bullet to read, "Minimize overspray....required to treat such areas."
8. Removed subheader, "**Avoiding Runoff**". Revised the section in general.
9. Avoiding Injury to Non-Target Plants: Revised header to "Avoiding Injurious Spray Drift"; Revised second paragraph.
10. Revised Aerial Application Non-Cropland Areas, Including Rights-of-Way (Helicopter Only):
11. Revised Spray Drift Management (Aerial Application)
12. Revised Aerial Spray Drift Advisory Information:
13. Updated Controlling Droplet Size: under following subheadings (1) "**Pressure**"; (2) "**Nozzle Orientation**", (3) "**Boom Length**" and (4) "**Application Height**"
14. Revised Temperature Inversions section
15. Mixing Instructions: (1) revised format and language related to mixing directions for using Vista Ultra alone; (2) revised language for Vista Ultra – Tank
16. Revised Tank Mixing Precautions
17. Revised Tank Mix Compatibility Testing
18. Tank Mixing Instructions: Revised format and language of section
19. Revised Sprayer Cleanup section including adding, "Rinsate may be disposed of on site according to label use directions or at an approved waste disposal facility."
20. Revised Application Timing:
21. Revised Spray Coverage: (
22. Revised Spot Treatments.
23. Revised Hand-Held Sprayers:
24. Weeds Controlled or Suppressed: (1) Revised column header "22 fl oz/acre" to "23 fl oz/acre"; (2) added "prickly pear cactus" to weeds controlled (2) removed "spotted knapweed" under weeds controlled using 22 fl oz/acre, Revised notes of this section.
25. Revised Non-Cropland and Pine Plantations:
26. Conifer and Tree Plantations: Added header
27. Herbaceous Weed Control: Added section
28. Updated Brush Control
29. Directed Sprays Application for Conifer Release: Added section
30. Restrictions: Added section
31. Updated Products in Tank Mix Table:
32. Rangeland and Permanent Grass Pastures: Added section
33. Established turfgrass: Added section

## ATTENTION:

This specimen label is provided for general information only.

- This pesticide product may not yet be available or approved for sale or use in your area.
- It is your responsibility to follow all Federal, state and local laws and regulations regarding the use of pesticides.
- Before using any pesticide, be sure the intended use is approved in your state or locality.
- Your state or locality may require additional precautions and instructions for use of this product that are not included here.
- Monsanto does not guarantee the completeness or accuracy of this specimen label. The information found in this label may differ from the information found on the product label. You must have the EPA approved labeling with you at the time of use and must read and follow all label directions.
- You should not base any use of a similar product on the precautions, instructions for use or other information you find here.
- Always follow the precautions and instructions for use on the label of the pesticide you are using.

21225H2-13

# Ranger

PRO® Herbicide

Ranger PRO herbicide is a complete broad-spectrum postemergence professional herbicide for industrial, turf and ornamental weed control.

## Complete Directions for Use

EPA Reg. No. 524-517

2010-1

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

Read the entire label before using this product.

Use only according to label instructions.

Not all products listed in this label are registered for use in California. Check the registration status of each product in California before using.

Read the "LIMIT OF WARRANTY AND LIABILITY" statement at the end of the label before buying or using. If terms are not acceptable, return at once unopened.

THIS IS AN END-USE PRODUCT. MONSANTO DOES NOT INTEND AND HAS NOT REGISTERED IT FOR REFORMULATION. SEE INDIVIDUAL CONTAINER LABEL FOR REPACKAGING LIMITATIONS.

## 1.0 INGREDIENTS

### ACTIVE INGREDIENT:

\*Glyphosate, N-(phosphonomethyl)glycine,  
in the form of its isopropylamine salt ..... 41.0%  
OTHER INGREDIENTS (including surfactant): ..... 59.0%  
100.0%

\*Contains 480 grams per liter or 4 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.

This product is protected by U.S. Patent Nos. 5,683,958; 5,703,015; 6,063,733; 6,121,199; 6,121,200. No license granted under any non-U.S. patent(s).

## 2.0 IMPORTANT PHONE NUMBERS

FOR PRODUCT INFORMATION OR ASSISTANCE IN USING THIS PRODUCT,  
CALL TOLL-FREE, 1-800-332-3111.

IN CASE OF AN EMERGENCY INVOLVING THIS PRODUCT, OR FOR MEDICAL ASSISTANCE,  
CALL COLLECT, DAY OR NIGHT, (314)-694-4000.

## 3.0 PRECAUTIONARY STATEMENTS

### 3.1 Hazards to Humans and Domestic Animals

Keep out of reach of children.

## CAUTION!

CAUSES EYE IRRITATION.

Avoid contact with eyes or clothing.

**FIRST AID:** Call a poison control center or doctor for treatment advice.

<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></ul>
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- Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
- You may also contact (314) 694-4000, collect day or night, for emergency medical treatment information.
- This product is identified as Ranger PRO® herbicide, EPA Registration No. 524-517.

**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.

### 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 Personal Protective Equipment. If there are no such instructions for washables, 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.

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

Users should:

- 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.

## 3.2 Environmental Hazards

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.

## 3.3 Physical or Chemical Hazards

Mix, store and apply spray solutions of this product using only stainless steel, 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.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. This product can only be used in accordance with the Directions for Use on this label or in separately published Monsanto Supplemental Labeling or Fact Sheets. Supplemental labeling can be found on the Internet at [www.agrian.com](http://www.agrian.com), [www.cdms.net](http://www.cdms.net) or [www.greenbook.net](http://www.greenbook.net) websites or obtained by contacting your Authorized Monsanto Retailer or Monsanto Company Representative.

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, is: coveralls, chemical resistant gloves greater than 14 mils in thickness composed of materials such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber, 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 (40 CFR Part 170) for agricultural pesticides. 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.

## 4.0 STORAGE AND DISPOSAL

Proper pesticide storage and disposal are essential to protect against exposure to people and the environment due to leaks and spills, excess product or waste, and vandalism. Do not allow this product to contaminate water, foodstuffs, feed or seed by storage or disposal.

**PESTICIDE STORAGE:** Store pesticides away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Keep container closed to prevent spills and contamination.

**PESTICIDE DISPOSAL:** To avoid wastes, use all material in this container, including rinsate, by application in accordance with label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program. Such programs are often run by state or local governments or by industry. All disposal must be in accordance with applicable Federal, State and local procedures.

See container label for container handling and disposal instructions and for refilling limitations.

## 5.0 PRODUCT INFORMATION

**Product Description:** This product is a postemergence, systemic herbicide with no residual soil activity. It gives broad-spectrum control of many annual weeds, perennial weeds, woody brush and trees. It is formulated as a water-soluble liquid containing surfactant and no additional surfactant is needed or recommended. It may be applied through standard equipment after dilution and mixing with water or other carriers according to label instructions.

**Time to Symptoms:** This product moves through the plant from the point of foliage contact to and into the root system. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above-ground growth and deterioration of underground plant parts. Effects are visible on most annual weeds 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.

**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. See the "WEEDS CONTROLLED" sections of this label for specific weed rates.

Always use the higher product application rate in the range when weed growth is heavy or dense, or when weeds are growing in an undisturbed (non-cultivated) area. Reduced

weed control may result from treating weeds with disease or insect damage, weeds heavily covered with dust, or weeds under poor growing conditions.

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

**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 appropriate 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, ensure spray coverage is uniform and complete. Do not spray foliage to the point of runoff.

**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.

**Maximum Application Rates:** The maximum application or use rates stated throughout this label are given in units of volume (fluid ounces or quarts) of this product per acre. However, the maximum allowed application rates apply to this product combined with the use of any and all other herbicides containing the active ingredient glyphosate, whether applied separately or as tank mixtures, on a basis of total pounds of glyphosate (acid equivalents) per acre. If more than one glyphosate-containing product is applied to the same site within the same year, you must ensure that the total use of glyphosate (pounds acid equivalents) does not exceed the maximum allowed. The combined total of all treatments must not exceed 10.6 quarts of this product (10.6 pounds of glyphosate acid) per acre per year. See the "INGREDIENTS" section of this label for necessary product information.

### ATTENTION

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

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) that 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.

## 5.1 Weed Resistance Management

GROUP	9	HERBICIDE
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Glyphosate, the active ingredient in this product, is a Group 9 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 9 herbicides. Weed species resistant to Group 9 herbicides may be effectively managed utilizing another herbicide from a different Group or using other cultural or mechanical practices.

To minimize the occurrence of glyphosate resistant biotypes observe the following good weed management practices:

- Scout your application site before and after herbicide applications.
- Control weeds early when they are relatively small.
- Incorporate other herbicides and cultural or mechanical practices as part of your weed control system where appropriate.
- Utilize the label rate for the most difficult weed in the site. Avoid tank-mixtures with other herbicides that reduce this product's efficacy (through antagonism) or tank mixtures which encourage rates of this product below the labeled amounts.
- Control weed escapes and prevent weeds from setting seeds.
- Clean equipment before moving from site to site to minimize spread of weed seed.
- Use new commercial seed as free of weed seed as possible.
- Report any incidence of repeated non-performance of this product on a particular weed to your Monsanto representative, local retailer, or county extension agent.

## 5.2 Management for Glyphosate Resistant Weed Biotypes

**NOTE:** Appropriate testing is critical in order to confirm weed resistance to glyphosate. Contact your Monsanto representative to determine if resistance has been confirmed to any particular weed biotype in your area. Control instructions for biotypes confirmed as resistant to glyphosate are made available on separately published supplemental

labeling or Fact Sheets for this product and may be obtained from your local retailer or Monsanto representative.

Since the occurrence of new glyphosate resistant weeds cannot be determined until after product use and scientific confirmation, Monsanto Company is not responsible for any losses that may result from the failure of this product to control glyphosate resistant weed biotypes.

The following good weed management practices are encouraged to reduce the spread of confirmed glyphosate resistant biotypes:

- If a naturally occurring resistant biotype is present at your site, this product may be tank-mixed or applied sequentially with an appropriately labeled herbicide with a different mode of action to achieve control.
- Cultural and mechanical control practices may also be used as appropriate.
- Scout treated sites after herbicide applications and control escapes of resistant biotypes before they set seed.
- Thoroughly clean equipment before leaving sites known to contain resistant biotypes.

## 6.0 MIXING

Mix, store and apply spray solutions of this product using only clean stainless steel, 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.**

Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices where required by state or local regulations.

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

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

### 6.1 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 clean water. Add the labeled amount of this product near the end of the filling process and mix gently (well). 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.

### 6.2 Tank Mixtures

This product does not provide residual weed control. This product may be tank-mixed with other herbicides to provide residual weed control, a broader weed control spectrum or an alternate mode of action. Always read and follow label directions for all products in the tank mixture. 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.

When this label describes a tank mixture with a generic active ingredient such as diuron, 2,4-D or dicamba, the user is responsible for ensuring the mixture product label allows the specific application.

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 listed in this label. Mixing this product with herbicides or other materials not identified on this label may result in reduced performance.

### 6.3 Tank Mixing Procedure

When tank mixing, read and carefully observe label directions, cautionary statements and all information on the labels of all products used. Add the tank-mix product to the tank as directed by the label. Maintain agitation and add the labeled amount of this product.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation may be 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. Ensure that the specific tank mixture product is registered for application at the desired site.

Refer to the "Tank Mixtures" section for additional precautions.

### 6.4 Mixing Percent Solutions

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 Ranger PRO Herbicide						
	1/2%	1%	1-1/2%	2%	5%	10%	
1 gal	2/3 oz	1-1/3 oz	2 oz	2-2/3 oz	6-1/2 oz	13 oz	
25 gal	1 pt	1 qt	1-1/2 qt	2 qt	5 qt	10 qt	
100 gal	2 qt	1 gal	1-1/2 gal	2 gal	5 gal	10 gal	

2 tablespoons = 1 fluid ounce

For use in backpack, knapsack or pump-up 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.

## 6.5 Surfactants

Nonionic surfactants which are labeled for use with herbicides may be used. Do not reduce rates of this product when adding surfactant. When adding additional surfactant, use 0.5 percent surfactant concentration (2 quarts per 100 gallons of spray solution) when using surfactants which contain at least 70 percent active ingredient or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) for those surfactants containing less than 70 percent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactant label.

## 6.6 Colorants or Dyes

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 dilution. Use colorants or dyes according to the manufacturer's instructions.

## 6.7 Drift Control Additives

Drift reduction additives may be used with all equipment types, except wiper applicators, and sponge bars. When a drift reduction additive is used, read and carefully observe precautionary statements and all other information appearing on the additive label. The use of drift reduction additives can affect spray coverage which may result in reduced performance.

## 7.0 APPLICATION EQUIPMENT AND TECHNIQUES

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

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

#### SPRAY DRIFT MANAGEMENT

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

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.

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

### 7.1 Aerial Equipment

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

FOR AERIAL APPLICATION IN CALIFORNIA, REFER TO THE FEDERAL SUPPLEMENTAL LABEL FOR AERIAL APPLICATIONS IN THAT STATE FOR SPECIFIC INSTRUCTIONS, RESTRICTIONS AND REQUIREMENTS.

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

Avoid direct application to any body of water.

Use the labeled rates of this herbicide in 3 to 25 gallons of water per acre.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations that 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 streaked, uneven or overlapped application, use appropriate marking devices.

#### Aircraft Maintenance

**PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART.** The maintenance of an

organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion. To prevent corrosion of exposed parts, thoroughly wash aircraft after each day of spraying to remove residues of this product accumulated during spraying or from spills. Landing gear is most susceptible.

#### AERIAL SPRAY DRIFT MANAGEMENT

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

1. The distance of the outermost nozzles on the boom must not exceed 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 should be observed.

#### Importance of 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 the **Wind, Temperature and Humidity**, and **Temperature Inversion** sections of this label).

#### Controlling droplet size

- **Volume:** Use high flow-rate nozzles to apply the highest practical spray volume. Nozzles with the higher rated flows produce larger droplets.
- **Pressure:** Use the lower spray pressures labeled for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. 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 backwards, parallel to the air stream, will produce larger droplets than other orientations. 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 larger droplets than other nozzle types.
- **Boom Length:** For some use patterns, reducing the effective boom length to less than 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 largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces the exposure of the 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 increases, with increasing drift potential (higher wind, smaller droplets, etc.).

#### Wind

Drift potential is lowest between wind speeds of 2 to 10 miles per hour. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 miles per hour 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 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

This product 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).

## 7.2 Ground Broadcast Equipment

Apply the labeled rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified in this label or in separate supplemental labeling or Fact Sheets published by Monsanto. As density of weeds increases, increase spray volume 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.

## 7.3 Backpack or High-Volume Equipment

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

Refer to the "Annual Weeds" instructions of "WEEDS CONTROLLED" section for specific rates and restrictions.

## 7.4 Selective Equipment

This product may be diluted with water and applied through recirculating spray systems, shielded applicators, hooded sprayers, wiper applicators or sponge bars, to listed weeds growing in any site specified on this label.

**AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.** Contact of this product with desirable vegetation may result in unwanted plant damage or destruction.

#### Recirculating Spray

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.

Adjust application equipment used above desired vegetation to 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 is likely to result in discoloration, stunting or destruction.

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

A shielded or hooded applicator directs the herbicide solution onto weeds, while shielding desirable vegetation from the herbicide. 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.**

#### Wiper Applicators and Sponge Bars

A wiper or sponge applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution. 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 miles per hour. 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 product performance may result from the use of solutions held in storage. Clean wiper parts immediately after using this product by thoroughly flushing with water.

**For Rope or Sponge Wick Applicators:** Solutions ranging from 33 to 75 percent of this product in water may be used.

**For Panel Applicators and Pressure-Feed Systems:** Solutions ranging from 33 to 100 percent of this product in water may be used.

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

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

When applied as directed, 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	

## 7.5 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 undiluted concentrate of other products when using injection systems unless specifically directed.

## 7.6 CDA Equipment

The rate of this product applied per acre by controlled droplet application (CDA) equipment must not be less than the amount directed in this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 2 to 15 gallons of water per acre.

CDA equipment produces a spray pattern that is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or any other tissue of desirable vegetation, as damage or destruction is likely to result.

## 8.0 SITE AND USE INSTRUCTIONS

Detailed instructions follow alphabetically, by site.

Unless otherwise specified on this label or in separate supplemental labeling or Fact Sheets published by Monsanto, applications may be made to control any weeds listed in the annual, perennial and woody brush tables. Also refer to the "Selective Equipment" section.

### 8.1 Cut Stump

Cut stump treatments may be made on any site listed on this label. This product will control many types of woody brush and tree species. 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, make applications during periods of active growth and full leaf expansion.

**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.** Some sprouts, stems, or trees may share the same root system. Adjacent trees having a similar age, height and spacing may signal shared roots. Whether grafted or shared, injury is likely to occur to non-treated stems/trees when one or more trees sharing common roots are treated.

### 8.2 Forestry Site Preparation

This product is labeled for the control or partial control of woody brush, trees and herbaceous weeds in forestry sites and for use in preparing or establishing wildlife openings within these sites and maintaining logging roads.

This product is labeled for use in site preparation prior to planting any tree species, including Christmas trees, eucalyptus, hybrid tree cultivars and silvicultural nursery sites.

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 10.6 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 all products used. Use according to the most restrictive precautionary statements for each product in the mixture.

**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.

Any labeled rate of this product may be used in a tank mix with the following products for forestry site preparation.

Arsenal Applicators Concentrate	Garlon 3A
Chopper	Garlon 4
Chopper Gen2	Oust XP
Escort	

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 tank mixture rates.

Do not apply this product as an over-the-top broadcast spray for forestry conifer or hardwood release unless otherwise directed on this label or in separately published Monsanto supplemental labeling or Fact Sheets.

## 8.3 Non-Crop Areas and Industrial Sites

This product may be used in non-crop areas, airports, apartment complexes, commercial sites, ditch banks, driveways, dry ditches, dry canals, fencerows, forestry sites, golf courses, greenhouses, industrial sites, landscape areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, ornamentals, parks, parking areas, petroleum tank farms and pumping installations, railroads, recreational areas, residential areas, rights-of-way, roadsides, schools, shadehouses, sports complexes, storage areas, substations, turfgrass areas, utility sites, warehouse areas, and wildlife management sites.

This product may also be used in non-food crop sites, Christmas tree farms, plant nurseries, sod or turf seed farms.

Unless otherwise specified, applications may be made to control any weeds listed in the "WEEDS CONTROLLED" section of this label.

### Weed Control, Trim-and-Edge, Bare Ground

This product may be used in non-crop and non-food crop areas. It may be applied with any application equipment described in this label. This product may be used to trim-and-edge around objects in non-crop sites, for spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

**TANK MIXTURES:** This product may be tank mixed with the following products provided that the specific product is labeled for application at the use site. Refer to the individual product labels for approved sites and application rates.

Arsenal	Pendulum WDG
Barricade 65WG	Plateau
Clarity	Princep DF
diuron	Princep Liquid
Endurance	Ronstar 50 WSP
Escort	Sahara
Garlon 3A	simazine
Garlon 4	Surflan
Karmex	Telar
Krovar 1 DF	Vanquish
Oust XP	2,4-D
Pendulum 3.3 EC	

This product plus dicamba tank mixtures may not be applied by air in California.

When applied as a tank mixture for bare ground, this product provides control of the emerged annual weeds and control or partial control of emerged perennial weeds, woody brush and trees.

For control or partial control of the following perennial weeds, apply 1 to 2 quarts of this product plus 2 to 8 ounces of Oust XP per acre.

Bahiagrass	Fescue, tall
Bermudagrass	Johnsongrass
Broomsedge	Poorjoe
Dallisgrass	Quackgrass
Dock, curly	Vaseygrass
Dogfennel	Vervain, blue

### Chemical Mowing - Perennials

This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 8 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass, quackgrass or reed canarygrass covers. Use 6 fluid ounces of this product per acre when treating Kentucky bluegrass. Apply treatments in 10 to 40 gallons of spray solution per acre.

Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

### Chemical Mowing - Annuals

For growth suppression of some annual grasses, annual ryegrass, wild barley and wild oats growing in coarse turf on roadsides or other industrial areas, apply 4 to 5 fluid ounces of this product in 10 to 40 gallons of spray solution per acre. Make applications when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments may cause injury to the desired grasses.

### Bromus Species and Medusahead in Pastures and Rangelands

**Bromus species.** This product may be used to treat downy brome (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus mollis*) and cheatgrass (*Bromus secalinus*) found in industrial, rangeland and pasture sites. Apply 8 to 16 fluid ounces of this product per acre on a broadcast basis.

For best results, coincide treatment with early seedhead emergence of the most mature plants. Delaying the application until this growth stage will maximize the emergence of other weedy grass flushes. Make applications to the same site each year until seed

banks are depleted and the desirable perennial grasses can become reestablished on the site.

**Medusahead.** To treat medusahead, apply 16 fluid ounces of this product per acre as soon as plants are actively growing, and prior to the 4-leaf stage. Applications may be made in the fall or spring.

Applications to brome and medusahead may be made using ground or aerial equipment. Aerial applications for these uses may be made using fixed wing or helicopter equipment. For aerial applications, apply in 2 to 10 gallons of water per acre. For applications using ground equipment, apply in 10 to 20 gallons of water per acre. When applied as directed in this label, there are no grazing restrictions.

#### Dormant Turfgrass

This product may be used to control or suppress many winter annual weeds and tall fescue for effective release of dormant bermudagrass and bahiagrass turf. Treat only when turf is dormant and prior to spring green-up.

Apply 8 to 64 fluid ounces of this product per acre. Apply the labeled rates in 10 to 40 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated.

Treatments in excess of 16 fluid ounces per acre may result in injury or delayed green-up in highly maintained areas, golf courses and lawns. DO NOT apply tank mixtures of this product plus Oust XP in highly maintained turfgrass areas. For further uses, refer to the "Railroads" section of this label, which gives rates for dormant bermudagrass treatment and the "Roadsides" section of this label, which gives rates for dormant bermudagrass and bahiagrass treatments.

#### Actively Growing Bermudagrass

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. DO NOT apply more than 16 fluid ounces of this product per acre in highly maintained turfgrass areas. DO NOT apply tank mixtures of this product plus Oust XP in highly maintained turfgrass areas. For further uses, refer to the "Roadsides" section of this label, which gives rates for actively growing bermudagrass treatments. Use only in areas where some temporary injury or discoloration can be tolerated.

#### Turfgrass Renovation, Seed, or Sod Production

This product controls most existing vegetation prior to renovating turfgrass areas or establishing turfgrass grown for seed or sod. For maximum control of existing vegetation, delay planting or sodding 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 like bermudagrass, summer or fall applications provide the best control. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.

Do not disturb soil or underground plant parts before treatment. Delay tillage or renovation techniques such as vertical mowing, coring or slicing for 7 days after application to allow translocation into underground plant parts.

Desirable turfgrasses may be planted following the above procedures.

Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turfgrass. Broadcast or hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

If application rates total 3 quarts per acre or less, no waiting period between treatment and feeding or livestock grazing is required. If the rate is greater than 3 quarts per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

## 8.4 Habitat Management

#### Habitat Restoration and Management

This product may be used to control exotic and other undesirable vegetation in habitat management and natural areas, including rangeland and wildlife refuges. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broad-spectrum vegetation control requirements. Spot treatments can be made to selectively remove unwanted plants for habitat management and enhancement.

#### Wildlife Food Plots

This product may be used as a site preparation treatment 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 to allow translocation into underground plant parts.

## 8.5 Injection and Frill (Woody Brush and Trees)

This product may be used to control or partially control woody brush and trees by injection or frill applications. Apply this product using suitable equipment that must penetrate into the living tissue. Apply the equivalent of 1/25 fluid ounce (1 ml) of this product per each 2 to 3 inches of trunk diameter at breast height (DBH). This is best achieved by applying a 50 to 100 percent concentration of this product either to a continuous frill around

the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frilled or cut areas in species that exude sap freely. In these species, make the frill or cuts at an oblique angle to produce a cupping effect and use a 100 percent concentration of this product. For best results, make application during periods of active growth and after full leaf expansion.

## 8.6 Ornamentals, Plant Nurseries, and Christmas Trees

#### Post-Directed and Trim-and-Edge

This product may be used prior to the planting of and as a post-directed spray around established woody ornamental species, arborvitae, azalea, boxwood, crabapple, eucalyptus, euonymus, fir, Douglas fir, jobba, hollies, lilac, magnolia, maple, oak, poplar, privet, pine, spruce and yew, growing in plant nurseries, on Christmas tree farms, or on other non-food tree production sites. This product may also be used to trim and edge around trees, buildings, sidewalks and roads, potted plants and other objects in a nursery setting.

Desirable plants may 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 ORNAMENTALS AND CHRISTMAS TREES. Care must be exercised to avoid contact of spray, drift or mist with foliage or bark of established ornamental species.

#### Site Preparation

This product may be used prior to planting any ornamental, nursery or Christmas tree species.

#### Wiper Applications

This product may be used through wick or other suitable wiper applicators to control or partially control undesirable vegetation around established eucalyptus or poplar trees. See the "Selective Equipment" section of this label for further information about the proper use of wiper applicators.

#### Greenhouse/Shadehouse

This product may be used to control weeds growing in and around greenhouses and shadehouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

## 8.7 Parks, Recreational and Residential Areas

This product may be used in parks, recreational and residential areas. It may be applied with any application equipment described in this label. This product may be used to trim-and-edge around trees, fences, and paths, around buildings, sidewalks, and other objects in these areas. This product may be used for spot treatment of unwanted vegetation. This product may be used to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

All of the instructions in the "Non-Crop Areas and Industrial Sites" section apply to park and recreational areas.

## 8.8 Railroads

All of the instructions in the "Non-Crop Areas and Industrial Sites" section apply to railroads.

#### Bare Ground, Ballast and Shoulders, Crossings, and Spot Treatment

This product may be used to maintain bare ground on railroad ballast and shoulders. Repeat applications of this product may be used, as weeds emerge, to maintain bare ground. This product may be used to control tall-growing weeds to improve line-of-sight at railroad crossings and reduce the need for mowing along rights-of-way. For crossing applications, up to 80 gallons of spray solution per acre may be used.

This product may be tank mixed with the following products provided that the specific product is registered for ballast, shoulder, spot, bare ground and crossing treatments:

Arsenal	Krovar I DF
Clarity	Oust XP
diuron	Sahara
Escort	Spike
Garlon 3A	Telar
Garlon 4	Vanquish
Hyvar X	2,4-D

#### Brush Control

This product may be used to control woody brush and trees on railroad rights-of-way. Apply 4 to 10 quarts of this product per acre as a broadcast spray, using boom-type or boomless nozzles. Up to 80 gallons of spray solution per acre may be used. Apply a 3/4- to 2-percent solution of this product when using high-volume spray-to-wet applications. Apply a 5- to 10-percent solution of this product when using low-volume directed sprays

for spot treatment. This product may be mixed with the following products for enhanced control of woody brush and trees:

Arsenal	Garlon 4
Escort	Tordon K
Garlon 3A	

#### Bermudagrass Release

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Apply 1 to 3 pints of this product in up to 80 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Johnsongrass
Bluestem, silver	Trumpetcreeper
Fescue, tall	Vaseygrass

This product may be tank-mixed with Oust XP. If tank-mixed, use no more than 1 to 3 pints of this product with 1 to 2 ounces of Oust XP per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust XP label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Fescue, tall
Blackberry	Johnsongrass
Bluestem, silver	Poorjoe
Broomsedge	Raspberry
Dallisgrass	Trumpetcreeper
Dewberry	Vaseygrass
Dock, curly	Vervain, blue
Dogfennel	

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Do not make repeat applications in the same season since severe injury may occur.

## 8.9 Roadsides

All of the instructions in the "Non-Crop Areas and Industrial Sites" section apply to roadsides.

#### Shoulder Treatments

This product may be used on road shoulders. It may be applied with boom sprayers, shielded boom sprayers, high-volume off-center nozzles, hand-held equipment, and similar equipment.

#### Guardrails and Other Obstacles to Mowing

This product may be used to control weeds growing under guardrails and around signposts and other objects along the roadside.

#### Spot Treatment

This product may be used as a spot treatment to control unwanted vegetation growing along roadsides.

#### Tank Mixtures

This product may be tank-mixed with the following products for shoulder, guardrail, spot and bare ground treatments provided that the specific product is registered for use on such sites. Read and carefully observe label directions, cautionary statements and all information on the labels of all products used.

Clarity	Princep DF
dituron	Princep Liquid
Endurance	Ronstar 50 WSP
Escort	Sahara
Krovar 1 DF	simazine
Oust XP	Surflan
Outrider®	Telar
Pendulum 3.3 EC	Vanquish
Pendulum WDG	2,4-D

See the "Tank Mixtures" section of this label for tank-mixing instructions.

#### Release of Bermudagrass or Bahiagrass

#### Dormant Applications

This product may be used to control or partially control many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. Treat only when turf is dormant and prior to spring green-up. This product may also be tank-mixed with Outrider or Oust XP for residual control. Tank mixtures of this product with Oust XP may delay green-up.

For best results on winter annuals, treat when plants are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is at or beyond the 4- to 6-leaf stage.

Apply 8 to 64 fluid ounces of this product in a tank mixture with 3/4 to 1-1/3 ounces Outrider herbicide per acre. Read and follow all label directions for Outrider herbicide.

Apply 8 to 64 fluid ounces of this product per acre alone or in a tank mixture with 1/4 to 1 ounce per acre of Oust XP. Apply the labeled rates in 10 to 40 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. To avoid delays in green-up and minimize injury, add no more than 1 ounce of Oust XP per acre on bermudagrass and no more than 1/2 ounce of Oust XP per acre on bahiagrass and avoid treatments when these grasses are in a semi-dormant condition.

#### Actively Growing Bermudagrass

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Apply 1 to 3 pints of this product in 10 to 40 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Johnsongrass
Bluestem, silver	Trumpetcreeper
Fescue, tall	Vaseygrass

This product may be tank mixed with Outrider for control or partial control of Johnsongrass and other weeds listed in the Outrider label. Use 8 to 32 fluid ounces of this product with 3/4 to 1-1/3 ounces of Outrider. Use the higher rates of both products for control of perennial weeds or annual weeds greater than 6 inches in height.

This product may be tank mixed with Oust XP. If tank-mixed, use no more than 1 to 2 pints of this product with 1 to 2 ounces of Oust XP per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust XP label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Fescue, tall
Bluestem, silver	Johnsongrass
Broomsedge	Poorjoe
Dallisgrass	Trumpetcreeper
Dock, curly	Vaseygrass
Dogfennel	Vervain, blue

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Repeat applications of the tank mix in the same season causes severe injury.

#### Actively Growing Bahiagrass

For suppression of vegetative growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 6 fluid ounces of this product in 10 to 40 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 4 fluid ounces of this product per acre, followed by an application of 2 to 4 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

This product may be used for control or partial control of Johnsongrass and other weeds listed on the Outrider label in actively growing bahiagrass. Apply 1-1/2 to 4-3/4 ounces of this product with 0.75 to 1.33 ounces of Outrider per acre. Use the higher rates for control of perennial weeds or annual weeds greater than 6 inches in height. Use only on well-established bahiagrass.

A tank mixture of this product plus Oust XP may be used. Apply 6 fluid ounces of this product plus 1/4 ounce of Oust XP per acre 1 to 2 weeks following an initial spring mowing. Make only one application per year.

## 8.10 Utility Sites

This product is labeled for use along electrical power, pipeline and telephone rights-of-way, and in other sites associated with these rights-of-way, substations, roadsides, railroads or similar rights-of-way that run in conjunction with utilities.

This product may be used in utility sites and substations for bare ground, trim-and-edge, spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting a utility site to ornamentals, flowers, turfgrass (sod or seed), or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

This product is also labeled for use in preparing or establishing wildlife openings within these sites, maintaining access roads and for side trimming along utility rights-of-way.

#### Tank Mixtures

Tank mixtures of this product may be used to increase the spectrum of control for herbaceous weeds, woody brush and trees provided that the specific product is registered for application to the desired site. When tank mixing, read and carefully observe the label claims, cautionary statements and all information on the labels of all 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.

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.

**TANK MIXTURES:** This product may be tank mixed with the following products for use in utility sites, provided that the specific product used is labeled for use on these sites. Refer to the individual product labels for approved sites and application rates.

Arsenal	Outrider
atrazine <sup>1</sup>	pendimethalin <sup>1</sup>
Barricade 65WG	Plateau
dicamba <sup>1</sup>	Ronstar 50 WP
diuron <sup>1</sup>	Sahara
Endurance	simazine <sup>1</sup>
Escort	Surflan AS
Escort XP	Surflan WDG
Garlon 3A <sup>2</sup>	Telar DF
Garlon 4 <sup>3</sup>	Transline
Krenite	Vanquish
Krovar I DF	Velpar DF
Oust	Velpar L
Oust XP	2,4-D <sup>1</sup>

<sup>1</sup> Tank mixtures with product containing this generic active ingredient may be made provided the specific product is labeled for application at the use site.

<sup>2</sup> 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 incompatibility problems.

<sup>3</sup> For side trimming treatments, use this product alone or in a tank mixture with Garlon 4.

#### Bare Ground and Trim-and-Edge

This product may be used in utility sites and substations for bare ground, trim-and-edge around objects, spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting a utility site to ornamentals, flowers, turfgrass (sod or seed), or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

This product may be tank mixed with the following products. Refer to these products' labels for approved non-crop sites and application rates.

Arsenal	Plateau
Banvel	Princep DF
Barricade 65WG	Princep Liquid
diuron	Ronstar 50 WP
Endurance	Sahara
Escort	simazine
Garlon 3A	Surflan

## 9.0 WEEDS CONTROLLED

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.

Reduced results may occur when treating weeds heavily covered with dust. For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

For low-volume directed spray applications, use a 5- to 10-percent solution of this product for control or partial control of annual weeds, perennial weeds, or woody brush and trees. Spray 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. To ensure adequate spray coverage, spray both sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple resprouts.

Refer to the following label sections for labeled rates for the control of annual and perennial weeds and woody brush and trees. For difficult to control perennial weeds and woody brush and trees, where plants are growing under stressed conditions, or where infestations are dense, this product may be used at 5 to 10 quarts per acre for enhanced results.

### 9.1 Annual Weeds

Use 1 quart per acre if weeds are less than 6 inches in height or runner length and 1.5 quarts to 4 quarts per acre if weeds are over 6 inches in height or runner length or when weeds are growing under stressed conditions.

For spray-to-wet applications, 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 for smaller weeds growing under stressed conditions, use a 1- to 2-percent solution. Use the higher rate for tough-to-control species or for weeds over 24 inches tall.

## WEED SPECIES

Anoda, spurred	Medusahead*
Barley*	Morningglory ( <i>Ipomoea spp</i> )
Barley, little*	Mustard, blue*
Barnyardgrass*	Mustard, tansy*
Bassia, fivehook	Mustard, tumble*
Blittercross*	Mustard, wild*
Bluegrass, annual*	Nightshade, black*
Bluegrass, bulbous*	Oats
Brome, downy*	Panicum, browntop*
Brome, Japanese*	Panicum, fall*
Buttercup*	Panicum, Texas*
Castorbean	Pennycress, field*
Cheatgrass*	Pepperweed, Virginia*
Cheeseweed ( <i>Makua parviflora</i> )	Pigweed*
Chervil*	Puncturevine
Chickweed*	Purslane, common
Cocklebur*	Pusley, Florida
Copperleaf, lophornbeam	Ragweed, common*
Copperleaf, Virginia	Ragweed, giant
Coreopsis, plains/tickseed*	Rice, red
Corn*	Rocket, London*
Crabgrass*	Rocket, yellow
Cupgrass, woolly*	Rye*
Dwarfdandelion*	Ryegrass*
Eclipta*	Sandbur, field*
Falsedandelion*	Sesbania, hemp
Falseflax, smallseed*	Shattercane*
Fiddleneck	Shepherd's-purse*
Filaree	Sicklepod
Fleabane, annual*	Signalgrass, broadleaf*
Fleabane, hairy	Smartweed, ladythumb*
( <i>Coryza bonariensis</i> )*	Smartweed, Pennsylvania*
Fleabane, rough*	Sorghum, grain (milo)*
Foxtail*	Sowthistle, annual
Foxtail, Carolina*	Spanishneedles
Geranium, Carolina	Speedwell, corn*
Goatgrass, jointed*	Speedwell, purslane*
Goosegrass	Sprangletop*
Groundsel, common*	Spurge, annual
Henbit	Spurge, prostrate*
Horseweed/Marestail	Spurge, spotted*
( <i>Coryza canadensis</i> )	Spurry, umbrella*
Itchgrass*	Starthistle, yellow
Johnsongrass, seedling	Stinkgrass*
Junglerice	Sunflower*
Knotweed	Teaweed/Prickly sida
Kochia	Thistle, Russian
Lamb's-quarters*	Velvetleaf
Lettuce, prickly*	Wheat*
Mannagrass, eastern*	Wild oats*
Mayweed	Witchgrass*

\*When using field broadcast equipment (aerial applications or boom sprayers using flat-fan nozzles) these species will be controlled or partially controlled using 1 pint of this product per acre. Applications must be made using 3 to 10 gallons of carrier volume per acre. Use nozzles that ensure thorough coverage of foliage and treat when weeds are in an early growth stage.

### 9.2 Perennial Weeds

Best results are obtained when perennial weeds are treated after they reach the reproductive stage of growth (seedhead initiation in grasses and bud formation in broadleaves). For non-flowering plants, best results are obtained when the plants reach a mature stage of growth. In many situations, treatments are required prior to these growth stages. Under these conditions, use the higher application rate within the labeled range.

Use a 2-percent solution on tough-to-control perennials like bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

Ensure thorough coverage when using spray-to-wet treatments using hand-held equipment. When using hand-held equipment for low-volume directed spot treatments, apply a 5- to 10-percent solution of this product.

Allow 7 or more days after application before tillage.

Weed Species	Rate (QT/A)	Hand-Held % Solution
Alfalfa*	1	2
Alligatorweed*	4	1.5
Anise (fennel)	2 - 4	1 - 2
Artichoke, Jerusalem	3 - 5	2
Bahiagrass	3 - 5	2

Weed Species	Rate (QT/A)	Hand-Held % Solution
Beachgrass, European ( <i>Ammophila arenaria</i> )	—	5
Bentgrass*	1.5	2
Bermudagrass	5	2
Bermudagrass, water (knotgrass)	1.5	2
Bindweed, field	4 - 5	2
Bluegrass, Kentucky	2	2
Bluemead, Texas	4 - 5	2
Brackenfern	3 - 4	1 - 1.5
Bromegrass, smooth	2	2
Bursage, woolly-leaf	—	2
Canarygrass, reed	2 - 3	2
Cattail	3 - 5	2
Clover, red, white	3 - 5	2
Cogongrass	3 - 5	2
Dallisgrass	3 - 5	2
Dandelion	3 - 5	2
Dock, curly	3 - 5	2
Dogbane, hemp	4	2
Fescue (except tall)	3 - 5	2
Fescue, tall	1 - 3	2
Guineagrass	3	1
Hemlock, poison	2 - 4	1 - 2
Horsenettle	3 - 5	2
Horseradish	4	2
Iceplant	2	1.5 - 2
Ivy, German	2 - 4	1 - 2
Johnsongrass	2 - 3	1
Kikuyugrass	2 - 3	2
Knapweed	4	2
Lantana	—	1 - 1.25
Lespedeza	3 - 5	2
Milkweed, common	3	2
Mutly, wirestem	2	2
Mullein, common	3 - 5	2
Napiergrass	3 - 5	2
Nightshade, silverleaf	2	2
Nutsedge, purple, yellow	3	1 - 2
Orchardgrass	2	2
Pampasgrass	3 - 5	1.5 - 2
Paragrass	3 - 5	2
Pepperweed, perennial	4	2
Phragmites*	3 - 5	1 - 2
Quackgrass	2 - 3	2
Redvine*	2	2
Reed, giant	4 - 5	2
Ryegrass, perennial	2 - 3	1
Smartweed, swamp	3 - 5	2
Spurge, leafy*	—	2
Sweet potato, wild*	—	2
Thistle, artichoke	2 - 3	1 - 2
Thistle, Canada	2 - 3	2
Timothy	2 - 3	2
Torpedograss*	4 - 5	2
Trumpet creeper*	2 - 3	2
Vaseygrass	3 - 5	2
Velvetgrass	3 - 5	2
Wheatgrass, western	2 - 3	2

\*Partial control

## 9.3 Woody Brush and Trees

Apply this product after full leaf expansion, unless otherwise directed in this label or separate supplemental label or Fact Sheet published by Monsanto. 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 spray-to-wet treatments using hand-held equipment. When using hand-held equipment for low-volume directed-spray spot treatments, apply a 5- to 10-percent solution of this product.

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	Broadcast Rate (QT/A)	Hand-Held Spray-to-Wet % Solution
Alder	3 - 4	1 - 1.5
Ash*	2 - 5	1 - 2
Aspen, quaking	2 - 3	1 - 1.5
Bearclover (Bearmat)*	2 - 5	1 - 2
Beech*	2 - 5	1 - 2
Birch	2	1
Blackberry	3 - 4	1 - 1.5
Blackgum*	2 - 5	1 - 2
Bracken	2 - 5	1 - 2
Broom, French, Scotch	2 - 5	1.5 - 2
Buckwheat, California*	2 - 4	1 - 2
Cascara*	2 - 5	1 - 2
Catsclaw*	—	1 - 1.5
Ceanothus*	2 - 5	1 - 2
Chamise*	2 - 5	1
Cherry, bitter, black, pin	2 - 3	1 - 1.5
Coyotebrush	3 - 4	1.5 - 2
Creeper, Virginia	2 - 5	1 - 2
Deerweed	2 - 5	1
Dogwood*	2 - 5	1 - 2
Elderberry	2	1
Elm*	2 - 5	1 - 2
Eucalyptus	—	2
Flower, monkey flower*	2 - 4	1 - 2
Goose*	2 - 5	1 - 2
Hasardia*	2 - 4	1 - 2
Hawthorn	2 - 3	1 - 1.5
Hazel	2	1
Hickory*	2 - 5	1 - 2
Honeysuckle	3 - 4	1 - 1.5
Hornbeam, American*	2 - 5	1 - 2
Ivy, poison	4 - 5	2
Kudzu	4	2
Locust, black*	2 - 4	1 - 2
Madrone resprouts*	—	2
Manzanita*	2 - 5	1 - 2
Maple, red*	2 - 4	1 - 1.5
Maple, sugar	—	1 - 1.5
Maple, vine*	2 - 5	1 - 2
Oak, black, white*	2 - 4	1 - 2
Oak, post	3 - 4	1 - 1.5
Oak, northern pin	2 - 4	1 - 1.5
Oak, poison	4 - 5	2
Oak, scrub*	2 - 4	1 - 1.5
Oak, southern red	2 - 3	1 - 1.5
Olive, Russian*	2 - 5	1 - 2
Peppertree, Brazilian (Florida holly)*	2 - 5	1 - 2
Persimmon*	2 - 5	1 - 2
Pine	2 - 5	1 - 2
Poplar, yellow*	2 - 5	1 - 2
Redbud, eastern	2 - 5	1 - 2
Rose, multiflora	2	1
Sage, black	2 - 4	1
Sage, white*	2 - 4	1 - 2

Weed Species	Broadcast Rate (QT/A)	Hand-Held Spray-to-Wet % Solution
Sage brush, California	2 - 4	1
Salmonberry	2	1
Saltcedar*	2 - 5	1 - 2
Sassafras*	2 - 5	1 - 2
Sourwood*	2 - 5	1 - 2
Sumac; laurel, poison, smooth, sugarbush, winged *	2 - 4	1 - 2
Sweetgum	2 - 3	1 - 1.5
Swordfern*	2 - 5	1 - 2
Tallowtree, Chinese	—	1
Tanoak resprouts*	—	2
Thimbleberry	2	1
Tobacco, tree*	2 - 4	1 - 2
Toyon*	-	2
Trumpet creeper	2 - 3	1 - 1.5
Waxmyrtle, southern*	2 - 5	1 - 2
Willow	3	1
Yerba Santa, California*	—	2

\*Partial control

## 10<sup>0</sup> LIMIT OF WARRANTY AND LIABILITY

Monsanto Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Complete Directions for Use label booklet ("Directions") when used in accordance with those Directions under the conditions described therein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE. This warranty is also subject to the conditions and limitations stated herein.

Buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise.

To the extent consistent with applicable law, buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company, including, but not limited to, incompatibility with products other than those set forth in the Directions, application to or contact with desirable vegetation, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period when the product is applied, as well as weather conditions which are outside the application ranges set forth in the Directions, application in any manner not explicitly set forth in the Directions, moisture conditions outside the moisture range specified in the Directions, or the presence of products other than those set forth in the Directions in or on the soil, crop or treated vegetation.

This Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUANTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Upon opening and using this product, buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any verbal or written agreement. If terms are not acceptable, return at once unopened.

Outrider, Ranger PRO, Ranger PRO and Design and Monsanto and Vine Design are registered trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners.

This product is protected by U.S. Patent Nos. 5,683,958; 5,703,015; 6,063,733; 6,121,199; 6,121,200. No license granted under any non-U.S. patent(s).

EPA Reg. No. 524-517

In case of an emergency involving this product, or for medical assistance, Call Collect, day or night, (314) 694-4000.

Packed For:  
MONSANTO COMPANY  
800 N. LINDBERGH BLVD.  
ST. LOUIS, MISSOURI, 63167 U.S.A.  
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012510



## ATENCIÓN:

Esta etiqueta de muestra se entrega únicamente para información general.

- Este producto pesticida puede no estar todavía disponible o aprobado para la venta o utilización en su localidad.
- Usted tiene la responsabilidad de cumplir todas las leyes federales, estatales y locales, así como todas las reglamentaciones relativas a la utilización de pesticidas.
- Antes de utilizar un pesticida, asegúrese de que esté aprobado en su estado o localidad.
- Su estado o localidad puede exigir precauciones adicionales e instrucciones para la utilización de este producto que no están incluidas aquí.
- Monsanto no garantiza el lo completo ni la certeza de esta etiqueta de la espécimen. La información encontró en esta etiqueta puede diferir de la información encontró en la etiqueta del producto. Usted debe tener consigo la etiqueta aprobada por la agencia EPA cuando utilice el producto y debe leer y respetar todas las instrucciones en la etiqueta.
- No debe basarse sobre las precauciones, las instrucciones de utilización y cualquier otra información en esta etiqueta para utilizar algún otro producto similar.
- Siempre siga las precauciones y las instrucciones para el uso en la etiqueta del pesticida que usted utiliza.

# Ranger

PRO® Herbicida

El herbicida Ranger PRO es un herbicida profesional completo de postemergencia y de amplia efectividad, para el control de malezas en zonas industriales, céspedes y ornamentales.

## Instrucciones completas para el uso

Registro en la EPA N° 524-517

2010-1

**EVITE EL CONTACTO DEL HERBICIDA CON EL FOLLAJE, TALLOS, RAICES NO LEÑOSAS EXPUESTAS O FRUTOS EXPUESTOS DE LAS COSECHAS, PLANTAS Y ARBOLES DESEABLES. EN CASO CONTRARIO ES PROBABLE QUE SUFRAN GRAVES DAÑOS O SEAN DESTRUIDOS TOTALMENTE.**

Antes de usar este producto, lea la etiqueta en su totalidad.

Uselo solamente de acuerdo con las instrucciones de la etiqueta.

No todos los productos recomendados en esta etiqueta han sido registrados para su uso en California. Verifique el estado de registro de cada producto en California antes de utilizarlo.

Antes de comprar o usar el producto, lea "LÍMITES EN LA GARANTÍA Y EN LA RESPONSABILIDAD" en la última sección de la etiqueta. Si las condiciones son inaceptables para usted, devuelva el producto inmediatamente sin abrir el recipiente.

ESTE ES UN PRODUCTO PARA USARSE TAL Y COMO ESTÁ PREPARADO. MONSANTO NO LO HA DISEÑADO NI LO HA REGISTRADO PARA QUE SEA REFORMULADO. VEA LA ETIQUETA DEL ENVASE INDIVIDUAL PARA ENTERARSE DE LAS LIMITACIONES DE REEMPAQUE.

## 1.0 INGREDIENTES

INGREDIENTE ACTIVO:

\*Glifosato, N-(fosfonometil)glicina, en forma de su sal de isopropilamina ..... 41.0%  
OTROS INGREDIENTES (incluyendo surfactante): ..... 59.0%  
100.0%

\*Contiene 480 gramos por litro o 4 libras por galón americano del ingrediente activo glifosato, en forma de su sal de isopropilamina. Equivalente a 356 gramos por litro o 3 libras por galón americano del ácido, glifosato.

Este producto está protegido por la patente de los Estados Unidos Nos. 5,683,958; 5,703,015; 6,063,733; 6,121,199; 6,121,200. No se han otorgado licencias bajo ninguna patente que no sea de los Estados Unidos.

## 2.0 TELEFONOS IMPORTANTES

PARA INFORMACION SOBRE EL PRODUCTO O AYUDA  
PARA UTILIZAR ESTE PRODUCTO,  
LLAME GRATIS AL, 1-800-332-3111.

EN CASO DE QUE SE PRESENTE UNA EMERGENCIA RELACIONADA CON ESTE PRODUCTO, O PARA OBTENER AYUDA MEDICA, LLAME POR COBRAR A CUALQUIER HORA DEL DIA O DE LA NOCHE, AL TELEFONO, (314)-694-4000.

## 3.0 ADVERTENCIAS

## 3.1 Riesgos para seres humanos y animales domésticos

Manténgase fuera del alcance de los niños.

### ¡PRECAUCION!

IRRITA LOS OJOS.

Evite el contacto con los ojos y con la ropa.

**PRIMEROS AUXILIOS:** Llame al centro de envenenamientos o a un médico para que le indique el tratamiento.

<b>SI ENTRA EN CONTACTO CON LOS OJOS</b>	<ul style="list-style-type: none"><li>• Mantenga abiertos los ojos y enjuague lenta y cuidadosamente con agua durante 15 a 20 minutos.</li><li>• Si usa lentes de contacto, quíteselos después de los primeros 5 minutos, y continúe enjuagando los ojos.</li></ul>
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- Tenga a mano el envase o la etiqueta del producto cuando llame al centro de envenenamientos o al médico, o cuando vaya a procurarse tratamiento.
- También puede llamar por cobrar al teléfono (314) 694-4000, las 24 horas, para obtener información sobre el tratamiento médico de urgencia.
- Este producto está identificado como herbicida Ranger PRO®, Registro de la EPA N° 524-517.

**ANIMALES DOMESTICOS:** Este producto se considera relativamente no tóxico para los perros y otros animales domésticos; sin embargo, la ingestión de este producto o de grandes cantidades de vegetación recientemente tratada puede resultar en una irritación gastrointestinal temporal (vómito, diarrea, cólico, etc.). Si se observan dichos síntomas, dé al animal suficiente cantidad de líquidos para evitar la deshidratación. Si los síntomas continúan por más de 24 horas, llame al veterinario.

**Equipo de protección personal (PPE)**

Las personas que aplican o manejan este producto deben usar: camisas de manga larga, así como pantalones largos, zapatos y calcetín. Siga las instrucciones del fabricante para limpiar y mantener el equipo de protección personal. En caso de no tener dichas instrucciones para piezas lavables, use detergente y agua muy caliente. Mantenga y lave el equipo de protección personal separado de las demás piezas a lavarse.

Deseche la ropa y otros materiales absorbentes que se hayan empapado o se encuentren muy contaminados con el concentrado de este producto. No los vuelva a utilizar.

En los casos en los cuales el personal encargado de manejar el producto lo hace en ambientes cerrados, cabinas cerradas o aviones, de manera tal que se cumplan los requisitos listados en "Worker Protection Standard (WPS) for agricultural pesticides" (Normas para la Protección de los Trabajadores que trabajan con pesticidas usados en la agricultura) (40 CFR 170.240 (d) (4-6)), los requisitos para el equipo de protección personal del trabajador pueden ser reducidos o modificados de acuerdo a lo que se especifica en las normas WPS.

**Recomendaciones de seguridad para el usuario**

El usuario debe:

- Lavarse las manos antes de comer, beber, mascar goma, usar tabaco o de usar el servicio higiénico.
- Quitarse la ropa inmediatamente en caso de que el pesticida entre dentro de ésta. Luego debe lavarse muy bien y ponerse ropa limpia.

## 3.2 Riesgos al medio ambiente

No aplique directamente al agua, en áreas donde el agua superficial esté presente o en áreas donde haya mareas altas y bajas por debajo del nivel medio de mareas altas. No contamina el agua cuando lave los equipos ni cuando elimine las aguas de lavado de los mismos.

## 3.3 Riesgos de orden físico o químico

Para mezclar, almacenar y aplicar la solución de este producto, se deben usar solamente envases de acero inoxidable, fibra de vidrio, plástico o envases de acero recubiertos internamente con plástico.

NO MEZCLE, ALMACENE O APLIQUE ESTE PRODUCTO O SUS SOLUCIONES PARA ROCIAR EN RECIPIENTES O TANQUES ROCIADORES DE ACERO GALVANIZADO O DE ACERO NO RECUBIERTO (EXCEPTO SI ES ACERO INOXIDABLE). Este producto o la solución para rociar reaccionan con el material de dichos recipientes y tanques, lo cual produce hidrógeno, que puede formar una mezcla de gases altamente combustibles. Si esta mezcla de gases entra en contacto con llamas, chispas, el soplete de un soldador, un cigarrillo encendido o cualquier otra fuente de encendido, puede inflamarse o explotar y causar heridas graves a personas.

## INSTRUCCIONES PARA EL USO

El uso de este producto de cualquier manera que sea inconsistente con las instrucciones dadas en la etiqueta es una violación de las leyes federales. Este producto sólo puede utilizarse de acuerdo con las indicaciones sobre el modo de empleo que figuran en esta etiqueta o en las etiquetas o fichas técnicas adicionales de Monsanto publicadas por separado. Puede consultar las etiquetas adicionales en Internet en [www.agrian.com](http://www.agrian.com), [www.cdms.net](http://www.cdms.net) o [www.greenbook.net](http://www.greenbook.net), o bien puede solicitarlas a su vendedor minorista autorizado de Monsanto o a su representante de Monsanto Company.

No aplique este producto de alguna manera que entre en contacto con los trabajadores u otras personas, ya sea directamente o por medio de alguna corriente de aire. Solamente las personas que los manipulan y que usen equipo protector podrán estar en el área durante su aplicación. Para verificar requisitos específicos de su tribu o estado, consulte con la agencia responsable de la regulación del uso de pesticidas.

### Requisitos para el uso en la agricultura

Use este producto siguiendo estrictamente las instrucciones de la etiqueta y de acuerdo con "Worker Protection Standard", 40 CFR Sección 170. Estas normas contienen los requisitos para proteger a los trabajadores agrícolas en haciendas, bosques, viveros e invernaderos, así como a aquellos trabajadores que manejan pesticidas usados en la agricultura. Las normas contienen los requisitos para entrenar, descontaminar, para dar aviso y para asistencia de emergencia. También contienen instrucciones específicas y excepciones que tienen que ver con el contenido de esta etiqueta en lo relacionado con el equipo para la protección personal (PPE) e intervalos de entrada restringida. Los requisitos mencionados en esta sección se aplican únicamente a los usos de este producto que están regulados por las Normas para la Protección de los Trabajadores (WPS).

No entre ni permita la entrada de personal al área tratada durante el intervalo de entrada restringida (REI) de 4 horas.

El equipo de protección personal (PPE) permitido por el Estándar de Protección al Trabajador (WPS) necesario para una entrada prematura a lugares tratados y que implique el contacto con cualquier cosa que haya sido tratada como plantas, suelo o agua, es: overoles /monos, guantes resistentes a los productos químicos de más de 14 mil de espesor, fabricados con materiales como caucho (goma) butílico, caucho natural, neopreno o caucho nitrilo, zapatos y calcetines.

### Requisitos para usos no agrícolas

Los requisitos en esta sección son para los usos de este producto que NO están cubiertos por WPS (40 CFR Sección 170) para el uso de pesticidas en la agricultura. Las regulaciones del WPS se aplican cuando el producto se usa para obtener productos agrícolas en haciendas, bosques, viveros e invernaderos.

Mantenga a las personas y a los animales domésticos fuera del área tratada hasta que la solución rociada se haya secado.

## 4.0 ALMACENAMIENTO Y DESECHO

Son fundamentales el almacenamiento y la eliminación adecuados de los pesticidas para evitar la exposición de las personas y el medio ambiente como consecuencia de pérdidas y derrames del producto, excedentes o desechos y actos de vandalismo. No permita que este producto contamine el agua, los alimentos de las personas y animales o las semillas por medio del almacenamiento y la eliminación.

**ALMACENAMIENTO DEL PESTICIDA:** Guarde los pesticidas lejos de los alimentos para personas, los alimentos para mascotas, los alimentos para animales, las semillas, los fertilizantes y los materiales de uso veterinario. Mantenga el envase bien cerrado para evitar derramamientos y contaminación.

**ELIMINACION DEL PESTICIDA:** Para evitar desechos, use todo el material contenido en este envase, incluyendo los residuos del enjuague, aplicándolo según las indicaciones de la etiqueta. Si no es posible evitar los desechos, ofrezca el producto restante a una planta de eliminación de desechos o a un programa de eliminación de pesticidas. Estos programas suelen ser manejados por gobiernos estatales o locales o por la industria. Todos los desechos deben seguir los procedimientos federales, estatales y locales aplicables.

Consulte la etiqueta del envase para las instrucciones sobre la manipulación y eliminación y las limitaciones de relleno del mismo.

## 5.0 INFORMACION GENERAL

**Descripción del producto:** Este producto es un herbicida sistémico de aplicación post-emergencia foliar, sin actividad residual en el suelo. Controla un amplio espectro de malezas anuales, malezas perennes, matorrales leñosos y árboles. Está formulado como un líquido soluble en agua que contiene surfactante y no es necesario ni se recomienda el agregado de otro surfactante. Puede aplicarse utilizando equipos convencionales después de su dilución y mezclado con agua o con otros medios de transporte según las instrucciones de la etiqueta.

**Aparición de los síntomas:** Este producto se mueve dentro de la planta desde el punto de aplicación sobre el follaje hasta las raíces. Los efectos visibles incluyen que la planta se marchite y se vuelva amarilla de forma gradual, hasta que su parte exterior se torne completamente color café; mientras tanto, las partes de la planta que están bajo tierra se deterioran completamente. Los efectos visibles en la mayoría de las malezas anuales se pueden apreciar entre los 2 y los 4 días después de la aplicación, pero en la mayoría de las malezas perennes es posible que no se observen hasta después de 7 días o más. El frío extremo o el cielo muy nublado después de la aplicación pueden retardar la actividad del producto y hacer que el efecto visual se demore.

**Etapas de malezas:** Las malezas anuales son más fáciles de controlar cuando son pequeñas. Para lograr el mejor control de la mayoría de las malezas perennes, el tratamiento debe realizarse en las últimas etapas de crecimiento, cerca de su etapa de madurez. Vea en las secciones "MALEZAS CONTROLADAS" de esta etiqueta las proporciones específicas para cada tipo de maleza.

Aplique siempre la mayor cantidad de producto dentro del rango indicado cuando las malezas son muy densas o cuando crecen en áreas no tocadas (no cultivadas). Puede haber una disminución de los resultados cuando se traten malezas afectadas por enfermedades o dañadas por los insectos, malezas cubiertas con mucho polvo o malezas en malas condiciones de crecimiento.

**Modo de acción en las plantas:** El ingrediente activo de este producto inhibe una enzima hallada sólo en las plantas y microorganismos que es esencial para la formación de aminoácidos específicos.

**Prácticas culturales:** Se podrá observar una reducción en el efecto si se aplica el producto a malezas anuales o perennes que hayan sido segadas, que hayan servido de alimento para animales o hayan sido cortadas, y que no hubiesen crecido nuevamente hasta el nivel recomendado para el tratamiento.

**Resistencia a la lluvia:** La lluvia torrencial poco después de la aplicación lavarà el producto del follaje y se requerirá una nueva aplicación para obtener un control adecuado.

**Cobertura de la pulverización:** Para obtener mejores resultados, la cobertura del rocío debe ser completa y uniforme. No rocíe el follaje hasta el punto de escurrecimiento.

**No actividad en el suelo:** Las malezas deben haber emergido en el momento de la aplicación para poder ser controladas por este producto. Las malezas que germinen de semillas después de la aplicación no serán controladas. Las plantas no emergidas con rizomas o raíces subterráneas de malezas perennes no conectadas no se verán afectadas por el herbicida y continuarán creciendo.

**Cantidades de aplicación máximas:** Las cantidades de aplicación o uso máximas especificadas en esta etiqueta están expresadas en unidades de volumen (onzas fluidas o cuartos de galón) de este producto por acre. No obstante, las dosis máximas de aplicación permitidas corresponden al uso de este producto en combinación con otros herbicidas que contienen glifosato como principio activo, tanto si son aplicados como mezclas de tanque o por separado, en función de las libras totales de glifosato (libras de ácido equivalente) por acre. Si se aplica más de un producto que contiene glifosato al mismo sitio dentro del mismo año, debe asegurarse de que el uso total de glifosato (libras de ácido equivalente) no exceda el máximo permitido. El total combinado de todos los tratamientos no debe exceder 10.6 cuartos de galón de este producto (10.6 libras de ácido glifosato) por acre por año. Vea en la sección "INGREDIENTES" de esta etiqueta información importante sobre el producto.

### ATENCIÓN

EVITE EL CONTACTO DEL HERBICIDA CON EL FOLLAJE, TALLOS, RAICES NO LEÑOSAS EXPUESTAS O FRUTOS EXPUESTOS DE LAS COSECHAS, PLANTAS Y ARBOLES DESEABLES. EN CASO CONTRARIO ES PROBABLE QUE SUFRAN GRAVES DAÑOS O SEAN DESTRUIDOS TOTALMENTE.

EVITE EL ACARRREO. CUANDO EL PRODUCTO SE APLIQUE, SE DEBE TENER MUCHO CUIDADO PARA PREVENIR EL DAÑO A PLANTAS Y CULTIVOS DESEABLES.

No permita que la solución del herbicida se nebulice, gotee, sea acarreada o salpique sobre la vegetación deseable. Una cantidad pequeña puede ser suficiente para causar daños graves o destruir las cosechas, plantas u otras áreas que no se desea tratar. La probabilidad de que ocurran daños por el uso de este producto aumenta cuando hay muchas ráfagas de viento, a medida que aumenta la velocidad del viento, cuando la velocidad del viento cambia constantemente o cuando existen otras condiciones meteorológicas que favorecen la dispersión del rociado. Cuando se esté aplicando el producto con un rociador, evite la combinación de presiones y tipos de boquilla que puedan dar como resultado salpicaduras o partículas finas (niebla), que tienen muchas probabilidades de que el producto sea acarreado. EVITE LA APLICACION A ALTA VELOCIDAD O PRESION EXCESIVAS.

**NOTA:** El uso de este producto de cualquier manera contraria a las indicaciones contenidas en esta etiqueta, puede resultar en lesiones a personas, animales o cosechas o pueden ocurrir otras consecuencias no deseadas.

## 5.1 Gestión de resistencia de malezas

GRUPO	9	HERBICIDA
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El glifosato, el principio activo de este producto, es un herbicida del grupo 9 según el sistema de clasificación de efecto de la Weed Science Society of America. Todas las poblaciones de malezas pueden contener plantas naturalmente resistentes a los herbicidas del grupo 9. Las especies de malezas resistentes a los herbicidas del grupo 9 pueden tratarse con buenos resultados utilizando herbicidas de otro grupo o adoptando otras prácticas culturales o mecánicas.

Para reducir al mínimo la incidencia de biotipos resistentes al glifosato, siga las siguientes recomendaciones generales con respecto a la gestión de malezas:

- Haga un reconocimiento del sitio de la aplicación antes y después de haber aplicado herbicidas.
- Comience a controlar las malezas cuanto antes, cuando sean todavía relativamente pequeñas.
- Donde sea apropiado, incorpore otros herbicidas y prácticas culturales o mecánicas como parte del sistema de control de malezas.
- Utilice la cantidad indicada en la etiqueta para las malezas más difíciles de controlar en el sitio. Evite las mezclas de tanque con otros herbicidas que reducen la eficacia de este producto (por antagonismo) o las recomendaciones de mezclas de tanque que alientan la utilización de cantidades de este producto inferiores a las recomendaciones de la etiqueta.
- Controle las malezas omitidas e impida que echen semilla.
- Limpie los equipos antes de trasladarse de un sitio a otro para reducir al mínimo la propagación de semillas de malezas.
- Utilice semillas comerciales nuevas con la menor cantidad posible de semillas de malezas.
- Informe todo incidente por falta de rendimiento reiterado de este producto en una maleza determinada al representante de Monsanto, vendedor minorista de su localidad o agente de extensión del condado.

## 5.2 Recomendaciones de gestión de biotipos de malezas resistentes al glifosato

**NOTA:** Es fundamental realizar las pruebas adecuadas para confirmar la resistencia de la maleza al glifosato. Póngase en contacto con su representante de Monsanto para determinar si se confirmó la resistencia de algún biotipo de maleza en particular en su región. Las recomendaciones de control para biotipos confirmados como resistentes al glifosato se dan a conocer con la publicación de etiquetas o fichas técnicas complementarias para este producto y puede solicitarlas al vendedor minorista o a su representante de Monsanto.

Debido a que no es posible determinar la existencia de nuevas malezas resistentes al glifosato hasta que se haya utilizado el producto y se cuente con la confirmación científica correspondiente, Monsanto Company no será responsable de ninguna pérdida que pudiera tener lugar en el caso de que este producto no lograra controlar de forma eficaz los biotipos de malezas resistentes al glifosato.

Siga las prácticas correctas de gestión de malezas para reducir la propagación de biotipos resistentes al glifosato confirmados:

- Si en su zona existe naturalmente un biotipo resistente, para lograr su control puede mezclar este producto en un tanque o aplicarlo secuencialmente con un herbicida debidamente etiquetado con efecto diferente.
- También se pueden utilizar prácticas de control culturales y mecánicas según corresponda.
- Haga un reconocimiento de los lugares tratados después de las aplicaciones de herbicida y controle las omisiones de biotipos resistentes antes de que echen semilla.
- Limpie minuciosamente los equipos antes de abandonar los lugares que se saben que contienen biotipos resistentes.

## 6.0 MEZCLA

Para mezclar, almacenar y aplicar la solución de este producto, se deben usar solamente envases de acero inoxidable, fibra de vidrio, plástico o envases de acero recubiertos internamente con plástico.

**NO MEZCLE, ALMACENE NI APLIQUE ESTE PRODUCTO NI SOLUCIONES PARA ROCIAR DE ESTE PRODUCTO EN ENVASES DE ACERO GALVANIZADO O ACERO NO REVESTIDO (SALVO ACERO INOXIDABLE) NI EN TANQUES DE ROCÍO.**

Proceda con precaución para evitar el reflujo del líquido a la fuente de transporte. Utilice dispositivos antirreflujo cuando así lo requieran las reglamentaciones estatales o locales.

Limpie las piezas del rociador inmediatamente después de su utilización lavándolas bien con agua.

**NOTA:** PUEDE OCURRIR UNA DISMINUCIÓN DE LOS RESULTADOS SI SE UTILIZA AGUA QUE CONTenga TIERRA, TAL COMO AGUA CON BARRO VISIBLE O AGUA DE CHARCAS O ACEQUIAS QUE NO ESTE CLARA.

## 6.1 Mezcla con agua

Este producto se mezcla fácilmente con agua. La solución para rociar se debe mezclar de la siguiente forma: Ponga la cantidad correcta de agua limpia en el tanque en el cual se va a preparar la mezcla. Agregue la cantidad recomendada de este producto cuando ya esté cerca de completarse el llenado con agua y mezcle con cuidado (bien). Es posible que durante la mezcla y rocío, la solución produzca espuma. Para evitar o minimizar la formación de espuma, evite el uso de agitadores mecánicos, cierre las tuberías de derivación y de retorno en el fondo del tanque, y si es necesario, use compuestos aprobados para evitar la formación de espuma o para eliminar la espuma ya formada.

## 6.2 Mezclas de tanque

Este producto no proporciona control de malezas residuales. Este producto puede mezclarse en un tanque con otros herbicidas para lograr el control de malezas residuales, un espectro de control de malezas más amplio o un efecto alternativo. Lea y siga siempre las indicaciones de las etiquetas de todos los productos utilizados en la mezcla. Use conforme a las precauciones más restrictivas. Para la mezcla en tanque, puede utilizarse cualquier cantidad de este producto que se encuentre dentro del rango indicado en la etiqueta.

Cuando esta etiqueta indique una mezcla de tanque con un ingrediente activo genérico como diurón, 2,4-D o dicamba, el usuario será responsable de asegurarse de que la etiqueta del producto de mezcla permita la aplicación específica.

El comprador y todos los usuarios serán responsables de cualquier pérdida o daño que pudiera ocurrir como consecuencia del uso o manipulación de mezclas de este producto con herbicidas u otros materiales que no estén expresamente recomendados en esta etiqueta. La mezcla de este producto con herbicidas u otros materiales no recomendados en esta etiqueta puede dar como resultado una reducción en su rendimiento.

## 6.3 Procedimiento para mezclas de tanque

Cuando haga mezclas de tanque, lea y siga cuidadosamente las instrucciones de la etiqueta, las precauciones y toda la información contenida en las etiquetas de todos los productos utilizados. Agregue el producto al tanque de mezcla según las instrucciones de la etiqueta. Agite continuamente y agregue la cantidad indicada en la etiqueta de este producto.

Agite continuamente hasta usar totalmente el contenido del tanque. Si se deja que la mezcla para rociar se asiente, agite bien para que la mezcla vuelva a estar en suspensión antes de continuar con el rociado.

A fin de minimizar la formación de espuma, mantenga las tuberías de retorno lo más cerca del fondo del tanque. El tamaño del corridor en la boquilla o de los corridores en las tuberías no debe ser menor al número 50.

Siempre determine previamente la compatibilidad de la mezcla de este producto, que viene en tanque rotulado, con agua como vehículo, mezclando cantidades pequeñas proporcionales con anticipación. Asegúrese de que la mezcla en tanque específica está registrada para su aplicación en el área deseada.

Reiférase a la sección "Mezclas de tanque" para ver las precauciones adicionales.

## 6.4 Mezcla de soluciones en porcentaje

Prepare la cantidad deseada de la solución para rociar, mezclando las proporciones de este producto con agua, según se muestra en la siguiente tabla:  
**Solución para rociar**

Volumen deseado	Cantidad de Ranger PRO herbicida					
	1/2%	1%	1-1/2%	2%	5%	10%
1 gal	2/3 oz	1-1/3 oz	2 oz	2-2/3 oz	6-1/2 oz	13 oz
25 gal	1 pt	1 qt	1-1/2 qt	2 qt	5 qt	10 qt
100 gal	2 qt	1 gal	1-1/2 gal	2 gal	5 gal	10 gal

2 cucharadas = 1 onza fluida

Cuando se usen rociadores tipo mochila, o para bombeo, se recomienda que la cantidad indicada en la etiqueta de este producto se mezcle con agua en un envase grande. Llene el rociador con la solución mezclada.

## 6.5 Surfactante

Se pueden emplear surfactantes no iónicos cuyo rótulo indique que pueden usarse con herbicidas. No reduzca las dosis de este producto cuando agregue surfactante. Cuando agregue surfactante adicional, use una concentración de surfactante de 0,5 por ciento (2 cuartos de galón por cada 100 galones de solución de rocío) cuando utilice surfactantes que contengan por lo menos 70 por ciento de ingrediente activo, o una concentración de surfactante de 1 por ciento (4 cuartos de galón por cada 100 galones de solución de rocío) en el caso de aquellos surfactantes que contengan menos de 70 por ciento de ingrediente activo. Lea y cumpla cuidadosamente con las precauciones y toda la información adicional que aparezca en el rótulo del surfactante.

## 6.6 Colorantes o tinturas

A este producto se le pueden agregar colorantes o tinturas para marcar, que sean aprobados para uso agrícola. Los colorantes o tinturas utilizados en las soluciones en aerosol de este producto pueden reducir su rendimiento, especialmente a bajas concentraciones del producto o a bajas diluciones. Para usar los colorantes y tinturas siga las instrucciones del fabricante.

## 6.7 Aditivos para controlar el acarreo del producto

Se pueden utilizar aditivos para el control de la deriva en todos los tipos de equipo, a excepción de aplicadores por rotación y barras de esponja. Cuando se use un aditivo para el control de la deriva, lea y cumpla cuidadosamente con las declaraciones preventivas y toda la información adicional que aparezca en la etiqueta del aditivo. El uso de aditivos para el control de la deriva puede afectar la cobertura del rocío, lo que puede dar como resultado una reducción en el rendimiento.

## 7.0 EQUIPOS Y TECNICAS PARA LA APLICACION

No use ningún sistema de irrigación para aplicar este producto.

**APLIQUE ESTAS SOLUCIONES PARA ROCIAR UTILIZANDO EQUIPOS DEBIDAMENTE MANTENIDOS Y CALIBRADOS QUE SEAN CAPACES DE ROCIAR EL VOLUMEN DESEADO.**

### MANEJO DE LA DERIVA POR ROCIADO

EVITE LA DERIVA. DEBE USARSE EXTREMO CUIDADO EN LA APLICACION DE ESTE PRODUCTO PARA EVITAR DAÑOS A LA VEGETACION DESEADA.

No permita que la solución del herbicida empañe, gotee, se derive o salpique sobre la vegetación deseada, ya que mínúsculas cantidades de este producto pueden causar daños graves o destrucción del cultivo, plantas u otras áreas que no se pretendía tratar.

Es la responsabilidad del aplicador evitar la deriva por rocío en el lugar de aplicación. La interacción de varios factores relacionados con el clima y el equipo determina la posibilidad de deriva por rocío. El aplicador y/o el cultivador son responsables de considerar todos estos factores al tomar decisiones.

### 7.1 Equipo aéreo

NO APLIQUE ESTE PRODUCTO CON EQUIPOS AEREOS EXCEPTO BAJO LAS CONDICIONES QUE SE ESPECIFICAN EN ESTA ETIQUETA.

PARA LA APLICACION AEREA EN CALIFORNIA, CONSULTE LA ETIQUETA EN EL SUPLEMENTO FEDERAL PARA APLICACIONES AEREAS EN DICHO ESTADO, PARA CONOCER LAS INSTRUCCIONES, RESTRICCIONES Y REQUISITOS ESPECIFICOS.

PARA EVITAR DAÑAR LA VEGETACION DESEADA ADJUNTA, SE DEBEN MANTENER ZONAS TAMPON ADECUADAS.

Evite la aplicación directa sobre cualquier cuerpo de agua.

Use las proporciones recomendadas de este producto con 3 a 25 galones de agua por acre.

Los rociadores gruesos tienen menos probabilidades de producir deriva; por lo tanto, no utilice boquillas o configuraciones de boquilla que apliquen el producto en forma de gotitas finas. No incline las boquillas hacia adelante en el flujo de aire y no aumente el volumen de rocío aumentando la presión de la boquilla. Pueden usarse aditivos para el control de la deriva. Cuando se use un aditivo para el control de la deriva, lea y cumpla cuidadosamente con las declaraciones preventivas y toda la información adicional que aparezca en la etiqueta del aditivo.

Asegúrese de que la aplicación sea uniforme—A fin de evitar que queden áreas sin tratar, que la aplicación no sea uniforme o que las aplicaciones se traslapen, se deben usar marcadores adecuados.

#### Mantenimiento de aviones

EL CONTACTO PROLONGADO DE ESTE PRODUCTO CON PARTES DE ACERO QUE NO ESTA RECUBIERTO CON ALGUN TIPO DE PROTECCION, PUEDE DAR COMO RESULTADO LA CORROSION Y POSIBLEMENTE QUE LAS PARTES FALLEN. Es posible prevenir la corrosión recubriendo las partes con pintura orgánica, que cumpla con las especificaciones aeroespaciales MIL-C-38413. Al final de cada día de trabajo, para evitar la corrosión de las partes expuestas, lave muy bien el avión a fin de remover los residuos de este producto que se acumulan durante el rocío o por derramamientos. Las partes del tren de aterrizaje son extremadamente susceptibles.

#### MANEJO DE LA DERIVA POR ROCIADO AÉREO

Deben seguirse los siguientes requerimientos de manejo de la deriva para evitar el movimiento de ésta fuera de objetivo en aplicaciones aéreas a campos de cultivo agrícola.

1. La distancia del pulverizador más externo en la barra distribuidora no debe exceder 3/4 del largo de la envergadura o rotor.
2. Los pulverizadores deben siempre apuntar hacia atrás, paralelos a la corriente de aire, nunca hacia abajo más de 45 grados. En los estados con reglamentos más estrictos, éstos deben observarse.

#### Importancia del tamaño de la gotita

La forma más eficaz de reducir la posibilidad de deriva es la aplicación de gotitas grandes. La mejor estrategia de manejo de la deriva es la aplicación de las gotitas más grandes que provean suficiente cobertura y control. La aplicación de gotitas más grandes reduce la posibilidad de deriva, pero no la evitará si las aplicaciones se realizan inadecuadamente o bajo condiciones ambientales desfavorables (vea las secciones de **Viento, Temperatura y humedad, e Inversiones de temperatura** en esta etiqueta).

#### Control del tamaño de la gotita

- **Volumen:** Use pulverizadores de velocidad de flujo alta para aplicar el mayor volumen de rocío práctico. Los pulverizadores con mayores velocidades de flujo producen gotitas más grandes.
- **Presión:** Use las presiones de rocío más bajas recomendadas para la boquilla. La presión más alta reduce el tamaño de la gotita y no mejora la penetración del todo. Cuando sean necesarias velocidades de flujo mayores, use la boquilla con velocidad de flujo mayor en lugar de aumentar la presión.
- **Número de pulverizadores:** Use el número mínimo de pulverizadores que provean cobertura uniforme.
- **Orientación del pulverizador:** Oriente los pulverizadores de modo que el rocío sea liberado hacia atrás, paralelo a la corriente de aire, produzca gotitas más grandes que en otras orientaciones. Una deflexión significativa de la horizontal reducirá el tamaño de la gotita y aumentará la posibilidad de deriva.
- **Tipo de pulverizador:** Use un tipo de pulverizador que esté diseñado para la aplicación prevista. Con la mayoría de los tipos de pulverizadores, los ángulos de rociado más angostos producen gotitas más grandes. Considere el uso de pulverizadores de deriva baja. Los pulverizadores de flujo sólido orientados hacia atrás producen gotitas más grandes que otros tipos de pulverizador.
- **Largo de la barra distribuidora:** Para algunos tipos de uso, la reducción del largo efectivo de la barra distribuidora a menos de 3/4 de la envergadura o el largo del rotor puede reducir más la deriva sin reducir el ancho de la hilera (pasada).
- **Altura de la aplicación:** Las aplicaciones no deben realizarse a una altura mayor que 10 pies por encima de la copa de las plantas más grandes, a menos que se requiera mayor altura por razones de seguridad del aeroplano. La realización de las aplicaciones a la menor altura que sea segura reduce la exposición de las gotitas a la evaporación y el viento.

#### Ajuste de la hilera (pasada)

Cuando las aplicaciones se llaven a cabo con viento lateral, la banda de aspersión se desplazará a favor del viento. Por ello, en los extremos con o contra el viento del campo, el aplicador debe compensar este desplazamiento ajustando la trayectoria del aeroplano contraria al viento. La distancia de ajuste de la hilera debe aumentar, cuando aumenta la posibilidad de deriva (mayor viento, gotitas más pequeñas, etc.).

#### Viento

La posibilidad de deriva es menor con velocidades del viento entre 2 y 10 mph. Sin embargo, muchos factores, incluyendo el tamaño de las gotitas y el tipo de equipo determinan la posibilidad de deriva a una velocidad determinada. Debe evitarse la aplicación menos de 2 mph debido a la dirección variable del viento y la posibilidad alta de inversión. **NOTA:** El terreno local puede influir en los patrones de viento. Cada aplicador debe conocer los patrones (vientos) locales y cómo éstos afectan la deriva.

#### Temperatura y humedad

Cuando se realizan aplicaciones con humedad relativa baja, fije el equipo para que produzca gotitas más grandes para compensar por la evaporación. La evaporación de gotitas es más grave cuando las condiciones son calurosas y secas.

#### Inversiones de temperatura

No deben realizarse aplicaciones durante una inversión de temperatura debido a que la posibilidad de deriva es alta. Las inversiones de temperatura restringen la mezcla de aire vertical, lo que causa que pequeñas gotitas suspendidas permanezcan en una nube concentrada. Esta nube puede moverse en direcciones no predecibles debido a los vientos variables leves que son comunes durante las inversiones. Las inversiones de temperatura están caracterizadas por temperaturas en aumento con altitud y son comunes en las noches con cobertura de nubes limitada y poco o ningún viento. Comienzan a formarse cuando se mete el sol y a menudo continúan en la mañana. Su presencia puede indicarse por neblina en el suelo; sin embargo, si la neblina no está presente, las inversiones también pueden identificarse por el movimiento del humo desde una fuente del suelo o por el generador de humo de un aeroplano. El humo en capas que se mueve lateralmente en una nube concentrada (bajo condiciones de poco viento) indica una inversión, mientras que el humo que se mueve hacia arriba y se disipa rápidamente indica buena mezcla de aire vertical.

#### Áreas sensibles

Este producto sólo se debe aplicar cuando la posibilidad de deriva hacia zonas adyacentes susceptibles (como por ejemplo, áreas residenciales, masas de agua, hábitat conocido de especies amenazadas o en peligro de extinción, cultivos que no sean el objetivo) sea mínima, (como por ejemplo, cuando el viento sople lejos de las áreas susceptibles).

## 7.2 Equipo de aplicación terrestre

Use las proporciones indicadas en la etiqueta de este producto con 3 a 40 galones de agua por acre para aplicaciones al voleo, a menos que se indique de otra manera en esta etiqueta en otras etiquetas o fichas técnicas complementarias publicadas por Monsanto. A medida que la densidad de las malezas aumenta, el volumen de rocío se

debe aumentar también para conseguir una cobertura completa, pero siempre dentro de los límites indicados en la etiqueta. A fin de evitar un rocío muy fino, seleccione la boquilla cuidadosamente. Para obtener mejores resultados con equipo a nivel del terreno, use boquillas tipo abanico plano. Asegúrese de que las gotas del rocío se distribuyan uniformemente.

### 7.3 Mochila o equipo de alto volumenn

Aplique el producto al follaje de la vegetación que se desea controlar. En aplicaciones de rocío para mojar, la cobertura del follaje debe ser completa y uniforme. No rocíe hasta el punto de escurrimiento. Use rociadores gruesos solamente.

Refiérase a las instrucciones "Malezas anuales" de la sección "MALEZAS CONTROLADAS" para ver las proporciones y restricciones específicas.

### 7.4 Equipo especializado

Este producto puede ser diluido con agua y aplicado usando rociadores de recirculación, aplicadores con pantalla, rociadores con capucha, aplicadores por frotación o barras de esponja, sobre las malezas indicadas que crecen en cualquier lugar indicado en esta etiqueta.

EVITE EL CONTACTO DEL HERBICIDA CON LA VEGETACION DESEABLE. El contacto con este producto con la vegetación deseable, podría resultar en daños o en una destrucción de la planta.

#### Recirculación del rocío

Los rociadores de recirculación dirigen la solución hacia los tipos de malezas que crecen sobre vegetación deseable, mientras que la solución que no ha sido interceptada por las malezas se recoge y se retorna al tanque para volverla a usar.

Los aplicadores utilizados por encima de la vegetación deseable deben ser calibrados de tal manera que el rocío o el punto de contacto más bajo esté por lo menos a 2 pulgadas arriba de la vegetación deseable. Gotas, niebla, espuma o salpicaduras del herbicida en contacto con la vegetación deseable pueden causar con mucha probabilidad descoloración, atrofia o destrucción.

Se obtienen mejores resultados cuando una mayor cantidad de la maleza entra en contacto con el herbicida. Las malezas que no entran en contacto con la solución herbicida no serán afectadas. Esto puede ocurrir en lugares donde las malezas están muy concentradas, cuando la infestación es grave o donde la altura de las malezas es variada, lo que no permite que todas sean tocadas por el herbicida. En estos casos puede hacerse necesario repetir el tratamiento.

#### Aplicadores con pantalla y con capucha

Los rociadores con pantalla o con capucha aplican la solución del herbicida directamente sobre las malezas, al mismo tiempo que protegen la vegetación deseable, para que no sea tocada por el herbicida. Use boquillas que aseguren un recubrimiento uniforme en toda el área tratada. En los rociadores con pantalla, mantenga las pantallas debidamente colocadas a fin de proteger la vegetación que no se desea destruir. SE DEBE TENER MUCHO CUIDADO PARA EVITAR EL CONTACTO DEL HERBICIDA CON LA VEGETACION DESEABLE.

#### Aplicadores por frotación y barras de esponja

Los aplicadores por frotación o de esponja aplican la solución del herbicida frotando las malezas con un material absorbente que contenga la solución del herbicida. El equipo debe ser diseñado, mantenido y operado de manera que la solución del herbicida no haga contacto con la vegetación deseable. Opere este equipo a velocidades inferiores a las 5 millas por hora. En áreas donde la infestación es grave, se puede mejorar la eficacia reduciendo la velocidad, así se asegura que el frotador esté siempre adecuadamente saturado con la solución del herbicida. Se obtienen mejores resultados si se aplica 2 veces en direcciones opuestas.

Evite fugas o goteos sobre la vegetación deseable. Ajuste la altura de los aplicadores a fin de asegurar un contacto adecuado con las malezas. Mantenga limpias las superficies de frotación. Tenga presente que en terrenos inclinados, el herbicida puede migrar causando goteos en la parte baja y el secado de las mechas en la parte superior del aplicador por frotación.

No use aplicadores por frotación cuando las malezas estén mojadas.

Mezcle solamente la cantidad de solución que se usará durante el período de un día, debido a que el uso de sobras de días anteriores puede dar como resultado un efecto menos eficiente. Inmediatamente después de usar este producto, lave bien el aplicador usando bastante agua.

**Para aplicadores de cordón o de mecha de esponja**—Puede emplearse soluciones que oscilan entre 33 al 75 por ciento de este producto en agua.

**Para aplicadores de panel y sistemas de alimentación a presión**—Se pueden usar soluciones que oscilan entre 33 al 100 por ciento de este producto con agua.

Cuando se aplica de acuerdo a las recomendaciones, este producto CONTROLA las siguientes malezas:

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

Cuando se aplica de acuerdo a las recomendaciones, este producto SUPRIME las siguientes malezas:

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

### 7.5 Sistemas por inyección

Este producto puede usarse con sistemas de rocío por inyección, ya sean aéreos o a nivel del terreno. Puede usarse como concentrado líquido o diluido antes de la inyección en el chorro de rocío. No mezcle este producto con concentraciones de otros productos sin diluir cuando use los sistemas por inyección salvo que se recomiende específicamente.

### 7.6 Equipo de aplicación por goteo controlado

La proporción de este producto aplicado por acre usando el equipo de aplicación por goteo controlado no debe ser menor que la cantidad indicada en esta etiqueta cuando se usa equipo convencional para aplicaciones al voleo. Cuando se usa el equipo aplicador por goteo controlado montado en un vehículo, use de 2 a 15 galones de agua por acre.

Los equipos de goteo controlado producen un rociado que es difícil de ver. Se debe tener especial cuidado para evitar que el rociado o el acarreo entre en contacto con el follaje o cualquier otra parte verde de la vegetación que no se quiere tratar, ya que en caso contrario, es probable que ésta sea dañada o destruida.

## 8.0 RECOMENDACIONES SEGUN AREAS Y USO

A continuación aparecen las instrucciones detalladas para cada área.

A menos que se especifique lo contrario en esta etiqueta o en otras etiquetas o fichas técnicas complementarias publicadas por Monsanto, pueden hacerse aplicaciones para controlar las malezas indicadas en las tablas de malezas anuales, perennes y matorrales leñosos. Vea también la sección "EQUIPO SELECTIVO".

### 8.1 Troncos cortados

El tratamiento de troncos cortados puede hacerse en cualquier área listada en esta etiqueta. Este producto controla muchas especies de matorrales leñosos y árboles. Aplique este producto usando equipo adecuado para garantizar la cobertura completa del cambium. Corte los árboles o sus brotes cerca de la superficie del suelo. Aplique una solución de este producto del 50 al 100 por ciento a la superficie recién cortada, inmediatamente después del corte. Demorar la aplicación puede reducir la eficacia del producto. Para obtener mejores resultados, la aplicación deberá hacerse durante los períodos de crecimiento activo y expansión completa de las hojas.

NO HAGA LAS APLICACIONES SOBRE TRONCOS CORTADOS CUANDO LAS RAICES DE LOS MATORRALES LEÑOSOS O ARBOLES DESEABLES PUEDEN ESTAR INJERTADAS A LAS RAICES DE LOS TRONCOS CORTADOS. Algunos brotes, tallos o árboles pueden compartir el mismo sistema radicular. Árboles que están contiguos, que tienen la misma edad, altura y separación pueden indicar raíces compartidas. Cuando se trata a uno o más árboles que tienen raíces en común, tanto si están injertados como si comparten el sistema radicular, es probable que se produzca un daño en los brotes/árboles no tratados.

### 8.2 Preparación del lugar para forestación

Este producto puede ser utilizado para controlar o controlar parcialmente malezas leñosas, árboles y malezas herbáceas en forestaciones, y preparar o crear claros para la vida silvestre en estos lugares y para mantener los caminos de las explotaciones forestales.

Este producto puede ser utilizado para preparar el lugar antes de plantar cualquier especie de árbol, como árboles de Navidad, eucaliptos, cultivos de árboles híbridos y viveros dedicados a la silvicultura

Utilice proporciones más concentradas de este producto dentro de los márgenes recomendados para controlar o controlar parcialmente malezas leñosas, árboles y malezas herbáceas perennes difíciles de controlar. Para obtener resultados óptimos, aplique este producto a árboles y arbustos leñosos en crecimiento activo después de la expansión completa de las hojas y antes de que éstas adquieran color otoñal y se caigan. Incremente la concentración dentro del margen recomendado para controlar malezas herbáceas perennes en cualquier momento después de la emergencia y antes de que aparezcan inflorescencias, flores o bayas.

Utilice proporciones menos concentradas de este producto dentro del margen recomendado para controlar malezas herbáceas anuales y malezas herbáceas perennes en crecimiento activo después de que aparezcan inflorescencias, flores o bayas. Aplique

al follaje de malezas herbáceas anuales en crecimiento activo en cualquier momento después de la emergencia.

Este producto carece de actividad herbicida o residual en la tierra. Si es necesario repetir las aplicaciones, no exceda los 10,6 cuartos de galón de este producto por acre por año.

**MEZCLAS PARA TANQUE:** Se pueden emplear mezclas de tanque con este producto para aumentar el espectro de la vegetación controlada. Antes de preparar una mezcla de tanque, lea y siga al pie de la letra las instrucciones, las advertencias de precaución y toda la información en las etiquetas de todos los productos utilizados. Use la mezcla conforme a las advertencias de precaución más estrictas indicadas para cada producto en la mezcla.

**NOTA:** Para la preparación de sitios de forestación, asegúrese de que el producto para mezclar en tanque esté aprobado antes de plantar las especies deseadas. Respete las restricciones del intervalo de plantación.

Todas las proporciones recomendadas de este producto se pueden utilizar en una mezcla de tanque con los siguientes productos para la preparación de sitios de forestación.

Arsenal Applicators Concentrate	Garlon 3A
Chopper	Garlon 4
Chopper Gen2	Oust XP
Escort	

Para controlar malezas herbáceas, utilice las proporciones de menor concentración recomendadas para la mezcla de tanque. Para controlar grupos densos o difíciles de arbustos leñosos y árboles, utilice las proporciones de mayor concentración recomendadas en mezcla de tanque.

No aplique este producto para aplicaciones al voleo en la parte superior de coníferas para forestación o árboles de madera dura a menos que se indique lo contrario en esta etiqueta o en otras etiquetas o fichas técnicas complementarias publicadas por Monsanto.

## 8.3 Áreas generales y áreas industriales

Este producto puede ser utilizado en áreas no cultivables como aeropuertos, conjuntos de apartamentos, sitios comerciales, orillas de acequias, caminos de entrada de automóviles, acequias secas, canales secos, filas de vallas, áreas de forestación, campos de golf, invernaderos, zonas industriales, áreas de paisaje, depósitos de madera, zonas de manufactura, solares municipales, zonas naturales, complejos de oficinas, cultivos ornamentales, parques, áreas de estacionamiento, zonas con tanques de petróleo e instalaciones de bombeo, vías de ferrocarril, áreas recreativas, áreas residenciales, derechos de paso, bordes de carreteras, escuelas, umbráculos, complejos deportivos, áreas de almacenamiento, subestaciones, zonas de césped, zonas de servicios públicos, zonas de almacenes, otras áreas públicas y zonas en la que se realiza gestión de vida silvestre.

También se puede utilizar este producto en áreas de cultivos no alimenticios, como granjas de árboles de Navidad, criaderos de plantas y granjas de césped o para semillas de césped.

A menos que se especifique lo contrario, pueden realizarse aplicaciones para controlar las malezas indicadas en la sección "MALEZAS CONTROLADAS" de esta etiqueta.

### Control general de malezas, recortado de bordes y suelo limpio de malezas

Este producto puede utilizarse en áreas no cultivables y de cultivos no alimenticios. Puede aplicarse con cualquiera de los equipos descritos en este librito. Puede usarse para el recortado de bordes alrededor de objetos en áreas no cultivables, para tratamiento localizado de vegetación no deseable y para eliminar las malezas no deseables que crecen en cuadros de arbustos establecidos y plantaciones ornamentales. Este producto puede usarse antes de plantar un área con plantas ornamentales, flores, césped (tepales o semillas), o antes de colocar asfalto o de comenzar un proyecto de construcción.

Pueden hacerse aplicaciones repetidas de este producto, a medida que emergen las malezas, para mantener el suelo limpio de malezas.

**MEZCLAS DE TANQUE:** Este producto se puede mezclar en un tanque con los siguientes productos, siempre que éstos estén aprobados para el área de uso deseada. Consulte las etiquetas de estos productos para informarse sobre las áreas de uso y las dosis de aplicación aprobadas.

Arsenal	Karmex	Ronstar 50 WSP
Barricade 65WG	Krovar I DF	Sahara
Clarity	Oust XP	simazine
diuron	Pendulum 3.3 EC	Surflan
Endurance	Pendulum WDG	Telar
Escort	Plateau	Vanquish
Garlon 3A	Princep DF	2,4-D
Garlon 4	Princep Liquid	

Este producto más las mezclas en tanque de dicamba no se pueden aplicar por rocío aéreo en California.

Cuando se aplica como mezcla de tanque para mantener el suelo limpio de malezas, este producto proporciona control sobre las malezas anuales emergidas y control o control parcial sobre las malezas perennes emergidas, matorrales leñosos y árboles.

Para controlar o controlar parcialmente las malezas perennes siguientes, aplique 1 a 2 cuartos de galón de este producto más 2 a 8 onzas de Oust XP por acre.

Bahiagrass	Fescue, tall
Bermudagrass	Johnsongrass
Broomsedge	Poorjoe
Dallisgrass	Quackgrass
Dock, curly	Vaseygrass
Dogfennel	Vervain, blue

### Segador químico - Plantas perennes

Este producto suprime las hierbas perennes mencionadas en esta sección para servir como sustituto del sague. Use 8 onzas fluidas de este producto por acre cuando trate extensiones de tall fescue (*Festuca arundinacea*), fina fescue (*Festuca rubra*), orchardgrass (*Dactylis glomerata*), quackgrass (*Elytrigia repens*) o reed canarygrass (*Phalaris arundinacea*). Use 6 onzas fluidas de este producto por acre cuando trate Kentucky bluegrass. Aplique el tratamiento en 10 a 40 galones de solución para rociar por acre.

Uselo solamente en áreas en las que puede tolerarse un daño o decoloración temporal de las hierbas perennes.

### Segador químico - Plantas anuales

Para suprimir el crecimiento de algunas hierbas anuales, tales como el ballico, la cebada silvestre y la avena loca anuales que crecen en céspedes agrestes al borde de las carreteras u otras áreas industriales, aplique de 4 a 5 onzas fluidas de este producto en 10 a 40 galones de solución de rocío por acre. Las aplicaciones se deben realizar cuando las hierbas anuales crezcan activamente y antes de que las semillas se encuentren en la etapa de "boot" del desarrollo. Los tratamientos pueden perjudicar a las hierbas deseadas.

### Especie *Bromus* y Medusahead en pasturas y praderas

**Especie *Bromus*.** Este producto puede ser utilizado para tratar downy brome (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus mollis*) y cheatgrass (*Bromus secalinus*) que se encuentran en lugares industriales, pasturas y praderas. Aplique por difusión, 8 a 16 onzas fluidas de este producto por acre.

Para obtener mejores resultados, el tratamiento debe coincidir con la emergencia temprana del epicótilo de las plantas más maduras. Demorar la aplicación hasta esta etapa del desarrollo maximizará la emergencia de otros brotes de malezas de pastos. Las aplicaciones se deben hacer todos los años sobre el mismo lugar hasta que se agoten los bancos de semilla y se puedan restablecer en el lugar los pastos perennes deseados.

**Medusahead.** Para tratar medusahead, aplique 16 onzas fluidas de este producto por acre, tan pronto como las plantas se encuentren en desarrollo activo y antes de la etapa de 4 hojas. Las aplicaciones se pueden hacer en el otoño o en la primavera.

Las aplicaciones sobre *Bromus* y sobre medusahead se pueden hacer utilizando equipo de pulverización terrestre o aéreo. Las aplicaciones aéreas para estos usos se pueden hacer utilizando equipos para aeronaves de ala fija o para helicóptero. Para aplicaciones aéreas, diluya en 2 a 10 galones de agua por acre. Para aplicaciones utilizando equipo terrestre, diluya en 10 a 20 galones de agua por acre. Cuando se aplica de acuerdo a las instrucciones de esta etiqueta, no hay restricciones al pastoreo.

### Césped latente (durmiente)

Este producto puede usarse para controlar o suprimir muchas malezas anuales de invierno y tall fescue para el alivio eficaz de céspedes de bermudagrass y bahiagrass latentes. Trate solamente cuando el césped esté latente y antes de reverdecer en la primavera.

Aplique de 8 a 64 onzas fluidas de este producto por acre. Aplique las dosis recomendadas en 10 a 40 galones de agua por acre. Utilícelo sólo en áreas donde bermudagrass o bahiagrass sean coberturas de terreno convenientes y donde pueda tolerarse algún daño temporal o descoloración.

Los tratamientos en exceso de 16 onzas fluidas por acre pueden dañar o retrasar el reverdecer en las áreas donde se hace mucho mantenimiento, como campos de golf y jardines. NO aplique mezclas de tanque de este producto más Oust XP en áreas de césped donde se hace mucho mantenimiento. Para otros usos, vea la sección "Vías de ferrocarril" de esta etiqueta, que proporciona dosis para el tratamiento de bermudagrass latente y la sección "Bordes de las carreteras" de esta etiqueta, que proporciona dosis para tratamientos de bermudagrass y bahiagrass latentes.

### Bermudagrass de crecimiento activo

Este producto puede emplearse para controlar total o parcialmente muchas malezas anuales y perennes a fin de obtener una distribución eficaz de bermudagrass de crecimiento activo. NO aplique más de 16 onzas fluidas de este producto por acre en áreas de céspedes de alto mantenimiento. NO aplique mezclas de tanque de este producto más Oust en áreas de céspedes de alto mantenimiento. Para otros usos, vea la sección "BORDES DE LAS CARRETERAS" de esta etiqueta, que proporciona dosis para tratamientos de bermudagrass de crecimiento activo. Utilícelo sólo en áreas donde puede tolerarse algún daño temporal o descoloración.

### Renovación del césped, producción de semillas o tepales

Este producto controla la mayoría de la vegetación existente antes de la renovación del césped o de establecer céspedes cultivados para semilla o tepales. Para un control máximo de la vegetación existente, demore la siembra o cobertura de césped a fin de determinar si las partes de la planta que quedaron bajo tierra vuelven a crecer. Cuando sea necesario repetir el tratamiento, permita que las plantas se desarrollen lo suficiente antes de volver a tratar. Para controlar más eficientemente las hierbas de estación caliente, como bermudagrass, se debe aplicar este producto en el verano o en el otoño.

En lugares donde la vegetación existente esté creciendo y el césped esté bajo un programa de siega, aplique este producto después de omitir por lo menos un corte del césped para permitir un crecimiento suficiente a fin de que el rociado sea interceptado por las plantas.

No remueva la tierra ni las partes de la planta que estén bajo tierra antes del tratamiento. La labranza o las técnicas de renovación como corte vertical, perforación o rebanado deben esperar 7 días después de la aplicación a fin de permitir la absorción adecuada en las partes de la planta que estén bajo tierra.

Pueden plantarse los céspedes convenientes siguiendo los procedimientos anteriormente mencionados.

Puede utilizarse equipo de mano para el tratamiento en sitio de vegetación no deseada que crezca en el césped existente. Puede utilizarse equipo de difusión o de mano para controlar los restos de tepes u otra vegetación no deseada después de cosechar el tepe.

Si las dosis de aplicación ascienden a 3 qt (cuartos de galón) por acre o menos, no se requiere un período de espera entre el tratamiento y la alimentación o pastoreo del ganado. Si la dosis es mayor de 3 qt por acre, retire el ganado doméstico antes de la aplicación y espere 8 semanas después de la aplicación antes de pastorear o cosechar.

## 8.4 Manejo de hábitats

### Restauración y mantenimiento de hábitats

Este producto puede ser usado para controlar la vegetación exótica y otras plantas indeseables en áreas de manejo de hábitats y en áreas naturales, incluyendo pastizales y refugios para la fauna silvestre. Pueden hacerse aplicaciones para permitir la recuperación de las especies de plantas nativas, antes de plantar dichas especies nativas deseables, y para otros requisitos similares de control de la vegetación de amplia efectividad. A fin de eliminar selectivamente ciertas plantas indeseables, se pueden hacer aplicaciones en puntos específicos para controlar y mejorar el hábitat.

### Sitios donde se siembran alimentos para la fauna silvestre

Este producto puede ser usado para preparar el terreno donde se desea sembrar alimentos para la fauna silvestre. Cualquier especie de alimento para la fauna silvestre puede ser sembrada después de aplicar este producto, o también se puede permitir que las especies nativas vuelvan a poblar el área. Si hace falta labrar para preparar el terreno antes de sembrar las semillas, espere 7 días después de aplicar este producto antes de arar a fin de permitir la absorción adecuada en las partes de la planta que estén bajo tierra.

## 8.5 Inyección y chorro (matorrales leñosos y árboles)

Este producto puede aplicarse por inyección o chorro para el control total o parcial de matorrales leñosos y árboles. Aplique este producto usando equipo adecuado, que debe ser capaz de penetrar en el tejido viviente. Aplique el equivalente a 1/25 onza fluida (1 mL) de este producto por cada 2 ó 3 pulgadas de diámetro del tronco a la altura del pecho (DBH en inglés). La mejor forma de hacerlo es aplicando una solución del 50 al 100 por ciento, este producto, con un chorro continuo alrededor del árbol o en cortes espaciados uniformemente alrededor del árbol y por debajo del nivel de las ramas. A medida que el diámetro del árbol aumenta, se obtienen mejores resultados con el chorro continuo alrededor del árbol o en cortes espaciados muy cerca entre sí alrededor del árbol. Evite las aplicaciones que permiten el escurrimiento de material cuando se chorrea alrededor del árbol o sobre los cortes en árboles que tienen la facilidad de exudar savia de los cortes. En especies de este tipo, haga los cortes de manera oblicua a fin de producir el efecto de copa y use el producto sin diluir. Para obtener mejores resultados, la aplicación debe tener lugar durante períodos de crecimiento activo y expansión completa de las hojas. En especies de este tipo, haga los cortes de manera oblicua a fin de producir el efecto de copa y use el producto sin diluir. Para obtener mejores resultados, la aplicación debe tener lugar durante períodos de crecimiento activo y expansión completa de las hojas.

## 8.6 Plantas ornamentales, viveros y árboles de Navidad

### Post-dirigido y recortado de bordes

Este producto puede ser utilizado antes como un rocío post-dirigido alrededor de especies ornamentales leñosas establecidas, como arborvitae, azalea, boxwood, crabapple, eucalyptus, euonymus, fir, douglas fir, fojoba, hollies, lilac, magnolia, maple, oak, poplar, privet, pine, spruce y yew, que crecen en viveros, en granjas de árboles de Navidad o en otros sitios de producción de árboles no alimenticios. Este producto también puede ser utilizado para recortado de bordes alrededor de árboles, edificios, aceras y carreteras, plantas en macetas y otros objetos de viveros.

Las plantas deseables pueden ser protegidas de la solución usando pantallas o cubriéndolas con cartón o con algún otro material impermeable. ESTE PRODUCTO NO SE RECOMIENDA PARA ROCIARSE DESDE ARRIBA SOBRE PLANTAS ORNAMENTALES Y ÁRBOLES DE NAVIDAD. Se debe tener mucho cuidado para que el rocío, acarreo o vapor de este producto no hagan contacto con el follaje o la corteza de las especies ornamentales establecidas.

### Preparación del terreno

Este producto puede ser usado antes de plantar cualquier tipo de planta ornamental, de vivero o árboles de Navidad.

### Aplicadores por frotación

Este producto se puede usar mediante aplicadores de mecha de esponja u otro tipo de aplicadores por frotación adecuados, para controlar total o parcialmente la vegetación indeseable alrededor de eucaliptos o álamos. Consulte la sección "Equipo especializado" de este rótulo para obtener mayor información sobre el uso adecuado de los aplicadores por frotación.

### Invernaderos/cobertizos

Este producto puede ser usado para controlar las malezas que estén creciendo en o alrededor de los invernaderos y cobertizos. No debe haber vegetación que no se quiera destruir y los equipos de ventilación deben estar apagados.

## 8.7 Parques, áreas recreativas y residenciales

Este producto puede usarse en parques, áreas recreativas y residenciales. Puede aplicarse con cualquiera de los equipos descritos en este librito. Puede usarse para el recortado de bordes alrededor de árboles, vallas, caminos, alrededor de edificios, aceras y otros objetos en estas áreas. Puede usarse para tratamiento localizado de vegetación no deseable y para eliminar las malezas no deseables que crecen en cuadros de arbustos establecidos y plantaciones ornamentales. Este producto puede usarse antes de plantar un área con plantas ornamentales, flores, césped (tepes o semillas), o antes de colocar asfalto o de comenzar un proyecto de construcción.

Todas las instrucciones de la sección "Áreas no cultivadas y áreas industriales" son válidas para los parques y áreas recreativas.

## 8.8 Vías de ferrocarril

Todas las instrucciones de la sección "Áreas no cultivadas y áreas industriales" son válidas para las vías de ferrocarril.

### Suelo vacío, balastos y bordes, cruces y tratamiento localizado

Este producto puede ser usado para mantener el suelo limpio de malezas en balastos y bordes de las vías de ferrocarril. Pueden hacerse aplicaciones repetidas de este producto, a medida que emergen las malezas, para mantener el suelo limpio de malezas. Este producto puede usarse para controlar las malezas altas y mejorar la línea visual en los cruces de ferrocarril y reducir la necesidad de segar a lo largo de las servidumbres de vía. Para aplicaciones en los cruces, pueden usarse hasta 80 galones de solución para rociar por acre.

Este producto puede mezclarse en tanque con los siguientes productos para tratamiento de balastos, bordes, tratamientos localizados, suelo limpio de malezas y cruces:

Arsenal	Krovar I DF
Clarity	Oust XP
diuron	Sahara
Escort	Spike
Garlon 3A	Telar
Garlon 4	Vanquish
Hyvar X	2,4-D

### Control de matorrales

Este producto puede ser usado para controlar matorrales leñosos y árboles en las servidumbres de vía. Aplique de 4 a 10 cuartos de galón de este producto por acre para aplicaciones diseminadas, usando boquillas tipo aguilón o sin aguilón. Pueden usarse hasta 80 galones de solución para rociar por acre. Aplique una solución de 3/4 a 2 por ciento de este producto cuando haga aplicaciones de rociado para mojar a gran escala. Aplique una solución de 5 a 10 por ciento de este producto cuando haga aplicaciones de rociado dirigido a pequeña escala para tratamientos localizados. Este producto puede ser mezclado con los siguientes productos para un mejor control de los matorrales leñosos y árboles:

Arsenal	Garlon 4
Escort	Tordon K
Garlon 3A	

### Mantenimiento del Bermudagrass

Este producto puede ser usado para controlar o controlar parcialmente muchas malezas anuales y perennes para el mantenimiento eficaz de bermudagrass que esté creciendo activamente. Aplique de 1 a 3 pintas de este producto en un máximo de 80 galones de solución para rociar por acre. Para tratar malezas anuales que tengan menos de 6 pulgadas de altura (o el largo de los tallos), use las proporciones más bajas. Use la proporción más alta a medida que las malezas aumenten de tamaño o cuando estén cerca de la floración o de la formación de semillas. Estas proporciones también controlan parcialmente las siguientes especies perennes:

Bahiagrass	Johnsongrass
Bluestem, silver	Trumpetcreper
Fescue, tall	Vaseygrass

Este producto puede ser mezclado con Oust XP. Si se mezcla en tanques, no use más de 1 a 3 pintas de este producto con 1 a 2 onzas de Oust XP por acre. Para tratar malezas anuales listadas en esta etiqueta en la etiqueta de Oust XP, que tengan menos de 6 pulgadas de altura (o el largo de los tallos), use las proporciones más bajas de cada producto. Use la proporción más alta a medida que las malezas aumenten de tamaño o cuando estén cerca de la floración o de la formación de semillas. Estas proporciones también controlan parcialmente las siguientes especies perennes:

Bahiagrass	Fescue, tall
Blackberry	Johnsongrass
Bluestem, silver	Poorjoe
Broomsedge	Raspberry
Dallisgrass	Trumpet creeper
Dewberry	Vaseygrass
Dock, curly	Vervain, blue
Dogfennel	

Úselo solamente en bermudagrass que esté bien establecido. Como resultado del tratamiento, el bermudagrass puede sufrir deterioro, pero volverá a crecer si se riega. No se recomienda repetir el tratamiento en la misma estación, ya que esto puede ocasionar daños graves al bermudagrass.

## 8.9 Bordes de las Carreteras

Todas las instrucciones de la sección "Áreas no cultivadas y áreas industriales" son válidas para bordes de las carreteras.

### Tratamiento de bordes

Este producto puede ser usado en los bordes de las carreteras. Puede aplicarse con rociadores de agullón, rociadores de agullón con pantalla, boquillas descentradas de gran volumen, equipo de mano y equipos similares.

### Barandas y otros obstáculos para la siega

Este producto puede ser usado para controlar las malezas que crecen debajo de las barandas y alrededor de la señalización y otros objetos en los bordes de las carreteras.

### Tratamiento localizado

Este producto puede ser usado como tratamiento localizado para controlar la vegetación indeseable que crece a lo largo de los bordes de las carreteras.

### Mezclas de tanque

Este producto puede mezclarse en tanque con los siguientes productos para tratamientos de bordes, barandas, localizados y de suelo vacío siempre y cuando dichos productos estén aprobados para su uso en dichos sitios. Lea y siga con cuidado las indicaciones, declaraciones preventivas y toda la demás información incluida en las etiquetas de los productos utilizados:

Clarity	Princep DF
diuron	Princep Liquid
Endurance	Ronstar 50 WSP
Escort	Sahara
Krovar I DF	simazine
Oust XP	Surflan
Outrider®	Telar
Pendulum 3.3 EC	Vanquish
Pendulum WDG	2,4-D

Vea las instrucciones generales para mezclas de tanque en la sección "Mezclas de tanques" de esta etiqueta.

### Mantenimiento del Bermudagrass y Bahiagrass

#### Aplicaciones cuando estén latentes (durmientes)

Este producto puede usarse para controlar o controlar parcialmente muchas malezas anuales de invierno y tall fescue para el alivio eficaz de bermudagrass y bahiagrass latentes. Trate solamente cuando el césped esté latente y antes de su reverdecer primaveral. Este producto puede mezclarse en tanque con el herbicida Outrider o Oust XP para el control residual. Las mezclas de tanque de este producto con Oust XP pueden retrasar el reverdecer.

Para obtener mejores resultados con malezas anuales de invierno, haga el tratamiento cuando las plantas estén en una etapa temprana de su crecimiento (menos de 6 pulgadas de altura) después de que la mayoría haya germinado. Para obtener mejores resultados con tall fescue, haga el tratamiento cuando el fescue esté en o después de su etapa de 4 a 6 hojas.

Aplique de 8 a 64 onzas de este producto en una mezcla de tanque con 3/4 a 1-1/3 de onza de herbicida Outrider por acre. Lea y siga todas las instrucciones de la etiqueta del herbicida Outrider.

Aplique de 8 a 64 onzas fluidas de este producto por acre, solo o en mezcla de tanque con 1/4 a 1 onza de Oust XP por acre. Use las proporciones recomendadas en 10 a 40 galones de agua por acre. Úselo solamente en áreas donde el bermudagrass o bahiagrass son deseables y en las que puede tolerarse un poco de daño o decoloración. Para evitar que el reverdecer se retarde y para minimizar el daño, no agregue más de 1 onza de Oust XP por acre sobre bermudagrass y no más de 1/2 onzas de Oust XP por acre sobre bahiagrass, y evite el tratamiento cuando estas hierbas se encuentren en estado semilátente.

#### Bermudagrass que esté creciendo activamente

Este producto puede ser usado para controlar total o parcialmente muchas malezas anuales y perennes para el mantenimiento eficaz de bermudagrass que esté creciendo activamente. Aplique de 1 a 3 pintas de este producto en 10 a 40 galones de solución para rociar por acre. Para tratar malezas anuales que tengan menos de 6 pulgadas de altura (o el largo de los tallos), use las proporciones más bajas. Use la proporción más alta a medida que las malezas aumenten de tamaño o cuando estén cerca de la floración o de la formación de semillas. Estas proporciones también controlan parcialmente las siguientes especies perennes:

Bahiagrass	Johnsongrass
Bluestem, silver	Trumpet creeper
Fescue, tall	Vaseygrass

Este producto puede ser mezclado en tanque con el Outrider para el control o el control parcial de *Sorghum halepense* (Johnsongrass) y otras malas hierbas indicadas en la etiqueta del Outrider. Use de 8 a 32 onzas de este producto con 3/4 a 1-1/3 onzas de Outrider. Utilice las proporciones más altas de ambos productos para el control de malas hierbas perennes o anuales que tengan una altura superior a 6 pulgadas.

Este producto puede ser mezclado con Oust XP. Si se mezcla en tanques, no use más de 1 a 2 pintas de este producto con 1 a 2 onzas de Oust XP por acre. Para tratar malezas anuales listadas en esta etiqueta y en las etiquetas de Oust XP que tengan menos de 6 pulgadas de altura (o el largo de los tallos), use las proporciones más bajas de cada producto. Use la proporción más alta a medida que las malezas aumenten de tamaño o cuando estén cerca de la floración o de la formación de semillas. Estas proporciones también controlan parcialmente las siguientes especies perennes:

Bahiagrass	Fescue, tall
Bluestem, silver	Johnsongrass
Broomsedge	Poorjoe
Dallisgrass	Trumpet creeper
Dock, curly	Vaseygrass
Dogfennel	Vervain, blue

Úselo solamente en bermudagrass que esté bien establecido. Como resultado del tratamiento, el bermudagrass puede sufrir deterioro, pero volverá a crecer si se riega. No se recomienda repetir el tratamiento con la mezcla de tanque en la misma estación, ya que esto puede ocasionar daños graves al bermudagrass.

#### Bahiagrass que esté creciendo activamente

Para suprimir el crecimiento vegetativo y la inhibición de la formación de semillas de bahiagrass durante aproximadamente 45 días, aplique 6 onzas fluidas de este producto en 10 a 40 galones de agua por acre. Aplique de 1 a 2 semanas después de reverdecer completo o después de cortar a una altura uniforme de 3 a 4 pulgadas. Esta aplicación debe ser hecha antes de la emergencia de las semillas.

Para la supresión durante un máximo de 120 días, aplique 4 onzas fluidas de este producto por acre, y a continuación una aplicación de 2 a 4 onzas fluidas por acre unos 45 días más tarde. No haga más de 2 aplicaciones al año.

Este producto se puede utilizar para el control o el control parcial de *Sorghum halepense* (Johnsongrass) y otras malas hierbas indicadas en la etiqueta de Outrider, en *Paspalum notatum* (bahiagrass) en crecimiento activo. Aplique de 1-1/2 a 4-3/4 onzas de este producto con 0.75 a 1.33 onzas de Outrider por acre. Utilice las proporciones más altas para el control de malas hierbas perennes o anuales que tengan una altura superior a 6 pulgadas. Utilice sólo en *Paspalum notatum* (bahiagrass) bien establecido.

Utilice las mezclas del tanque de este producto con Oust XP. Aplique 6 onzas fluidas de este producto con 0.25 onzas de Oust XP por acre, 1 a 2 semanas después de la primera siega de la primavera. Haga solamente 1 aplicación al año.

## 8.10 Sitos de servicios públicos

Este producto puede ser utilizado junto a derechos de paso para alimentación eléctrica, conductos y teléfonos y en otros lugares asociados con estos derechos de paso, como subestaciones, bordes de carreteras, líneas de ferrocarril o derechos de paso similares para servicios públicos.

Este producto puede ser utilizado en áreas de servicios públicos y subestaciones para el mantenimiento del suelo limpio de malezas, el recortado de bordes y el tratamiento localizado de vegetación no deseable, así como para eliminar las malezas no deseables que crecen en cuadros de arbustos establecidos o plantaciones ornamentales. Este producto puede ser utilizado antes de plantar un área de servicios públicos con plantas ornamentales, flores y césped (panes de césped o semillas) o antes de comenzar un proyecto de construcción.

Pueden hacerse aplicaciones repetidas de este producto, a medida que emergen las malezas, para mantener el suelo limpio de malezas.

Este producto también puede ser utilizado para preparar o establecer zonas de reserva de vida silvestre dentro de estos sitios, manteniendo los caminos de acceso y para el recorte lateral a lo largo de los derechos de paso.

#### Mezclas de tanque

Se pueden emplear mezclas de tanque con este producto para aumentar el espectro de control de malezas herbáceas, arbustos leñosos y árboles, siempre que el producto específico esté registrado para su aplicación en el terreno deseado. Antes de preparar una mezcla de tanque, lea y siga al pie de la letra las instrucciones, las advertencias de precaución y toda la información en las etiquetas de todos los productos utilizados. Use la mezcla conforme a las advertencias de precaución más estrictas indicadas para cada producto en la mezcla. Pueden utilizarse en mezclas de tanque todas las proporciones recomendadas de este producto.

Para controlar malezas herbáceas, utilice las proporciones de menor concentración recomendadas para la mezcla de tanque. Para controlar grupos densos o difíciles de arbustos leñosos y árboles, utilice las proporciones de mayor concentración recomendadas.

**MEZCLAS DE TANQUE:** Este producto se puede mezclar en tanque con los siguientes productos para su uso en áreas de servicios públicos, siempre y cuando los productos

estén aprobados para su uso en dichos sitios. Refiérase a las etiquetas de cada producto para los sitios y proporciones de aplicación aprobados.

Arsenal	Outrider
atrazine <sup>1</sup>	pendimethalin <sup>1</sup>
Barricade 65WG	Plateau
dicamba <sup>1</sup>	Ronstar 50 WP
diuron <sup>1</sup>	Sahara
Endurance	simazine <sup>1</sup>
Escort	Surflan AS
Escort XP	Surflan WDG
Garlon 3A <sup>2</sup>	Telar DF
Garlon 4 <sup>3</sup>	Transline
Krenite	Vanquish
Krovar 1 DF	Velpar DF
Oust	Velpar L
Oust XP	2,4-D <sup>1</sup>

1 Pueden realizarse mezclas en tanque con productos que contienen este ingrediente activo genérico siempre y cuando dichos productos estén aprobados para su aplicación en el lugar deseado.

2 Antes de agregar este producto, asegúrese de haber mezclado completamente Garlon 3A con agua, conforme a las instrucciones de la etiqueta. Para evitar problemas de incompatibilidad de rocío, agite la mezcla del rocío en el momento en que se agregue este producto.

3 Para tratamientos de recorte lateral, use este producto solo o en una mezcla en tanque con Garlon 4.

#### Tierra desprovista de vegetación y podas y bordes

Este producto se puede utilizar en sitios de servicios públicos y subestaciones para terreno desprovisto de vegetación y para objetos con bordes recortados, para tratamiento localizado de vegetación no deseable y para eliminar las malezas no deseables que crecen en cuadros de arbustos establecidos y plantaciones ornamentales. Este producto puede usarse antes de plantar un área con plantas ornamentales, flores, césped (tepes o semillas), o antes de colocar asfalto o de comenzar un proyecto de construcción.

Pueden hacerse aplicaciones repetidas de este producto, a medida que emergen las malezas, para mantener el suelo limpio de malezas.

Este producto se puede mezclar en tanque con los siguientes productos. Consulte en las etiquetas de estos productos los lugares aprobados para emplearlos en el establecimiento no cultivados y las proporciones de aplicación.

Arsenal	Plateau
Banvel	Princep DF
Barricade 65WG	Princep Liquid
diuron	Ronstar 50 WP
Endurance	Sahara
Escort	simazine
Garlon 3A	Surflan

## 9.0 TIPOS DE MALEZAS CONTROLADAS

Use siempre la proporción más alta de este producto por acre, dentro de las proporciones recomendadas, cuando las malezas son densas o cuando crecen en un área no tocada (no cultivada).

Puede haber una disminución de los resultados cuando se traten malezas cubiertas con mucho polvo. Para las malezas que han sido segadas, pastadas o cortadas, permita que vuelvan a crecer antes del tratamiento.

Cuando realice aplicaciones de rocío dirigido a pequeña escala, utilice una solución de 5 a 10 por ciento de este producto para el control total o parcial de malezas anuales, malezas perennes o matorrales leñosos y árboles. La cobertura del rocío debe ser uniforme y tomar contacto con al menos el 50 por ciento del follaje. La cobertura de la mitad superior de la planta es importante para obtener resultados óptimos. Para asegurar la cobertura del rocío adecuada, rocíe ambos lados de los matorrales leñosos y de los árboles grandes o altos, cuando el follaje es espeso y denso o cuando hay varios rebrotes.

Vea las secciones siguientes para las proporciones recomendadas para el control de malezas, matorrales leñosos y árboles anuales y perennes. Para las malezas, matorrales leñosos y árboles difíciles de controlar, donde las plantas crecen en condiciones de estrés, o donde la infestación es densa, pueden usarse 5 a 10 cuartos de galón por acre de este producto para obtener mejores resultados.

### 9.1 Malezas anuales

Use 1 cuarto de galón por acre si las malezas tienen menos de 6 pulgadas de altura o largo de los tallos y 1.5 cuartos a 4 cuartos de galón por acre si las malezas tienen más de 6 pulgadas de altura o largo de los tallos o cuando las malezas crecen en condiciones de estrés.

Para aplicaciones de rociado para mojar, aplique una solución de 1/2 por ciento de este producto a las malezas que tengan menos de 6 pulgadas de altura o largo de los tallos. Haga la aplicación antes de la formación de semillas para la hierba, o la formación de yemas para las malezas de hoja ancha. Para las malezas anuales que tienen más de 6 pulgadas de altura o las malezas más pequeñas que crecen en condiciones de estrés,

use una solución del 1 al 2 por ciento. Use la dosis más alta para las especies difíciles de controlar o las malezas de más de 24 pulgadas de altura.

#### ESPECIES DE MALEZAS

Anoda, spurred	Medusahead*
Barley*	Morningglory ( <i>Ipomoea spp</i> )
Barley, little*	Mustard, blue*
Barnyardgrass*	Mustard, tansy*
Bassia, fivehook	Mustard, tumble*
Bittercress*	Mustard, wild*
Bluegrass, annual*	Nightshade, black*
Bluegrass, bulbous*	Oats
Brome, downy*	Panicum, browntop*
Brome, Japanese*	Panicum, fall*
Buttercup*	Panicum, Texas*
Castorbean	Pennycress, field*
Cheatgrass*	Pepperweed, Virginia*
Cheeseweed ( <i>Malva parviflora</i> )	Figweed*
Chervil*	Puncturevine
Chickweed*	Purslane, common
Cocklebur*	Pusley, Florida
Copperleaf, lophornbeam	Ragweed, common*
Copperleaf, Virginia	Ragweed, giant
Coreopsis, plains/tickseed*	Rice, red
Corn*	Rocket, London*
Crabgrass*	Rocket, yellow
Cupgrass, woolly*	Rye*
Dwarfdandelion*	Ryegrass*
Eclipta*	Sandbur, field*
Falsedandelion*	Sesbania, hemp
Falsesell, smallseed*	Shattercane*
Fiddleneck	Shepherd's-purse*
Filaree	Sicklepod
Fleabane, annual*	Signalgrass, broadleaf*
Fleabane, hairy	Smartweed, ladyslthumb*
( <i>Conyza bonariensis</i> )*	Smartweed, Pennsylvania*
Fleabane, rough*	Sorghum, grain (milo)*
Foxtail*	Sowthistle, annual
Foxtail, Carolina*	Spanishneedles
Geranium, Carolina	Speedwell, corn*
Goatgrass, jointed*	Speedwell, purslane*
Goosegrass	Sprangletop*
Groundsel, common*	Spurge, annual
Henbit	Spurge, prostrate*
Horseweed/Marestail	Spurge, spotted*
( <i>Conyza canadensis</i> )	Spurry, umbrella*
Ichgrass*	Starthistle, yellow
Johnsongrass, seedling	Stinkgrass*
Junglerice	Sunflower*
Knottweed	Teaweed/Prickly sida
Kochia	Thistle, Russian
Lamb's-quarters*	Velvetleaf
Lettuce, prickly*	Wheat*
Mannagrass, eastern*	Wild oats*
Mayweed	Witchgrass*

\* Cuando use equipos de aplicación diseminada a nivel del terreno (aplicaciones aéreas o rociadores de aguilón con boquillas tipo abarico plano), estas especies serán controladas o controladas parcialmente con 1 pinta de este producto por acre. Las aplicaciones deben hacerse usando de 3 a 10 galones de volumen por acre. Use boquillas que garanticen una cobertura completa del follaje y haga el tratamiento cuando las malezas estén en su etapa temprana de crecimiento.

### 9.2 Malezas perennes

Los mejores resultados se obtienen cuando las malezas perennes son tratadas una vez que han alcanzado la etapa reproductiva de su crecimiento (inicio de las semillas para hierbas y formación de yemas para malezas de hoja ancha). Para las plantas sin flores, los mejores resultados se obtienen cuando las plantas alcanzan el estado de madurez. En muchos casos, se requiere el tratamiento antes de estas etapas del crecimiento. En estos casos, use la proporción más alta dentro de las proporciones recomendadas.

Use una solución del 2 por ciento en malezas perennes difíciles de controlar como pasto bermudagrass, dock, field bindweed, hemp dogbane, milkweed y Canada thistle.

Asegúrese de que la cobertura sea a fondo cuando emplee tratamientos de rociado para mojar con equipo de mano. Cuando se utilice equipo manual para tratamientos puntuales localizados de bajo volumen, aplique una solución de 5 a 10 por ciento de este producto.

Espere 7 días o más después de la aplicación antes de labrar.

Especies de malezas	Proporción (cuartos por acre)	% de solución de mano
Alfalfa*	1	2
Alligatorweed*	4	1.5
Anise (fennel)	2 - 4	1 - 2
Artichoke, Jerusalem	3 - 5	2
Bahiagrass	3 - 5	2
Beachgrass, European ( <i>Ammophila arenaria</i> )	—	5
Bentgrass*	1.5	2
Bermudagrass	5	2
Bermudagrass, water (knotgrass)	1.5	2
Bindweed, field	4 - 5	2
Bluegrass, Kentucky	2	2
Blueweed, Texas	4 - 5	2
Brackenfern	3 - 4	1 - 1.5
Bromegrass, smooth	2	2
Bursage, woolly-leaf	—	2
Canarygrass, reed	2 - 3	2
Cattail	3 - 5	2
Clover, red, white	3 - 5	2
Cogongrass	3 - 5	2
Dallisgrass	3 - 5	2
Dandelion	3 - 5	2
Dock, curly	3 - 5	2
Dogbane, hemp	4	2
Fescue (except tall)	3 - 5	2
Fescue, tall	1 - 3	2
Guineagrass	3	1
Hemlock, poison	2 - 4	1 - 2
Horsenettle	3 - 5	2
Horseradish	4	2
Iceplant	2	1.5 - 2
Ivy, German	2 - 4	1 - 2
Johnsongrass	2 - 3	1
Kikuyugrass	2 - 3	2
Knapweed	4	2
Lantana	—	1 - 1.25
Lespedeza	3 - 5	2
Milkweed, common	3	2
Muhly, wirestem	2	2
Mullein, common	3 - 5	2
Napiergrass	3 - 5	2
Nightshade, silverleaf	2	2
Nutsedge, purple, yellow	3	1 - 2
Orchardgrass	2	2
Pampasgrass	3 - 5	1.5 - 2
Paragrass	3 - 5	2
Pepperweed, perennial	4	2
Phragmites*	3 - 5	1 - 2
Quackgrass	2 - 3	2
Redvine*	2	2
Reed, giant	4 - 5	2
Ryegrass, perennial	2 - 3	1
Smartweed, swamp	3 - 5	2
Spurge, leafy*	—	2
Sweet potato, wild*	—	2
Thistle, artichoke	2 - 3	1 - 2
Thistle, Canada	2 - 3	2
Timothy	2 - 3	2
Torpedograss*	4 - 5	2
Trumpet creeper*	2 - 3	2
Vaseygrass	3 - 5	2
Velvetgrass	3 - 5	2
Wheatgrass, western	2 - 3	2

\*Control parcial

## 9.3 Matorrales leñosos y árboles

Aplice este producto después de la formación completa de hojas, a menos que se indique lo contrario en esta etiqueta o en otras etiquetas o fichas técnicas complementarias publicadas por Monsanto. Para las plantas más grandes y/o donde la densidad de la vegetación sea alta, use la proporción más alta. En las plantas enredaderas que han alcanzado el estado leñoso de crecimiento, use las proporciones más altas. Los mejores resultados se obtienen cuando se aplica a finales del verano o en el otoño, después de la formación de frutos.

En zonas áridas, se obtienen mejores resultados cuando se aplica en la primavera o a principios del verano cuando las especies que crecen como matorrales tienen alto contenido de humedad y florecen.

Cuando haga tratamientos de rociado para mojar con equipos de mano, asegúrese de que la cobertura sea total. Cuando usa equipos de mano para tratamientos localizados con rociado dirigido de poco volumen, aplique una solución del 5 al 10 por ciento de este producto.

Es posible que los síntomas no aparezcan antes de las heladas o del envejecimiento con tratamientos de otoño.

Permita que pasen 7 o más días después de la aplicación antes de labrar, segar o remover. Es posible que se necesite repetir el tratamiento para tratar plantas que emergen de partes enterradas o de semillas. Un poco de colorido otoñal es aceptable en plantas indeseables que pierden las hojas en el otoño, siempre y cuando no hayan sufrido mayor pérdida de hojas. Si la aplicación de otoño se realiza después de que hayan ocurrido heladas, es posible que se obtengan resultados deficientes.

Especies de malezas	Proporción (cuartos por acre)	% de solución de mano de rociado para mojar
Alder	3 - 4	1 - 1.5
Ash*	2 - 5	1 - 2
Aspen, quaking	2 - 3	1 - 1.5
Bearclover (Bearmat)*	2 - 5	1 - 2
Beech*	2 - 5	1 - 2
Birch	2	1
Blackberry	3 - 4	1 - 1.5
Blackgum*	2 - 5	1 - 2
Bracken	2 - 5	1 - 2
Broom, French, Scotch	2 - 5	1.5 - 2
Buckwheat, California*	2 - 4	1 - 2
Cascara*	2 - 5	1 - 2
Catsclaw*	—	1 - 1.5
Ceanothus*	2 - 5	1 - 2
Chamise*	2 - 5	1
Cherry, bitter, black, pin	2 - 3	1 - 1.5
Coyotebrush	3 - 4	1.5 - 2
Creeper, Virginia	2 - 5	1 - 2
Deerweed	2 - 5	1
Dogwood*	2 - 5	1 - 2
Elderberry	2	1
Elm*	2 - 5	1 - 2
Eucalyptus	—	2
Flower, monkey flower*	2 - 4	1 - 2
Gorse*	2 - 5	1 - 2
Hasardia*	2 - 4	1 - 2
Hawthorn	2 - 3	1 - 1.5
Hazel	2	1
Hickory*	2 - 5	1 - 2
Honeysuckle	3 - 4	1 - 1.5
Hornbeam, American*	2 - 5	1 - 2
Ivy, poison	4 - 5	2
Kudzu	4	2
Locust, black*	2 - 4	1 - 2
Madrone resprouts*	—	2
Manzanita*	2 - 5	1 - 2
Maple, red*	2 - 4	1 - 1.5
Maple, sugar	—	1 - 1.5
Maple, vine*	2 - 5	1 - 2
Oak, black, white*	2 - 4	1 - 2
Oak, post	3 - 4	1 - 1.5
Oak, northern pin	2 - 4	1 - 1.5
Oak, poison	4 - 5	2
Oak, scrub*	2 - 4	1 - 1.5

Especies de malezas	Proporción (cuartos por acre)	% de solución de mano de rociado para mojar
Oak, southern red	2 - 3	1 - 1.5
Olive, Russian*	2 - 5	1 - 2
Peppertree, Brazilian (Florida holly)*	2 - 5	1 - 2
Persimmon*	2 - 5	1 - 2
Pine	2 - 5	1 - 2
Poplar, yellow*	2 - 5	1 - 2
Redbud, eastern	2 - 5	1 - 2
Rose, multiflora	2	1
Sage, black	2 - 4	1
Sage, white*	2 - 4	1 - 2
Sage brush, California	2 - 4	1
Salmonberry	2	1
Saltcedar*	2 - 5	1 - 2
Sassafras*	2 - 5	1 - 2
Sourwood*	2 - 5	1 - 2
Sumac, laurel, poison, smooth, sugarbush, winged *	2 - 4	1 - 2
Sweetgum	2 - 3	1 - 1.5
Swordfern*	2 - 5	1 - 2
Tallowtree, Chinese	—	1
Tanoak resprouts*	—	2
Thimbleberry	2	1
Tobacco, tree*	2 - 4	1 - 2
Toyon*	—	2
Trumpet creeper	2 - 3	1 - 1.5
Waxmyrtle, southern*	2 - 5	1 - 2
Willow	3	1
Yerba Santa, California*	—	2

\*Control parcial

## 10.0 LIMITES EN LA GARANTIA Y EN LA RESPONSABILIDAD

Monsanto Compañía garantiza que este producto concuerda con la descripción química de la etiqueta y es razonablemente adecuado para los propósitos descritos en el librito titulado Instrucciones Completas para el Uso ("Instrucciones") cuando se usa de acuerdo con dichas Instrucciones y las condiciones que allí se detallan. SEGUN LO ESTABLECIDO EN LA LEY VIGENTE, NO SE HACE NINGUNA OTRA GARANTIA EXPRESA O IMPLICITA ACERCA DE LA IDONEIDAD PARA UN USO PARTICULAR O COMERCIABILIDAD. Esta garantía está sujeta también a las condiciones y limitaciones que aquí se indican.

El comprador y todos los usuarios deberán reportar con prontitud a esta Compañía acerca de cualquier reclamo que se base en un contrato, negligencia, estricta responsabilidad, y otros actos ilícitos.

Según lo establecido en la ley vigente, el comprador y todos los usuarios son responsables por todas las pérdidas o daños que resultasen por el uso o manipulación en condiciones que estén más allá del control de esta Compañía, incluyendo pero no limitándose a: incompatibilidad con productos que no sean los señalados en las Instrucciones, aplicación o contacto con vegetación que no se quiera destruir, condiciones climáticas inusuales, condiciones de clima que estén fuera de los límites que se consideran normales en el lugar de la aplicación y para el período de tiempo en el cual se aplica, así como condiciones de clima que estén fuera de los límites indicados en las Instrucciones, aplicaciones que no estén explícitamente aconsejadas en las Instrucciones, condiciones de humedad que estén fuera de los límites establecidos en las Instrucciones, o la presencia de productos en la tierra o sobre ella, en las plantas o en la vegetación que se está tratando, diferentes a los indicados en las Instrucciones.

Monsanto Compañía no garantiza ninguno de los productos reformulados o reempacados de este producto, excepto de acuerdo a los requisitos de la administración de esta Compañía y con el permiso escrito expreso de esta Compañía.

SEGUN LO ESTABLECIDO EN LA LEY VIGENTE, LA UNICA Y EXCLUSIVA COMPENSACION AL USUARIO O COMPRADOR Y EL LIMITE DE RESPONSABILIDAD DE ESTA COMPAÑIA O DE CUALQUIER OTRO VENDEDOR POR CUALQUIER PERDIDA O POR TODAS LAS PERDIDAS, PERJUICIOS O DAÑOS QUE RESULTASEN DEL USO O MANEJO DE ESTE PRODUCTO (INCLUYENDO RECLAMOS QUE SE BASEN EN UN CONTRATO, NEGLIGENCIA, ESTRUCTA RESPONSABILIDAD Y OTROS ACTOS ILICITOS) SERA EL PRECIO PAGADO POR EL USUARIO O EL COMPRADOR POR LA CANTIDAD INVOLUCRADA DE ESTE PRODUCTO, O A ELECCION DE ESTA COMPAÑIA O DE OTRO VENDEDOR, EL REEMPLAZO DE DICHA CANTIDAD, O SI NO SE OBTUVO MEDIANTE COMPRA SE REEMPLAZARA DICHA CANTIDAD DEL PRODUCTO. EN NINGUN CASO ESTA COMPAÑIA U OTRO VENDEDOR SERAN RESPONSABLES POR DAÑOS INCIDENTALES, CONSECUENTES O ESPECIALES.

En el momento de abrir y usar el producto, se asume que el comprador y todos los usuarios han aceptado las condiciones de los LIMITES EN LA GARANTIA Y EN LA RESPONSABILIDAD que no pueden variar por medio de ningún acuerdo verbal o escrito. Si las condiciones son inaceptables, devuelva el producto inmediatamente sin abrir el recipiente.

Outrider, Ranger PRO, Ranger PRO y el diseño, y el diseño de Monsanto y el Vine son marcas comerciales de la empresa Monsanto Technology LLC. Todas las otras marcas registradas son la propiedad de sus dueños respectivos.

Este producto está protegido por la patente de los Estados Unidos Nos. 5,683,958; 5,703,015; 6,063,733; 6,121,199; 6,121,200. No se han otorgado licencias bajo ninguna patente que no sea de los Estados Unidos.

Registro en la EPA Nº 524-517

En caso de que se presente una emergencia relacionada con este producto, o para la ayuda médica, llame por cobrar a cualquier hora del día o de la noche, al teléfono (314) 694-4000.

Empacado Para:  
MONSANTO COMPANY  
800 N. LINDBERGH BLVD.  
ST. LOUIS, MISSOURI, 63167 U.S.A.  
©2010  
102909





# Payload®

HERBICIDE



**DIRECTIONS FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS.**

Active Ingredient	By Wt
* Flumioxazin .....	51%
Other Ingredients .....	49%
Total	100%

\* (2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione)

Payload® Herbicide is a water dispersible granule containing 51% active ingredient.

EPA Reg. No. 59639-120

EPA Est. 11773-IA-01®, 39578-TX-01®, 5905-IA-01®  
Superscript is first letter of lot number.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS & DOMESTIC ANIMALS  
CAUTION**

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing.

**FIRST AID**

**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. (continued)

**FIRST AID (continued)**

**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 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.

**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 **1-800-892-0099** for emergency medical treatment information.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some of the 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-resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as Polyethylene or Polyvinyl Chloride, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users should:

- 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.

**ENVIRONMENTAL HAZARDS**

This product is toxic to non-target plants and aquatic invertebrates. 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 non-target plants and aquatic organisms in neighboring areas. Do not apply where runoff is likely to occur. Do not apply when weather

conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

This pesticide is toxic to plants and should be used strictly in accordance with the drift and runoff precautions on this label in order to minimize off-site exposures.

Under some conditions this product may have a potential to run off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, such as no till, limited till and contour plowing; these methods also reduce pesticide runoff. Use of vegetation filter strips along rivers, creeks, streams, wetlands or on the downhill side of fields where runoff could occur will minimize water runoff and is recommended.

### **DIRECTIONS FOR USE**

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

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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.

#### **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 Standards 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.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift. Do not enter or allow others to enter treated areas until sprays have dried.

#### **DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY**

**IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.**

(continued)

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#### **RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively hereinafter as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

#### **LIMITED WARRANTY**

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

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#### LIMITATION OF LIABILITY

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR 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 THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

#### PROMPT NOTICE OF CLAIM

To the extent consistent with applicable law allowing such requirements, Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is later, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law, if Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

#### NO AMENDMENTS

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing **Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability**, which may not be modified by any oral or written agreement.

#### TANK MIXES

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

Read and follow the entire label of each product to be used in the tank mix with this product.

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## PRODUCT INFORMATION

*Payload* Herbicide is a selective herbicide to maintain bare ground non-crop areas when used in accordance with this label. *Payload* Herbicide is effective as a preemergence and/or postemergence herbicide for control of selected grass and broad-leaf weeds.

*Payload* Herbicide controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

### USE RESTRICTIONS

- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.

- Do not apply more than 12 oz of *Payload* Herbicide per acre per application.
- Do not apply more than 24 oz of *Payload* Herbicide per acre per year.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.

#### USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

#### RESISTANCE MANAGEMENT

Any weed population may contain or develop plants naturally resistant to herbicides in various mode of action classes. Resistant biotypes may eventually dominate the weed population if the same class of chemistry/mode of action herbicides are used repeatedly in the same field or in successive years. These resistant biotypes may not be adequately controlled by herbicides in a mode of action class for which resistance has developed. A gradual or total loss of weed control may occur over time. Other resistance mechanisms that are not linked to site of action, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

#### To Delay Herbicide Resistance

- Avoid the use of herbicides that have a similar target site mode of action in consecutive years.
- Herbicide use should be based on an Integrated Pest Management (IPM) program that includes scouting, record keeping, and consideration of cultivation practices, water management, weed free crop seed, crop rotation, and other chemical or cultural control practices.
- Monitor treated weed population for resistance development and report suspected resistance.
- Contact your local extension or crop expert (advisor) for any additional pesticide resistance management and/or IPM recommendations for specific crops and weed biotypes.
- For further information contact Valent U.S.A. Corporation at the following toll free number 1-800-898-2536.

#### PREEMERGENCE APPLICATION

Preemergence applications of *Payload* Herbicide should be made prior to weed emergence. Moisture is necessary to activate *Payload* Herbicide on soil for residual weed control. Moisture is needed to move *Payload* Herbicide into the soil for preemergent weed control. Dry weather following application of *Payload* Herbicide may reduce effectiveness.

#### POSTEMERGENCE APPLICATION

For best results, *Payload* Herbicide should be applied to actively growing weeds. Applying *Payload* Herbicide under conditions that do not promote active

weed growth will reduce herbicide effectiveness. Do not apply *Payload* Herbicide when the crop or weeds are under stress due to drought, excessive water and extremes in temperatures or disease. *Payload* Herbicide is most effective when applied under sunny conditions at temperatures above 65°F.

*Payload* Herbicide is rainfast one hour after application. Applications should not be made if rain is expected within one hour of application or efficacy may be reduced.

#### APPLICATION EQUIPMENT

**Important:** Spray equipment, including all tanks, hoses, booms, screens and nozzles, should be thoroughly cleaned. **Spray equipment used to apply *Payload* Herbicide should not be used to apply other materials to any desirable plant foliage.** Equipment with *Payload* Herbicide residue remaining in the system may result in crop injury to subsequently treated crops.

#### SPRAYER PREPARATION

Before applying *Payload* Herbicide, start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms should be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. The spray equipment should be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply *Payload* Herbicide. If two or more products were tank mixed prior to *Payload* Herbicide application, the most restrictive cleanup procedure should be followed.

#### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. To ensure a uniform spray mixture, pre-slurry the required amount of *Payload* Herbicide with water prior to addition to the spray tank. Use a minimum of 1 gal of water per 10 oz of *Payload* Herbicide.
3. While agitating, slowly add the pre-slurried *Payload* Herbicide to the spray tank. Agitation should create a rippling or rolling action on the water surface.
4. If tank mixing *Payload* Herbicide with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
5. Add any required adjuvants.
6. Fill spray tank to desired level with water. **Agitation should continue until spray solution has been applied.**
7. Mix only the amount of spray solution that can be applied the day of mixing. *Payload* Herbicide should be applied within 24 hours of mixing.

### SPRAYER CLEANUP

Except for dedicated bare ground herbicide application equipment, spray equipment should be cleaned each day following *Payload* Herbicide application. The following steps should be used to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank, add suitable commercial spray tank cleaning material following label directions, or add 1 gal of 3% household ammonia for every 100 gals of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them with clean water.

### SPRAY DRIFT REDUCTION

Do not apply under circumstances where possible drift to unprotected persons or to food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial or ground applications when the wind velocity favors on-target product deposition. Drift potential is lowest between windspeeds of 2-10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.

- For ground boom applications, apply with nozzle height at the lowest boom height which provides uniform coverage and reduces exposure to evaporation and wind.

### WEEDS CONTROLLED

When *Payload* Herbicide is applied preemergence or postemergence at recommended rates and weed stages, the following grasses and broadleaf weeds are controlled.

**TABLE 1. WEEDS CONTROLLED BY PAYLOAD HERBICIDE**

Common Name	Scientific Name
Alyssum, Hoary	<i>Berteroa incana</i>
Amaranth	
Palmer	<i>Amaranthus palmeri</i>
Spiny	<i>Amaranthus spinosus</i>
Barnyardgrass*	<i>Echinochloa crus-galli</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Bittercress, Hairy	<i>Cardamine hirsuta</i>
Bluegrass, Annual*	<i>Poa annua</i>
Burclover, California	<i>Medicago polymorpha</i>
Carpetweed	<i>Mollugo verticillata</i>
Chickweed	
Common	<i>Stellaria media</i>
Mouseear	<i>Cerastium vulgatum</i>
Crabgrass	
Large*	<i>Digitaria sanguinalis</i>
Smooth*	<i>Digitaria ischaemum</i>
Southern*	<i>Digitaria ciliaris</i>
Croton, Tropic	<i>Croton glandulosus</i> var. <i>septentrionalis</i>
Dandelion*	<i>Taraxacum officinale</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Doveweed	<i>Murdannia nudiflora</i>
Eclipta	<i>Eclipta prostrata</i>
Filaree, Redstem*	<i>Erodium cicutarium</i>
Foxtail	
Bristly*	<i>Setaria verticillata</i>
Giant*	<i>Setaria faberi</i>
Green*	<i>Setaria viridis</i>
Yellow*	<i>Setaria glauca</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Goosegrass*	<i>Eleusine indica</i>
Groundsel, Common	<i>Senecio vulgaris</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed*	<i>Conyza canadensis</i>
Indigo, Hairy	<i>Indigofera hirsuta</i>
Ivy, Ground*	<i>Glechoma hederacea</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Kyllinga, Green*	<i>Kyllinga brevifolia</i>

\*Preemergence control only.

(continued)

**TABLE 1. WEEDS CONTROLLED BY PAYLOAD HERBICIDE** (continued)

Common Name	Scientific Name
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters Common	<i>Chenopodium album</i>
Liverwort	<i>Marchantia polymorpha</i>
Mallow Common	<i>Malva neglecta</i>
Little Venice	<i>Malva parviflora</i>
Mayweed*	<i>Hibiscus trionum</i>
Morningglory Entireleaf	<i>Anthemis cotula</i>
Ivyleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>
Red/Scarlet	<i>Ipomoea hederacea</i>
Smallflower	<i>Ipomoea coccinea</i>
Tall	<i>Jacquemontia tamnifolia</i>
Moss	<i>Ipomoea purpurea</i>
Mustard Tumble Wild	<i>Bryum</i> spp.
Nightshade Black Eastern Black Hairy	<i>Sisymbrium altissimum</i>
Panicum Fall* Texas*	<i>Brassica kaber</i>
Parsley-Piert	<i>Solanum nigrum</i>
Pearlwort, Birdseye*	<i>Solanum ptycanthum</i>
Pennycress, Field	<i>Solanum sarrachoides</i>
Phyllanthus, Longstalked	<i>Panicum dichotomiflorum</i>
Pigweed Prostrate	<i>Panicum texanum</i>
Redroot	<i>Alchemilla arvensis</i>
Smooth	<i>Sagina procumbens</i>
Tumble	<i>Thlaspi arvense</i>
Pineapple-weed*	<i>Phyllanthus tenellus</i>
Plantain Broadleaf* Buckhorn*	<i>Amaranthus blitoides</i>
Poinsettia, Wild	<i>Amaranthus retroflexus</i>
Puncturevine	<i>Amaranthus hybridus</i>
Purslane, Common	<i>Amaranthus albus</i>
Pusley, Florida	<i>Matricaria matricarioides</i>
Ragweed Common Giant	<i>Plantago major</i>
Redmaids	<i>Plantago lanceolata</i>
Redweed	<i>Euphorbia heterophylla</i>
Rocket, Yellow	<i>Tribulus terrestris</i>
	<i>Portulaca oleracea</i>
	<i>Richardia scabra</i>
	<i>Ambrosia artemisiifolia</i>
	<i>Ambrosia trifida</i>
	<i>Calandrinia ciliata</i>
	<i>Melochia corchorifolia</i>
	<i>Barbarea vulgaris</i>

\*Preemergence control only. (continued)

**TABLE 1. WEEDS CONTROLLED BY PAYLOAD HERBICIDE** (continued)

Common Name	Scientific Name
Senna, Coffee	<i>Cassia occidentalis</i>
Sesbania, Hemp	<i>Sesbania exaltata</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Sida, Prickly (Teaweed)	<i>Sida spinosa</i>
Signalgrass*	<i>Brachiaria platyphylla</i>
Smartweed Pennsylvania	<i>Polygonum pennsylvanicum</i>
Sowthistle, Annual	<i>Sonchus oleraceus</i>
Spurge Prostrate	<i>Euphorbia humistrata</i> <i>Engelm.</i>
Spotted	<i>Euphorbia maculata</i>
Starbur, Bristly*	<i>Acanthospermum hispidum</i>
Thistle Canada*	<i>Cirsium arvense</i>
Russian	<i>Salsola iberica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Waterhemp Common Tall	<i>Amaranthus rudis</i> <i>Amaranthus tuberculatus</i>
Woodsorrel, Yellow*	<i>Oxalis stricta</i>

\*Preemergence control only.

### DIRECTIONS FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS

*Payload* Herbicide, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply *Payload* Herbicide only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders

Follow all applicable directions as outlined above under General Information. See Table 1 for a list of broadleaf weeds and grasses controlled by *Payload* Herbicide.

*Payload* Herbicide offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

### PREEMERGENCE APPLICATION

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *Payload* Herbicide per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of *Payload* Herbicide should be made to a weed free soil surface. Preemergence applications of *Payload* Herbicide must be completed prior to weed emergence. Moisture is necessary to activate *Payload* Herbicide on soil for residual weed control. Dry weather following application of *Payload* Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, *Payload* Herbicide will control susceptible germinating weeds.

### POSTEMERGENCE APPLICATION

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of *Payload* Herbicide per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). The addition of an adjuvant enhances *Payload* Herbicide activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of *Payload* Herbicide. Emerged weeds are controlled postemergence with *Payload* Herbicide, however, translocation of *Payload* Herbicide within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with *Payload* Herbicide occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

### SOIL CHARACTERISTICS

Application of *Payload* Herbicide to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

### CARRIER VOLUME AND SPRAY PRESSURE

#### PREEMERGENCE APPLICATION

To ensure uniform coverage, use at least 10 gals of spray solution per acre. Nozzle selection should meet manufacturer's gallonage and pressure recommendation for preemergence herbicide application.

#### POSTEMERGENCE APPLICATION

To ensure thorough coverage, use at least 15 gals of spray solution per acre. Use at least 20 gals per acre if dense vegetation or heavy residue is present on the soil surface. Nozzle selection should meet manufacturer's gallonage and pressure recommendations for postemergence herbicide application.

### ADDITIVES

#### POSTEMERGENCE APPLICATION

When applying *Payload* Herbicide after weeds emerge, mix with an agronomically approved adjuvant. When an adjuvant is to be used with this product, Valent recommends the use of a Chemical Producers and Distributors Association certified adjuvant. A crop oil concentrate which contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient should be used when applying *Payload* Herbicide

as part of a postemergence weed control program. Mixing compatibility should be verified by a jar test before using.

A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or a 28 to 32% nitrogen solution at 1 to 2 qt/A) may be added to the spray mixture along with a crop oil concentrate or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for crop oil concentrate or non-ionic surfactant.

### JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND *PAYLOAD* HERBICIDE

A jar test should be performed before mixing commercial quantities of *Payload* Herbicide, when using *Payload* Herbicide for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pt of water to a quart jar. The water should be from the same source and have the same temperature as the water used in the spray tank mixing operation.
2. Add 3 grams (approximately 1 level tsp) of *Payload* Herbicide for the 8 oz/A rate or 4 grams (approximately 1-1/2 tsp) for 12 oz/A rate to the jar. Gently mix until product disperses.
3. Add 60 ml (4 Tbsp or 2 fl oz) of additive to the quart jar and gently mix.
4. If nitrogen is being used, add 16 ml (1 Tbsp) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 grams of AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - a) Layer of oil or globules on the solution surface.
  - b) Flocculation: Fine particles in suspension or as a layer on the bottom of the jar.
  - c) Clabbering: Thickening texture (coagulated) like gelatin.

### APPLICATION EQUIPMENT

Application equipment should be clean and in good repair. Nozzles should be uniformly spaced on boom and frequently checked for accuracy.

### BROADCAST APPLICATION

Apply *Payload* Herbicide, and *Payload* Herbicide tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

### BAND APPLICATION

When banding, use proportionately less water and *Payload* Herbicide per acre.

### HANDGUN APPLICATION

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gals per acre to insure uniform coverage.

## AERIAL APPLICATION

- Aerial applications are limited to maintaining weed free railroad beds, railroad yards and surrounding areas and military installations.

To obtain satisfactory weed control with aerial applications of *Payload* Herbicide, uniform coverage must be obtained. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying *Payload* Herbicide within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

### Volume Pressure

Use *Payload* Herbicide in 5 to 10 gals of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gals per acre will provide inadequate weed control. Higher gallonage applications provide more consistent weed control.

### Nozzle and Nozzle Operation

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles, such as diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0 and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

### Adjuvants

Refer to the additive section or the tank mix partners label for adjuvant recommendation.

## TANK MIX APPLICATIONS

In addition to weeds controlled by *Payload* Herbicide used alone, tank mixtures with other preemergence and postemergence herbicides registered for use in non-crop areas provide a broader spectrum of weed control. *Payload* Herbicide must be tank mixed with other non-crop herbicides including, but not limited to those products listed below.

## TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL

2,4-D	Imazapic	Pramitol
Bromacil	Imazapyr	Prodiamine
Chlorsulfuron	Metsulfuron	Simazine
Clorpyralid	methyl	Sulfometuron
Dicamba	Norfurazon	methyl
Diuron	Oryzalin	Tebuthiuron
Glyphosate	Pendimethalin	Triclopyr
Hexazinone	Picloram	

**IMPORTANT:** Completely read and follow the label of any potential *Payload* Herbicide tank mix partner. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

## RESTRICTIONS AND LIMITATIONS

- Do not apply more than 2 applications at 12 oz/A or 3 applications at 8 oz/A per year.
- Do not re-apply *Payload* Herbicide within 30 days.

## STORAGE AND DISPOSAL

### PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night (800) 892-0099. Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

### PESTICIDE DISPOSAL

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container 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.

*Payload* and *Products That Work, From People Who Care* are registered trademarks of Valent U.S.A. Corporation

Manufactured for  
**Valent U.S.A. Corporation**

P.O. Box 8025  
Walnut Creek CA 94596-8025  
Made in U.S.A.  
Form 1621-E  
EPA Reg. No. 59639-120  
EPA Est. 11773-IA-01®, 39578-TX-01®, 5905-IA-01®

Information contained in this booklet is accurate at the time of printing. Since product testing is a continuous process, please read and follow the directions on the product label for the most current directions and precautionary statements.

Always check with your state to verify state registration status or call 800-89-VALENT (898-2536).



For state registration and/or supplemental labels, please call or visit us online.

*Products That Work, From People Who Care*® | [valentpro.com](http://valentpro.com) | 800-89-VALENT (898-2536)

**Always read and follow label instructions.**

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# Specimen Label

## RESTRICTED USE PESTICIDE

May Injure (Phytotoxic) Susceptible, Non-Target Plants. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification. Commercial certified applicators must also ensure that all persons involved in these activities are informed of the precautionary statements.



Dow AgroSciences



## SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

For control of susceptible broadleaf weeds, woody plants and vines on rangeland and permanent grass pastures, fallow cropland, Conservation Reserve Program (CRP) acres, non-crop areas including forest planting sites, industrial manufacturing sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, and wildlife openings in forest and non-crop areas

Not for Sale, Distribution, and/or Use in Nassau and Suffolk Counties of New York State.

Not for sale or use in the San Luis Valley of Colorado.

Use in Hawaii limited exclusively to Supplemental Labeling.

See "Use Restrictions" for details.

GROUP	4	HERBICIDE
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### Active Ingredient:

picloram: 4-amino-3,5,6-trichloropicolinic acid, potassium salt .....	24.4%
Other Ingredients .....	75.6%
Total Ingredients .....	100.0%

### Acid Equivalent

picloram: 4-amino-3,5,6-trichloropicolinic acid - 21.1% - 2 lb/gal

## Precautionary Statements

### Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-6

## CAUTION

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing. Prolonged or frequent repeated skin contact may cause allergic skin reactions in some individuals.

### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- 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 WPS (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 thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
- 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.

## First Aid

**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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

## Environmental Hazards

This pesticide is toxic to some plants at very low concentrations. Non-target plants may be adversely affected if pesticide is allowed to drift from areas of application. 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. Do not contaminate water used for irrigation or domestic purposes by cleaning of equipment or disposal of wastes. Do not allow run-off or spray to contaminate wells, irrigation ditches or any body of water used for irrigation or domestic purposes. Do not make application when circumstances favor movement from treatment site.

Picloram is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, picloram may also have a high potential for runoff into surface water (primarily via dissolution in runoff water). These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas over-laying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-laying tile drainage systems that drain to surface water.

## Directions for Use

### RESTRICTED USE PESTICIDE

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

Read all Directions for Use carefully before applying.

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. 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 made of any waterproof material
- 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.

**Entry Restrictions for Non-WPS Uses:** For applications on rangeland, permanent grass pastures, and non-cropland, do not enter or allow worker entry into treated areas until sprays have dried, unless applicator and other handler PPE is worn.

### Storage and Disposal

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

**Pesticide Storage:** If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized material prior to use.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

#### Nonrefillable containers 5 gallons or less:

**Container Handling:** 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 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. **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 containers larger than 5 gallons:

**Container Handling:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. If the container cannot be refilled, follow cleaning instructions for nonrefillable containers.

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.

#### Nonrefillable containers larger than 5 gallons:

**Container Handling:** 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.

### Product Information

Use Tordon® 22K herbicide to control noxious, invasive, or other broadleaf weeds and listed woody plants and vines on rangeland and permanent grass pastures, fallow cropland, Conservation Reserve Program (CRP) acres, non-crop areas including forest planting sites, industrial manufacturing sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, and wildlife openings in forest and non-crop areas.

### Use Precautions

- **Use this product only as specified on this label or EPA-accepted Dow AgroSciences supplemental labeling.** Observe any special use and application restrictions and limitations, including method of application and permissible areas of use as promulgated by state or local authorities.
- **To prevent damage to crops and other desirable plants, read and follow all directions and precautions on this label and container before using.**
- **Grass Tolerance:** Tordon 22K at rates over 1 quart per acre may suppress certain established grasses, such as bromegrass and blue gramma. However, subsequent grass growth should be improved by release from weed competition.

### Use Restrictions

- **Not for Sale, Distribution, and/or Use in Nassau and Suffolk Counties of New York State.**
- **Not for sale or use in the San Luis Valley of Colorado.**
- **Use In Hawaii:** In Hawaii, approved uses of Tordon 22K are limited to those described in Supplemental Labeling which may be obtained from your Dow AgroSciences representative or chemical dealer. Refer to the Supplemental Labeling for specific use directions and precautions.
- **Do not use this product for impregnation of dry fertilizer, unless otherwise specified in use directions on Dow AgroSciences supplemental labeling.**
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Maximum Use Rates:**
  - **Non-cropland Areas:** Total use of Tordon 22K, including retreatments or spot treatments, must not exceed 1.0 lb a.i. picloram (2 quarts) per acre per annual growing season on rights-of-way and other non-crop areas.
  - On forest sites, no more than 1.0 lb a.i. picloram (2 quarts) per acre may be applied within a period of 2 annual growing seasons.
  - **Rangeland and Permanent Grass Pastures:**
    - For control of noxious or invasive weeds as defined by federal, state, or local authorities, do not apply more than 1.0 lb active ingredient (2 quarts of Tordon 22K) per acre per annual growing season as a broadcast treatment. Spot treatments may be applied at the equivalent broadcast rate of up to 1.0 lb active ingredient (2 quarts) per acre.
    - For control of other broadleaf weeds and woody plants, do not apply more than 0.5 lb active ingredient (1 quart of Tordon 22K) per acre per annual growing season. Spot treatments may be applied at an equivalent broadcast rate of up to 1.0 lb active ingredient (2 quarts) per acre per annual growing season, but not more than 50% of an acre may be treated. Repeat treatments may be applied as necessary, but total use must not exceed the maximum amount specified.
  - **Fallow Cropland (Not Rotated to Broadleaf Crops):** Do not apply more than 0.25 lb a.i. picloram (1 pint) per acre as a broadcast treatment per annual growing season.
  - **Conservation Reserve Program (CRP) for Seeding to Permanent Grasses Only:** Do not broadcast apply more than 0.5 lb active ingredient (1 quart) per acre of Tordon 22K per annual growing season or apply more than 1.0 lb active ingredient (2 quarts) per acre per annual growing season as a spot application. **To reduce potential damage to subsequent small grain crops, use the lower rate or discontinue the use of Tordon 22K at least 2 years prior to the seeding of small grain crops. After CRP, do not plant broadleaf crops in treated acres until an adequately sensitive bioassay (such as planting strips of the intended broadleaf crop in the treated area) shows that no detectable picloram is present in the soil.**
- **Do not apply to areas that may be rotated to any broadleaf crop.**
- **Do not use manure** from animals grazing treated areas or feeding on treated hay on land used for growing broadleaf crops, ornamentals, orchards or other susceptible, desirable plants. Manure may contain enough picloram to cause injury to susceptible plants.
- **Do not use grass or hay** from treated areas for composting or mulching of susceptible broadleaf plants or crops.
- **Do not transfer livestock** from treated grazing areas (or feeding of treated hay) onto sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated grass pasture (or feeding of untreated hay). Otherwise, urine and manure may contain enough picloram to cause injury to sensitive broadleaf plants.
- **Do not contaminate water intended for irrigation or domestic purposes.** To avoid injury to crops or other desirable plants, do not treat or allow spray drift or run-off to fall onto banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- **Do not use on flood or sub-irrigated land** (such as pastures/meadows areas irrigated by periodic flooding or a shallow water table).

- **Do not rotate to food or feed crops** on treated land if they are not registered for use with picloram until an adequately sensitive bioassay or chemical test shows that no detectable picloram is present in the soil.
- **Do not spray if the loss of forage legumes, including clover cannot be tolerated.** Tordon 22K may injure or kill legumes. New legume seedlings may not grow for several years following application of this herbicide.
- **Do not apply** to snow or frozen ground. Application during very cold (near freezing) weather is not advisable.
- **Do not apply Tordon 22K on residential or commercial lawns or near ornamental trees and shrubs.** Untreated trees can occasionally be affected by root uptake of herbicide through movement into the topsoil or by excretion of the product from the roots of nearby treated trees. Do not apply Tordon 22K within the root zone of desirable trees unless such injury can be tolerated.
- **Do not move treated soil** to areas other than sites for which Tordon 22K is registered for use. Also, do not use treated soil to grow plants for which use of Tordon 22K is not registered until an adequately sensitive bioassay or chemical test shows that no detectable residue of picloram is present in the soil.
- **Do not make application when circumstances favor movement from treatment site.**
- Do not apply this product through a mist blower.
- **Grazing Restrictions:**
  - Meat animals grazing for up to two weeks after treatment should be removed from treated areas three days prior to slaughter.
  - Do not graze lactating dairy animals on treated areas within two weeks after treatment.
  - When applying more than 0.5 lb a.i. picloram (1 quart of Tordon 22K) per acre, do not cut grass for feed within two weeks after treatment. There are no restrictions for rates below 1 quart per acre.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.

### Precautions for Avoiding Spray Drift

**Do not apply or otherwise permit Tordon 22K or sprays containing Tordon 22K to contact crops or other desirable broadleaf plants,** including but not limited to alfalfa, beans, grapes, melons, peas, potatoes, safflower, soybeans, sugar beets, sunflower, tobacco, tomatoes, and other vegetable crops, flowers, fruit plants, ornamentals or shade trees or the soil containing roots of nearby valuable plants.

Avoid spray drift. Exposure to very small quantities of spray or drift, which may not be visible, may cause serious injury to susceptible plants during active growth or dormant periods. To minimize spray drift, use low nozzle pressure; apply as a coarse spray; and use nozzles designed for herbicide application that do not produce a fine droplet spray. To aid in further reducing spray drift, a drift control or deposition aid may be used with this product, especially when water alone is used as the carrier. If a drift control aid is used, follow all use recommendations and precautions on the product label. Do not use a thickening agent with Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays.

**Ground Equipment:** With ground equipment spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's recommended minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to air inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift. A drift control or deposition aid may be used to further reduce the potential for drift.

**Aerial Application:** 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 operating nozzles on the boom must not exceed 3/4 the length of the wingspan or 90% of rotor width.
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 should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. [This information is advisory in nature and does not supersede 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 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 direction of air flow 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 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 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 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 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 the 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).

## Woody Plants and Broadleaf Weeds Controlled

### Woody Plants and Vines:

acacia, blackbrush	guava	poplar spp.
acacia, catclaw	oaks	pine, pinyon
acacia, twisted	haw	plum, java
aspen	hemlock	rabbitbrush, Douglas
blackberry	hickory	rose, Macartney
broom, Scotch	huisache (suppression	rose, multiflora
buttonbush	only)junipers/cedars	sagebrush, fringed
cactus spp.	lantana	salmonberry
camelthorn	locust	sassafras
cedars (Juniper)	maple spp.	sourwood
chaparral spp.	mesquite	spruce
dogwood	oak spp.	sumac
Douglas fir	oak, live	tallowtree, Chinese
fir spp.	oak, poison	trumpet creeper
gorse	persimmon	willows
granjeno	pine	wormwood, absinth
guajillo		

### Annual and Perennial Broadleaf Weeds:

bindweed, field (p)	horsenettle, western (p)	ragweed, common (a)
bitterweed (a)	horsenettle, white (p)	ragweed, lanceleaf (a)
bouncingbet (a)	horseweed (a)	ragweed, western (a)
broomweed, annual (a)	ironweed (p)	ragwort, tansy (b)
buckwheat, wild (a)	knapweed, diffuse (a)	Russian thistle (a)
buffalobur (a)	knapweed, meadow (p)	sage Mediterranean (b)
bullnettle (p)	knapweed, Russian (p)	skeletonweed, rush (p)
bursage (a)	knapweed, spotted (p)	smartweed (a)
burweed (p)	knapweed,	snakeweed, broom (p)
cactus sp. (p)	suaresii (p)	sneezeweed, bitter (a)
cactus, cholla (p)	lambquarters (a)	sowthistle, perennial (p)
camphorweed (a)	larkspur, geyer (p)	spurge, leafy (p)
carrot, wild (b)	larkspur, plains (p)	St. Johnswort (p)
chicory (a)	larkspur, tall (p)	starthistle, Iberian (a)
cinquefoil, sulfur (p)	lettuce, prickly (a)	starthistle, purple (a)
clover (p)	licorice, wild (p)	starthistle, yellow (a)
cocklebur (a)	locoweeds (p)	sunflower (a)
coneflower,	loco, woolly (p)	tasajillo (p)
upright prairie (p)	loco, Wooten	thistles, annual
croton (a)	(garbancillo) (p)	or biennial,
crupina, common (a)	lupines (p)	including:
daisy, ox-eye (p)	marshelder	thistle, artichoke (b)
fleabane (a,b)	(sumpweed) (a)	thistle, bull (b)
dock, curly (p)	mayweed (a)	thistle, distaff (a)
garbancillo (Wooten	milkweed (p)	thistle, Italian (b)
loco) (p)	mullein (b)	thistle, musk (b)
goldaster, gray (p)	mustard, wild (a)	thistle, plumeless (b)
goldaster,	nightshade,	thistle, Scotch (b)
narrowleaf (p)	silverleaf (p)	thistles, perennial,
goldenrod,	parsnip, wild (b)	including
common (p)	pennycress (a)	thistle, Canada (p)
goldenweed,	pigweed (a)	thistle, wavy leaf (p)
Drummond (p)	pricklypear, plains (p)	toadflax, dalmation (p)
groundsel (p)	pricklypear,	toadflax, yellow (p)
henbane, black (a,b)	lindheimer (p)	yankeeweed (p)
horsenettle, Carolina (p)	ragweed, bur (a)	

### Weed Resistance Management

Picloram, the active ingredient in this product, is a Group 4 synthetic auxin herbicide based on the mode of action classification system of the Weed Science Society of America. The occurrence of herbicide resistance is not as common in this mode of action group, as other, more specific mode of action groups. However, any weed population could develop plants that are resistant to herbicides with frequent, continued use. Such resistant weed plants may be effectively managed utilizing other herbicides alone or in mixtures from a different herbicide mode of action group (that are labeled for control of these weeds on these sites) and/or by using cultural or mechanical practices. Consult your local company representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

**Best Management Practices:** Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management

program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistant weeds. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant weed populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in reducing the spread of resistant weed seed.

### Non-Cropland Areas

Use Tordon 22K to control susceptible broadleaf weeds and woody plants on non-cropland areas such as roadsides or other rights-of-way, fence rows, and around farm buildings. Up to 2 quarts of Tordon 22K per acre may be applied. For general non-crop weed and brush control, see the Rangeland and Permanent Grass Pastures section for specific target weed or woody plant species treatment instructions. See specific use directions for Forest Site Preparation below.

### Broadcast Treatments for Forest Site Preparation (Not for Conifer Release)

For broadcast applications apply the specified rate of Tordon 22K in a total spray volume of 5 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. Use spray volumes sufficient to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives that produce larger droplets may require higher spray volumes to provide adequate coverage.

**Southern States (Alabama, Arkansas, Delaware, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia):** To control susceptible woody plants and broadleaf weeds, apply Tordon 22K at a rate of 2 quarts per acre.

- To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 2 quarts per acre of Tordon 22K in tank mix combination with 2 to 4 quarts of Garlon 4 herbicide.
- Where grass control is desired, Tordon 22K, alone or in combination with Garlon 4 herbicide, may be tank mixed with 1 to 4 quarts per acre of Accord or Roundup herbicides, or 8 to 16 fluid ounces per acre of Arsenal Applicator's Concentrate herbicide.
- Susceptible woody plants, broadleaf weeds and grasses may also be controlled using a tank mix of 2 quarts per acre of Tordon 22K with 3 to 5 quarts per acre of Accord or Roundup herbicides, or 16 to 24 fluid ounces of Arsenal Applicator's Concentrate. When applying tank mixes, follow use directions and precautions on each product label.

**In Western, Northeastern, and North Central and Lake States (States Not Listed Above As Southern States):** To control susceptible woody plants and broadleaf weeds, apply Tordon 22K at a rate of 1 to 2 quarts per acre.

- To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 1 to 2 quarts per acre of Tordon 22K in tank mix combination with 1.5 to 3 quarts per acre of Garlon 4 herbicide.
- Where grass control is also desired, Tordon 22K, alone or in tank mix combination with Garlon 4 may be applied with 1 to 3 quarts per acre of Accord or Roundup herbicide, 2 to 4 ounces per acre of Oust, a combination of Accord (or Roundup plus Oust at the rates listed, or 8 to 16 fluid ounces of Arsenal Applicator's Concentrate. When applying tank mixes, follow the use directions and precautions on each product label.

### Rangeland and Permanent Grass Pastures

Use Tordon 22K on rangeland and permanent grass pastures to control susceptible broadleaf weeds and woody plants including, but not limited to those shown in the following tables. Many annual weeds at the seedling stage can be controlled at the rate of 1 pt per acre. Where a rate range is specified, choose the higher rate for dense weed infestations, and for more dependable, longer lasting control. Lower rates will perform best when applied under favorable conditions and at the optimum growth stage, but may provide a lower level of control and require retreatment. For best results treat when weeds are small and actively growing in the spring before full bloom, however, certain weeds may also be treated in late summer to fall. Treatments during full bloom or seed stage of some weeds may not provide acceptable control.

**Table 1: Rate Instructions for Noxious, Invasive, or Other Weed Species Predominant in the Plains and Northern States.**

Weed Species	Broadcast Application (Rate/acre)	Specific Use Directions
<b>Annual and Biennial Weeds:</b>		
bursage (bur ragweed) crupina, common henbane, black horseweed starthistle, Iberian starthistle, purple starthistle, yellow	1 to 2 pt Tordon 22K	Apply when there is adequate soil moisture and weeds are actively growing.
thistles, including, bull distaff Italian musk plumeless scotch	<b>Fall:</b> 1/2 to 3/4 pt Tordon 22K <b>Spring:</b> 1/2 to 3/4 pt Tordon 22K + 1 lb ae 2,4-D	<b>General:</b> Apply at the rosette stage before bolting in the spring or in the fall prior to soil freeze up. <b>Distaff Thistle:</b> Apply at rosette stage in spring only. <b>Bolted Musk Thistle:</b> Apply before flowering at the rate of 3/4 to 1 pt of Tordon 22K + 1 lb ae of 2,4-D/acre.
Mullein, common	1 to 1.5 pt Tordon 22K + 1 lb ae 2,4-D	<b>Apply at the rosette stage with surfactant and use at least 30 gallons per acre of water carrier.</b>
<b>Perennial Weeds:</b>		
pricklypear, plains	1/2 to 1 pt Tordon 22K	Apply at peak of flowering. Use of an oil-water emulsion spray mixture may improve control. Lower rate will provide partial control (stand reduction) and high rate more complete control. Treatment response is slow and may continue for 2 years or longer.
sagebrush, fringed	1/2 to 1 pt Tordon 22K + 1 lb ae 2,4-D ester	Apply after seed stalk elongation and early flowering and throughout the summer if growing conditions are favorable.
cinquefoil, sulfur larkspur, geyer larkspur, plains locoweeds snakeweed, broom	1 pt Tordon 22K	<b>General:</b> Apply when weeds are actively growing. <b>Sulfur cinquefoil:</b> Apply during active growth or fall regrowth. <b>Geyer larkspur:</b> Apply when plant is actively growing between rosette stage and flower bud formation. <b>Locoweeds:</b> Apply from early bud to early bloom stage. <b>See Use Restrictions for note on grazing treated poisonous plants.</b> <b>Broom snakeweed:</b> Apply during active growth between full leaf to early bloom stage.
burweed daisy, ox-eye goldenrod, common knapweed, diffuse knapweed, meadow knapweed, spotted knapweed, squarrose rabbitbrush, Douglas sage, Mediterranean thistle, artichoke thistle, Canada thistle, wavy leaf wormwood, absinth	1 to 2 pt Tordon 22K	<b>General:</b> Apply during active growth prior to bud stage. Lower rates in rate range may require annual spot treatments. Control with lower rates may be improved by tank mixing with 1 lb ae per acre of 2,4-D. <b>Diffuse or spotted knapweed:</b> Optimum time for application is from rosette to mid-bolting stage or when applied to fall regrowth. Under favorable growing conditions, application in summer can be effective if higher application volumes are used. <b>Thistle (Canada and Wavy Leaf):</b> Apply when most basal leaves have emerged, but before bud stage, or apply to regrowth in the fall. Apply rates less than 1.5 pt/acre only under favorable conditions and in combination with 1 lb ae/acre of 2,4-D. Retreatment may be required. <b>Absinth wormwood:</b> Apply in spring or early summer when plants are actively growing. <b>Oxeye Daisy:</b> Use 1.5 to 2 pt/acre with at least 30 gallons per acre of water.
licorice, wild milkweed	2 pt Tordon 22K	<b>Wild Licorice:</b> Apply at bloom stage. <b>Milkweed:</b> Treat during active growth and tank mix specified rate of Tordon 22K with 1 lb ae/acre 2,4-D and surfactant.
bindweed, field gorse lupines knapweed, Russian ragwort, tansy skeletonweed, rush spurge, leafy St. Johnswort toadflax, dalmation	2 to 4 pt Tordon 22K	<b>General:</b> Annual retreatment of these species will be required at rates at low end of rate range. Control at low end of rate range may be improved by tank mixing with 1 lb ae/acre 2,4-D. <b>Russian Knapweed:</b> Apply during active growth from bud to mid-flowering, or to fall regrowth. <b>Leafy Spurge:</b> Apply at true flower stage of growth or apply to fall regrowth. Re-apply when level of control falls below 80 percent. <b>Dalmation Toadflax:</b> Apply in the fall or summer when plants are actively growing through full bloom stage of growth.
larkspur, tall sowthistle, perennial toadflax, yellow	4 pt Tordon 22K	<b>General:</b> A retreatment program may be necessary for satisfactory control of these species. <b>Tall Larkspur:</b> For best results apply from 6 inches tall to late bloom stage. For increased control, apply in tank-mix with Ally or Escort herbicide and non-ionic surfactant. <b>See Use Restrictions for note on grazing treated poisonous plants.</b>

**Table 1: Rate Instructions for Noxious, Invasive, or Other Weed Species Predominant in the Plains and Northern States. (Cont.)**

Weed Species	Broadcast Application (Rate/acre)	Specific Use Directions
<b>Woody Plants:</b>		
juniper	4 qt Tordon 22K per 100 gallons of spray †	† Apply as a high volume foliar spray / individual plant treatment
redcedar, eastern	Eastern redcedar can be controlled with spot concentrate applications of Tordon 22K in either the spring (April-May) or fall (September-October). For best results, use 3 ml to 4 ml of Tordon 22K ( <b>undiluted</b> ) per 3 feet of plant height. Application should precede periods of expected rainfall. Apply directly to soil within the dripline and on the upslope side of the tree. For best results, apply to trees under 15 feet in height. <b>Do not</b> use more than 2 pt of Tordon 22K per acre in any one year.	

**Table 2: Rate Instructions for Broadleaf Weeds and Woody Species in the Southern U.S. (Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia)**

Tordon 22K can be applied alone or in combination with 2,4-D amine or ester or other products labeled for rangeland and pastures to enhance control of certain species. When Tordon 22K is applied alone, herbicide symptoms will appear more slowly than when tank mixed with 2,4-D.

Weed Species	Broadcast Application (Rate/acre)	Specific Use Directions
<b>Annual and Biennial Weeds:</b>		
bitterweed, western broomweed, annual buffalobur bursage (bur ragweed) camphorweed carrot, wild cocklebur croton horsetweed lettuce, prickly ragweed, common ragweed, lanceleaf smartweed sneezeweed, bitter sunflower thistle, bull thistle, musk	<b>Early Season</b> 3/4 - 1 1/2 pt Tordon 22K  <b>Mid to Late Season</b> 1 to 2 pt Tordon 22K	<b>General:</b> Apply when there is adequate soil moisture and weeds are actively growing. <b>Early Season:</b> Apply only for very early in the season when weeds are no more than 2 to 3 inches tall. <b>Mid to Late Season:</b> Apply to weeds from 3 inches tall to early flowering. <b>Thistles:</b> Apply the lower rate in the rate range when thistles are in the rosette stage before bolting. When bolting, increase rate and add 2,4-D. <b>Lanceleaf Ragweed:</b> Use the higher rate within the specified rate range.
<b>Perennial Weeds:</b>		
snakeweed, broom	<b>Fall, Early Winter</b> 1 pt Tordon 22K	<b>Fall and Early Winter:</b> If rainfall is less than average prior to flowering, apply after flowering is complete. If rainfall is average to above average prior to or during flowering, apply during full flower and/or active pollination, before resumption of new top growth.
bullnettle coneflower, upright prairie dock, curly horsenettle, Carolina horsenettle, western horsenettle, white ironweed nightshade, silverleaf ragweed, western yankeeweed	1 to 2 pt Tordon 22K	<b>General:</b> Apply when there is adequate soil moisture and weeds are actively growing. <b>Nettles and Silverleaf Nightshade:</b> Apply when plants begin to flower in spring. <b>Upright Prairie Coneflower:</b> Apply when plants are 2 to 6 in. tall, before flowering. <b>Curly Dock:</b> Apply up to bolting <b>Ironweed:</b> Apply up to bud stage. <b>Yankeeweed:</b> Apply when plants are 8 to 10 in. tall.
goldaster, gray goldaster, narrowleaf goldenweed, common goldenweed, Drummond (Isocoma spp.)	1 to 2 pt Tordon 22K	<b>Gray and Narrowleaf Goldaster:</b> Apply in oil-water emulsion in spring during bud stage (prebloom). Thorough coverage is essential. <b>Goldenweed:</b> Apply in spring (April-June) when there is substantial canopy development as a result of good growing conditions. Add an agricultural surfactant at 0.25%-0.5% or apply in oil-water emulsion. Increase spray volume, 4 to 5 gpa by air or 15 to 20 gpa by ground, to ensure thorough coverage.
Poisonous Plants such as groundsel (Senecio spp.) lambert crazyweed loco, woolly loco, Wooton (garbancillo)	1 1/2 to 2 pt Tordon 22K	<b>General:</b> Apply in fall or winter when there is adequate soil moisture and weeds are actively growing. Herbicide application may increase palatability of poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock. <b>See Use Restrictions for note on grazing treated poisonous plants.</b> <b>Locoweeds:</b> To improve wetting of locoweeds, use an agricultural surfactant at 0.25%-0.5% or apply in oil-water emulsion.

**Table 2: Rate Instructions for Broadleaf Weeds and Woody Species in the Southern U.S. (Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia) (Cont.)**

Tordon 22K can be applied alone or in combination with 2,4-D amine or ester or other products labeled for rangeland and pastures to enhance control of certain species. When Tordon 22K is applied alone, herbicide symptoms will appear more slowly than when tank mixed with 2,4-D.

Cactus	Broadcast Application (Rate/acre)	High Vol. Foliar (Rate/100 gal)	Specific Use Directions
cactus sp. cactus, cholla	--	4 qt Tordon 22K	Apply any time of the year with water and surfactant. Good coverage is essential.
<b>Woody Plants:</b>	<b>Note:</b> Consult local recommendations for specific rates within listed rate ranges.		
huisache (suppression)	2 pt Tordon 22K + 1 pt Remedy® Ultra	2 qt Tordon 22K + 1 qt Remedy Ultra	Fall application is recommended, however, fall applications will not provide satisfactory control of other woody species in the South Texas mixed brush complex. Performance can be erratic.
Juniper, including, alligator redberry Utah one-seeded eastern redcedar pinyon pine	--	4qt Tordon 22K	Apply May through July. Complete coverage is essential. Results with ashe juniper may be variable with high volume foliar application.
Pricklypear, lindheimer (unburned rangeland)	2 pt Tordon 22K	4 qt Tordon 22K	Application may be made anytime, but optimum time is late August to early November. Onset of herbicidal activity is very slow and may continue for two years or longer. Good coverage is essential.
Pricklypear, lindheimer (burned rangeland)	1 pt Tordon 22K	2 qt Tordon 22K	Conduct intense controlled burns from December through March and apply Tordon 22K mid-April through May. Rainfall following burning can also stimulate prolific resprouting of the burned plants. Good coverage is also essential.
Pricklypear, plains	1 1/2 to 2 pt Tordon 22K	4 qt Tordon 22K	Optimum time for treatment is during flowering. Control may be improved by use of an oil-water emulsion spray mixture. Lower rate will provide partial control (stand reduction) and high rate more complete control. Treatment response is slow and may continue for 2 years or longer.
Rose, Macartney rose, multiflora	1 qt Tordon 22K + 2 lb ae 2,4-D	1 to 2 qt Tordon 22K + 2 to 4 lb ae 2,4-D	Apply in the spring or fall when conditions are favorable for plant growth. Use an agricultural surfactant (0.5% v/v) or apply as an oil-water emulsion. Ensure thorough and uniform coverage by applying at higher spray volume, 5 or more gpa by air or 20 or more gpa by ground. Avoid treatment less than 9 to 12 months after mowing when plants have a high percentage of new growth. Repeat treatment as necessary.
Tallowtree, Chinese	1 qt Tordon 22K + 2 lb ae 2,4-D or 1 pt Remedy Ultra	2 qt Tordon 22K or 1 to 2 qt Tordon 22K + 2 to 4 lb ae 2,4-D or 1 qt Remedy Ultra	Apply in the spring or fall, when conditions are favorable for plant growth. Use an agricultural surfactant (0.5% vol/vol) or use an oil-water emulsion and higher spray volumes, 5 gpa or more by air and 20 gpa or more by ground.
South Texas mixed brush, including, acacia, blackbrush acacia, catclaw acacia, twisted granjeno guajillo mesquite prickly pear tasajillo	2 pt Tordon 22K + 1.75 pt Sendero or 1 to 2 pt Remedy Ultra	2 qt Tordon 22K + 2 to 3 pt Remedy Ultra or 3.5 pt Sendero†	Apply in of oil-water emulsion. Use 4 or more gpa by air or 20 or more gpa by ground. For application timing for mesquite, see comments in section on mesquite control. Tank mixing Tordon 22K with Sendero® will provide improved control of pricklypear and legume species such as mesquite and acacias while tank mixing with Remedy® Ultra will provide improved control of non-legume species such as granjeno, oaks, and hackberry. † Assumes a delivery volume of 50 gpa of mixture, if delivery volume is higher or lower, adjust the amount per 100 gallons to achieve the rate indicated in Broadcast Application (Rate/acre) column.
mesquite	1 to 2 pt Tordon 22K + 1.75 pt Sendero or 2 pt Tordon 22K + 1 pt Remedy Ultra	1 to 2 qt Tordon 22K + 3.5 pt Sendero† or 1 1/2 to 3 pt Remedy Ultra	<b>Tordon 22K Alone:</b> Apply as a water spray or oil-water emulsion (see Mixing Instructions) in 4 or more gpa by air or 10 or more gpa by ground. Increase spray volumes with increasing brush density and height to ensure adequate coverage. Where control of pricklypear cactus is desired, use the 2 pt/acre rate of Tordon 22K. † Assumes a delivery volume of 50 gpa of mixture, if delivery volume is higher or lower, adjust the amount per 100 gallons to achieve the rate indicated in Broadcast Application (Rate/acre) column.

**Table 2: Rate Instructions for Broadleaf Weeds and Woody Species in the Southern U.S. (Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia) (Cont.)**

Tordon 22K can be applied alone or in combination with 2,4-D amine or ester or other products labeled for rangeland and pastures to enhance control of certain species. When Tordon 22K is applied alone, herbicide symptoms will appear more slowly than when tank mixed with 2,4-D.

Cactus	Broadcast Application (Rate/acre)	High Vol. Foliar (Rate/100 gal)	Specific Use Directions
<p><b>Tordon 22K in Tank Mix:</b> Tank mixing with Sendero will provide control of pricklypear and improved control of legume species such as mesquite and acacias while tank mixing with Remedy Ultra will provide improved control of non-legume species such as granjeno, oaks and hackberry. Regrowth mesquite should be at least 4 ft tall prior to treatment. See labels for Sendero and Remedy Ultra for additional treatment instructions and information on mesquite control. Within rate ranges given for Tordon 22K and tank mix products, consult local recommendations.</p> <p><b>Timing and Factors in Control:</b> The herbicidal response of mesquite is strongly influenced by environmental conditions as well as foliage condition and stage of growth. For best results, apply when new growth foliage has turned from light to dark green, when the soil temperature has reached 75°F to 83°F at a depth of 12 to 18 inches, and soil moisture is adequate for plant growth. Application should be made within 45 days after the critical soil temperature at the 12 to 18 inch depth has been reached or, if Tordon 22K is applied in combination with Sendero, within 60 days. Product performance may be adversely affected if 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. Do not apply if mesquite exhibits new (light green) growth in response to significant rainfall during the growing season. Soil temperatures at the 12 to 18 inch depth may vary with soil texture and drainage. Coarse-textured (sandy) soils warm up sooner than fine-textured soils (clay) soils and dry soils warm up more quickly than wet soils.</p> <p><b>Re-application:</b> Do not reapply in the same growing season. Retreatment will not be effective until woody plants develop sufficient new foliage for interception, uptake, and translocation of the herbicide to plant roots.</p>			

**Spot Concentrate Application for Juniper Control**

<p>ashe juniper eastern redcedar eastern persimmon</p>	<p><b>General:</b> Apply Tordon 22K undiluted as a spot concentrate application prior to periods of expected rainfall. Apply directly to the soil within the dripline and on the upslope side of the tree. For best results, apply to trees under 12 feet in height. See directions for "Soil Spot Concentrate" in "Application Methods" section.</p> <p><b>Ashe Juniper:</b> Apply 4 to 6 ml per 3 ft of plant height in the spring (April-May)</p> <p><b>Eastern Redcedar:</b> Apply 3 to 4 ml per 3 ft of plant height in either spring (April-May) or fall (September-October)</p> <p><b>Eastern Persimmon:</b> Apply 2 to 4 ml per inch of stem diameter in spring (March through May)</p>
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**Seeding to Permanent Grasses, Including Conservation Reserve Program (CRP) Acres**

**Newly Seeded Grasses:**

Tordon 22K should be applied only after perennial grasses are well established as indicated by development of a good secondary root system and vigorous growth (usually 45 to 60 days after planting). Most perennial grasses show improved tolerance to the post emergence applications at this stage of development. Generally, wheatgrass species are more tolerant to Tordon soil residues.

For best results, apply to actively growing weeds in a spray volume of 2 or more gallons of water per acre by air or 10 or more gallons of water per acre by ground. Refer to the weeds rate chart for information on target weed species and application rates.

**Perennial Broadleaf Weeds:** Apply Tordon 22K to actively growing perennial broadleaf weeds at up to 2 pints per acre after the grass is well established. Risk of grass injury is greatest when using the maximum of 2 pint per acre rate.

**Annual Broadleaf Weeds:** Apply Tordon 22K at 1/2 to 3/4 pint per acre to actively growing susceptible annual broadleaf weeds, (including Russian thistle). Tordon 22K can also be tank mixed with 1/2 to 1 pound ae per acre of 2,4-D where 2,4-D sensitive species are present. Read and follow all directions for use and use precautions on other product labels.

**Weed Control Prior to Seeding Cool Season Perennial Grasses:** Weed control with Tordon 22K fits into grass re-vegetation programs where perennial range or reclamation grass species are to be established in non-cropland, rangeland, permanent grass pastures, or CRP areas. Tordon 22K may be applied in the spring or early summer, depending on the target weed species, and grass seed planted in the fall when conditions are favorable for grass establishment. Alternatively, Tordon 22K may be applied in the fall and grass seed planted in the winter or spring when conditions are favorable for grass establishment.

Apply Tordon 22K at 1 qt/acre or less. Refer to the weeds rate chart for information on target weed species and application rates. When Tordon 22K is applied at 1 qt/acre there may be temporary injury to new plantings of certain perennial grass species, depending on sensitivity. However, temporary grass injury will be more than offset by the benefits to grasses due to decreased weed competition. Germination of annual grass species may be suppressed after treatment.

To optimize weed control it is suggested the application area be disturbed as little as possible by the seeding operation. After application, the site should be left undisturbed for a minimum of 14 days prior to seedbed preparation or seeding. Potential for injury to sensitive grass species can be decreased by increasing the interval between application and seeding operations.

**Precautions:**

- Conditions that stress grasses, such as drought, will increase potential for injury to the grass at all stages of growth.
- **To reduce potential damage to subsequent small grain crops or grain sorghum (milo),** use the lower rate or discontinue the use of Tordon 22K at least 2 years prior to the seeding of small grain crops. After CRP, do not plant broadleaf crops in treated acres until an adequately sensitive bioassay shows that no detectable picloram is present in the soil.
- Tordon 22K at rates over 2 pints per acre may suppress certain established grasses such as bromegrass and blue gramma. However, subsequent grass growth should be improved by release from weed competition.

**Restrictions:**

- Do not use Tordon 22K if legumes are a desired cover during CRP.
- Do not rotate to grain sorghum (milo) if greater than 1 pint per acre of Tordon 22K has been applied. Do not plant grain sorghum within 8 months after application. Do not use this product for sweet sorghum production or on land that will be rotated to sweet sorghum.

**Fallow Cropland (Not Rotated to Broadleaf Crops)**

Apply Tordon 22K as a post harvest or fallow treatment in continuous grain or during the fallow period. Tordon 22K may be applied alone or in tank mix combination with 2,4-D or other herbicides registered for this use. Apply in 2 or more gallons of water per acre by air or 5 or more gallons per acre by ground.

**Application Rates**

**Annual Weeds:** To control annual weeds such as Russian thistle and wild buckwheat, apply 1/4 to 1/2 pint per acre of Tordon 22K in tank mix combination with 1/2 to 1 lb ae of 2,4-D or other herbicides registered for use on fallow land. Apply when weeds are actively growing.

**Field Bindweed:** Apply 1/2 to 1 pint per acre of Tordon 22K plus 1/2 to 1 lb ae per acre of 2,4-D when bindweed is actively growing. Optimum time for treatment is when plant runners reach 8 to 12 inches. Use 1/2 pint per acre to control light to moderate infestations under good growing conditions or to reduce the potential for crop injury. Use 1 pint per acre for heavy infestations and to start a treatment program for long-term control. Some regrowth will occur the following season and a re-treatment program of 1/2 pint of Tordon 22K plus 1/2 lb ae of 2,4-D for one to two years will provide stand reduction.

**Canada thistle:** Apply 1 pint per acre of Tordon 22K plus 1 lb ae per acre of 2,4-D when the majority of thistle plants are emerged but prior to bud stage.

### Crop Rotation

Use only on land to be planted the following year to grass, barley, oats, wheat, grain sorghum (milo) or fallowed. Do not plant grain sorghum within 8 months after application. Do not use this product for sweet sorghum production or on land that will be rotated to sweet sorghum. Many broadleaf crops are extremely sensitive to soil residues of Tordon 22K. Do not plant sensitive broadleaf crops for 36 months after treatment or until soil residues have declined to a safe level as indicated by an adequately sensitive bioassay using the intended broadleaf crop. A bioassay is recommended following treatment prior to planting any sensitive broadleaf crop.

### Preplant Interval

A preplant interval following application of Tordon 22K prior to planting small grains is recommended to reduce or eliminate potential crop injury and/or yield reduction. The possibility for crop injury or yield reduction to occur depends on application rate, soil organic matter, rainfall, temperature and incidence of cereal diseases. Adequate soil moisture and soil temperature during the preplant interval is important in reducing, but may not eliminate, the risk of crop injury. When considering use of Tordon 22K on fallow land, growers should consider the benefit of weed control against the risk of crop damage and treat only if the risk of injury to small grains can be tolerated. The following preplant intervals are recommended:

For applications up to 1/2 pint per acre, allow a minimum of 45 days of soil temperatures above 40°F between application and planting.

For applications of greater than 1/2 pint and up to 1 pint per acre, allow a minimum of 60 days of soil temperatures above 40°F between application and planting, except in the states of Idaho, North Dakota, Nebraska, Montana, Oregon, South Dakota, Washington and Wyoming, where the minimum preplant interval is 90 days.

### Restrictions:

- Do not apply more than 1 pint per acre as a broadcast treatment per annual growing season.
- **Spot Treatment:** See "Spot Treatment" in "Mixing and Application Methods" section for directions for calibration, spray volume determination and mixing. Spot treatments of Tordon 22K at rates over 1 pint per acre can be made on fallow, non-irrigated cropland if the treated areas comprise less than 10% of the immediate field in any one year. Do not apply Tordon 22K to cropland at rates exceeding 2 quarts per acre. When Tordon 22K is applied at rates above 1 pint per acre, injury to small grains may result for periods up to two years after treatment.

## Mixing and Application Directions

### Mixing Instructions

Mix the required amount of Tordon 22K in water and apply as a coarse, low-pressure spray using ground equipment or aircraft. Use enough spray volume to provide uniform coverage of the weeds.

**Use with Surfactants:** Under certain conditions, such as drought or dusty plant surfaces, the addition of a surfactant may improve efficacy. However, if foliar burn occurs too rapidly, translocation of Tordon 22K will be impaired and control of perennial weeds, such as field bindweed, may be reduced.

### Mixing with Water

To prepare the spray, add about half the desired amount of water in the spray tank. Then with agitation, add the specified amount of Tordon 22K and other registered tank mix herbicides. Finally, with continued agitation, add the rest of the water and additives such as surfactants or drift control and deposition aids.

### Mixing Oil-Water Emulsions (Ground and Aerial Applications)

For aerial application, add oil to the total spray mix at the ratio of 1 part oil to 5 parts water (1:5 ratio). For ground application, add oil to the spray mix at a rate of 5 to 10% of the total mix. **Do not use more than 1 gallon of oil per acre for aerial or ground application.** Use agricultural spray emulsifiers such as Sponto 712 or Triton X-100 according to mixing instructions given below.

### Batch Mixing Instructions

With continuous, vigorous agitation:

1. Add half the amount of water to be used to the spray tank.
2. Add the required amount of water-soluble herbicides such as Tordon 22K, Garlon 3A, Sendero herbicide or 2,4-D Amine.
3. With continued, vigorous agitation slowly add a premix of oil, emulsifier and oil soluble herbicides such as Garlon 4, Remedy® Ultra herbicide or a 2,4-D ester as required. **Note:** Do not add water or mixtures

containing water to the premix or oil soluble herbicide since a thick "invert" (water in oil) emulsion may be formed that will be difficult to break. An invert emulsion will also form if the premix is added to the mixing tank before the addition of water.

4. Finish filling the spray tank and maintain sufficient agitation to ensure uniformity of the spray mixture during application.

### Invert Emulsions (Non-food Crop Use Only)

Tordon 22K may be applied with an approved inverting agent to provide a thick invert water-in-oil spray emulsion designed to minimize spray drift. Consult use directions on the label for inverting agent. Invert emulsions may be used only for non-food uses.

Where root-suckering species such as sumac, sassafras, locust, and black gum predominate, mix the inverting agent as directed by its use directions plus 1 1/2 quarts Tordon 22K with 9 gallons of water for each acre to be sprayed.

Where harder-to-control species such as red maple, elm, or oaks are present, mix 5 to 6 gallons of the inverting agent as directed by its use directions plus 1 to 2 quarts of Tordon 22K with 15 to 18 gallons of water for each acre to be sprayed.

### Mixing With Sprayable Liquid Fertilizer Solutions

Tordon 22K is compatible with most non-pressurized liquid fertilizer solutions; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank. **Note:** The lower the temperature of the liquid fertilizer, the greater the likelihood mixing problems. Use of a compatibility aid such as Unite or Compex may help obtain and maintain a uniform spray solution during mixing and application. Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K fertilizer solutions or suspensions is more difficult and should not be attempted without first conducting a successful jar test. Agitation in the spray tank must be vigorous to be comparable with jar test agitation. For best results, liquid fertilizer rates should not exceed 50% of the total spray volume. Premix Tordon 22K with water and add to the liquid fertilizer/water mixture while agitating contents of the spray tank. Apply the spray the same day it is prepared while maintaining continuous agitation. Rinse spray tank thoroughly after use.

**Note:** Foliar applied liquid fertilizers used as carrier for Tordon 22K can cause yellowing or leaf burn of grass foliage.

### Tank Mixing

Tordon 22K may be applied in tank mix combination with labeled rates of 2,4-D or other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

### Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on 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.
  - For products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See "Sprayer Clean-Out" below.)
  - For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Note:** Undiluted Tordon 22K can be incompatible with certain amine formulations of 2,4-D. This incompatibility can usually be overcome by diluting one or both products with 50% water prior to mixing.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of Tordon 22K and other pesticides or carriers. Use a clear glass jar with lid and mix the tank mix ingredients in their relative proportions. The tank mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 30 minutes or, if separation occurs, should readily mix if agitated. An incompatible mixture is indicated by separation into distinct layers which do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film on the jar.

**Do not** use spray equipment used to apply Tordon 22K for other applications to land planted to, or to be planted to susceptible crops or desirable sensitive plants, unless it has been determined that all phytotoxic residue of this herbicide has been removed by thorough cleaning of equipment.

Local conditions may affect the use of herbicides. State agricultural experiment stations or extension service weed specialists in many states issue instructions to fit local conditions. Be sure that use of this product conforms to all applicable regulations.

**Sprayer Clean-Out**

To avoid injury to desirable plants, equipment used to apply Tordon 22K herbicide should be thoroughly cleaned before reusing to apply any other chemicals.

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
2. Rinse a second time, adding 1 quart of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Nozzles and screens should be removed and cleaned separately.

**Application Methods**

**Ground or Aerial Broadcast**

Use Tordon 22K as a broadcast treatment by ground or by air to control listed broadleaf weeds and woody plants. Apply Tordon 22K as a coarse low-pressure spray at the specified rates in a spray volume of 2 or more gallons per acre by air or 10 or more gallons per acre by ground. For optimal results make ground applications of Tordon 22K in 15 or more gallons of total spray mixture per acre. For optimal results from aerial applications, use 5 to 20 gallons per acre of spray mixture.

**High-Volume Foliar Applications**

Spray to thoroughly wet foliage and stems of individual plants. An approved surfactant should be added at the manufacturer's recommended rate. Do not apply more than the maximum application rate of Tordon 22K specified for a given treatment site.

**Modified High Volume Applications**

For modified high volume leaf-stem treatments of woody brush mix 1 to 3 quarts of Tordon 22K in 100 gallons of water. To control a wider range of plant species, mix 1 to 3 quarts of Tordon 22K with 1-3 quarts of Garlon® 4 herbicide or 1 to 4 quarts of Garlon 3A herbicide and dilute to make 100 gallons of spray. Apply after the foliage is well developed and in a manner which thoroughly wets all leaves, stems, and root collars.

The amount of spray mixture applied per acre will vary with plant size and density. For optimal results, apply in a total spray volume of 40 to 60 gallons per acre. **Do not apply more than the maximum application rate of Tordon 22K specified for a given treatment site.**

**Spot Treatment**

Use application rates specified in the "Approved Uses" section of this label or specified by your area weed control specialist. Apply in a total spray volume of 20 to 100 gallons per acre. To prevent misapplication, spot treatments should be applied with a calibrated boom or with hand sprayers according to directions provided below. Do not exceed maximum application rates for Tordon 22K for a given treatment site. On rangeland and permanent grass pastures, spot treatments may be applied at an equivalent broadcast rate of up to 2 quarts per acre per annual growing season, but not more than 50% of an acre may be treated (unless the target weed is a noxious weed which allows higher broadcast use rates). Repeat treatments may be applied as necessary, but total use must not exceed the maximum amount specified.

**Hand-Held Sprayers:** Hand-held or backpack sprayers may be used for spot applications of Tordon 22K if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1,000 sq ft. Mix the amount of Tordon 22K (fl oz or ml) corresponding to the desired broadcast rate in 0.5 to 2.5 gallons of water, depending on the spray volume required to treat 1000 sq ft. To calculate the amount of Tordon 22K required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3,500 sq ft, multiply the table value by 3.5 (calc. 3,500 ÷ 1,000 = 3.5). An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Amount of Tordon 22K per 1,000 sq ft to Equal Specified Broadcast Rate					
1/4 pt/acre	1/3 pt/acre	1/2 pt/acre	2/3 pt/acre	1 pt/acre	1 qt/acre
1/10 fl oz † (2.7 ml)	1/8 fl oz (3.6 ml)	1/5 fl oz (5.4 ml)	1/4 fl oz (7.3 ml)	3/8 fl oz (11 ml)	3/4 fl oz (22 ml)

† 1 fl oz = 29.6 (30) ml

**Special Application Methods**

**Soil Spot Concentrate:** Tordon 22K may be applied undiluted as a spot concentrate application to control ashe juniper, eastern redcedar and eastern persimmon. (See specific use directions for these plant species under the Rangeland and Permanent Grass Pasture section of this label.) Applications should precede periods of expected rainfall. Apply directly to the soil within the dripline and on the upslope side of the tree. For best results, apply to trees under 12 feet in height.

**Broadcast Cut Stubble Treatment**

To prevent re-sprouting of susceptible woody species after mowing or hand cutting on non-crop areas and rights-of-way, use Tordon 22K herbicide at the rate of 2 quarts per acre in 15 or more gallons of a water spray mixture. Best results may be obtained when applications are made before or during periods of active root growth. Applications should not be made when the soil is frozen or covered by snow or standing water. Make applications soon after cutting, before sprouting of woody species has occurred. For best results, use the Brown Brush Monitor for this type of application.

**Special Ground Sprayer Equipment:** To control annual and perennial weed species using special low-volume, minimum drift equipment, such as the hooded Forage Chemical Mower, apply 1 to 2 pt of Tordon 22K in total volumes ranging from 1 gal to 5 gal per acre in water alone or as an oil-water emulsion at a 1:5 and 1:4 oil-to-water ratio for a 1 gal and 5 gal per acre solutions, respectively.

**Terms and Conditions of Use**

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

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Dow AgroSciences 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. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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It is impossible to eliminate all risks associated with use of this product. Crop 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 temperatures, 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 Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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To the extent permitted by law, 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 Dow AgroSciences' 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.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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### Revisions:

Final printed label based on EPA accepted copy dated September 28, 2017.

- Added restriction: "Not for Sale, Distribution, or Use in Nassau and Suffolk Counties of New York State."
- Directions for Use section: added "RESTRICTED USE PESTICIDE"
- Agricultural Use Requirements for label booklet: under PPE required for early entry, changed "waterproof gloves" to "chemical-resistant gloves made of any waterproof material."
- General/Product Information section:
  - o Divided Use Precautions and Restrictions into two sections.
  - o Added: "Not for Sale, Distribution, and/or Use in Nassau and Suffolk Counties of New York State."
- Use Restrictions: rephrased as, "Do not apply Tordon 22K" on residential or commercial lawns . . .
- Weed Resistance Management; Best Management Practices: add new section.
- Updated product name Remedy to Remedy Ultra throughout.
- Rangeland and Permanent Grass Pastures:
  - o Table 1: Under Woody Plants, clarified specific use directions for redcedar.
  - o Table 2: Replaced "Reclaim" with "Sendero" throughout table 2.
  - o Under Spot Concentrate Application for Juniper Control, clarified specific use directions.
- Fallow Cropland (Not Rotated to Broadleaf Crops): Spot Treatment: rephrased as, "Do not apply Tordon 22K to cropland . . ."
- Mixing and Application Directions
  - o Batch Mixing Instructions: replaced "Reclaim" with "Sendero."
  - o Invert Emulsions (Non-food Crop Use Only): removed references to product Envert 171.