

# 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.



# Tordon<sup>®</sup> 22K

## Specialty Herbicide

®Trademark of Dow AgroSciences LLC

**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**

### Active Ingredient:

picloram: 4-amino-3,5,6-trichloropicolinic acid,  
potassium salt ..... 24.4%

Inert Ingredients ..... 75.6%

Total Ingredients ..... 100.0%

### Acid Equivalent

picloram: 4-amino-3,5,6-trichloropicolinic acid - 21.1% - 2 lb/gal

EPA Reg. No. 62719-6

### 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.)

## Precautionary Statements

### Hazards to Humans and Domestic Animals

#### 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
- Waterproof gloves
- Shoes plus socks

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 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 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.
- 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.

**Note: Use in Hawaii limited exclusively to Supplemental Labeling. See "General Use Precautions" for details.**

**Notice:** Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

---

### 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 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
- Waterproof gloves
- Shoes plus socks

### Non-Agricultural Use Requirements

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

**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. Open dumping is prohibited.

**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 may be disposed of on site or at an approved waste disposal facility.

**Container Disposal (Metal): Do not reuse container.** Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Container Disposal (Plastic): Do not reuse container.** Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**General:** Consult federal, state or local disposal authorities for approved alternative procedures.

---

### General 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.

**This product is NOT for sale or use in the San Luis Valley of Colorado.**

### Use Precautions and Restrictions

**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.

**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 this Supplemental Labeling for specific use directions and precautions.

**To prevent damage to crops and other desirable plants**, read and follow all directions and precautions on this label and container before using.

**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.

**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.

**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.

**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.

**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.

**Precautions for Avoiding Injury to Non-target Plants**

- **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.
- **Tordon 22K should not be applied 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.

**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	gums	pine, pinyon
acacia, twisted	haw	plum, java
aspen	hemlock	rabbitbrush, Douglas
blackberry	hickory	rose, Macartney
broom, Scotch	huisache (suppression only)	rose, multiflora
buttonbush	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	trumpetcreeper
gorse	persimmon	willows
granjeno	pine	wormwood, absinthe
guajillo		

### Annual and Perennial Broadleaf Weeds:

bindweed, field (p)	horsenettle, white (p)	ragweed, western (a)
bitterweed (a)	horseweed (a)	ragwort, tansy (b)
bouncingbet (a)	ironweed (p)	Russian thistle (a)
broomweed, annual (a)	knapweed, diffuse (a)	sage Mediterranean (b)
buckwheat, wild (a)	knapweed, meadow (p)	skeletonweed, rush (p)
buffalobur (a)	knapweed, Russian (p)	smartweed (a)
bullnettle (p)	knapweed, spotted (p)	snakeweed, broom (p)
bursage (a)	knapweed, squarrose (p)	sneezeweed, bitter (a)
burweed (p)	lambquarters (a)	sowthistle, perennial (p)
cactus sp. (p)	larkspur, geyer (p)	spurge, leafy (p)
cactus, cholla (p)	larkspur, plains (p)	St. Johnswort (p)
camphorweed (a)	larkspur, tall (p)	starthistle, Iberian (a)
carrot, wild (b)	lettuce, prickly (a)	starthistle, purple (a)
chicory (a)	licorice, wild (p)	starthistle, yellow (a)
cinquefoil, sulfur (p)	locoweeds (p)	sunflower (a)
clover (p)	loco, woolly (p)	tasajillo (p)
cocklebur (a)	loco, Wooten (garbancillo) (p)	thistles, annual or biennial, including:
coneflower, upright prairie (p)	lupines (p)	thistle, artichoke (b)
croton (a)	marshelder (sumpweed) (a)	thistle, bull (b)
crupina, common (a)	mayweed (a)	thistle, distaff (a)
daisy, ox-eye (p)	milkweed (p)	thistle, Italian (b)
fleabane (a,b)	mullein (b)	thistle, musk (b)
dock, curly (p)	mustard, wild (a)	thistle, plumeless (b)
garbancillo (Wooten loco) (p)	nightshade, silverleaf (p)	thistle, Scotch (b)
goldaster, gray (p)	parsnip, wild (b)	thistles, perennial, including
goldaster, narrowleaf (p)	pennycress (a)	thistle, Canada (p)
goldenrod, common (p)	pigweed (a)	thistle, wavy leaf (p)
goldenweed, Drummond (p)	pricklypear, plains (p)	toadflax, dalmation (p)
groundsel (p)	pricklypear, lindheimer (p)	toadflax, yellow (p)
henbane, black (a,b)	ragweed, bur (a)	yankeeweed (p)
horsenettle, Carolina (p)	ragweed, common (a)	
horsenettle, western (p)	ragweed, lanceleaf (a)	

(a) - annual; (b) - biennial; (p) - perennial

## 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 recommendations.** See specific use directions for Forest Site Preparation below.

### **Broadcast Treatments for Forest Site Preparation (Not for Conifer Release)**

For broadcast applications apply the recommended 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 recommended, 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 Recommendations 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	1-2 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> 1/2-3/4 pt Tordon 22K  <b>Spring:</b> 1/2-3/4 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 3/4-1 pt of Tordon 22K + 1 lb ae of 2,4-D/acre.
Mullein, common	1 - 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>

**Table 1: Rate Recommendations 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>Perennial Weeds:</b>		
pricklypear, plains	1/2-1 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	1/2-1 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 “General Use Precautions” section for note on grazing treated poisonous plants.</b> <b>Broom snakeweed:</b> Apply during active growth between full leaf to early bloom stage.
burroweed 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	1-2 pt Tordon 22K	<b>General: Apply during active growth prior to bud stage.</b> Lower rates in rate range may require annual spot treatments. Control with lower rates may be improved by tank mixing with 1.0 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 1/2 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 1.5-2 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 recommended 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	2-4 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> <b>Apply in the fall or summer</b> 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 General Use Precautions for note on grazing treated poisonous plants.</b>
<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. Application to trees taller than 15 feet is not recommended. <b>Do not</b> use more than 2 pints of Tordon 22K per acre in any one year.	

**Table 2: Rate Recommendations 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 horseweed lettuce, prickly ragweed, common ragweed, lanceleaf smartweed sneezeweed, bitter sunflower thistle, bull thistle, musk	<p><b>Early Season</b> 3/4 - 1 1/2 pt Tordon 22K</p> <p><b>Mid to Late Season</b> 1-2 pt Tordon 22K</p>	<p><b>General:</b> Apply when there is adequate soil moisture and weeds are actively growing.</p> <p><b>Early Season:</b> Recommendations are intended only for very early in the season when weeds are no more than 2 to 3 inches tall.</p> <p><b>Mid to Late Season:</b> Recommendations are for weeds from 3 inches tall to early flowering.</p> <p><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.</p> <p><b>Lanceleaf Ragweed:</b> Use the higher rate within the recommended rate range.</p>
<b>Perennial Weeds:</b>		
snakeweed, broom	<p><b>Fall, Early Winter</b> 1 pt Tordon 22K</p>	<p><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.</p>
bullnettle coneflower, upright prairie dock, curly horsenettle, Carolina horsenettle, western horsenettle, white ironweed nightshade, silverleaf ragweed, western yankeeweed	<p>1-2 pt Tordon 22K</p>	<p><b>General:</b> Apply when there is adequate soil moisture and weeds are actively growing.</p> <p><b>Nettles and Silverleaf Nightshade:</b> Apply when plants begin to flower in spring.</p> <p><b>Upright Prairie Coneflower:</b> Apply when plants are 2-6 in. tall, before flowering.</p> <p><b>Curly Dock:</b> Apply up to bolting</p> <p><b>Ironweed:</b> Apply up to bud stage.</p> <p><b>Yankeeweed:</b> Apply when plants are 8 to 10 in. tall.</p>
goldaster, gray goldaster, narrowleaf goldenweed, common goldenweed, Drummond (Isocoma spp.)	<p>1-2 pt Tordon 22K</p>	<p><b>Gray and Narrowleaf Goldaster:</b> Apply in oil-water emulsion in spring during bud stage (prebloom). Thorough coverage is essential.</p> <p><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, 4-5 gpa by air or 15-20 gpa by ground, to ensure thorough coverage.</p>
Poisonous Plants such as groundsel (Senecio spp.) lambert crazyweed loco, woolly loco, Wooton (garbancillo)	<p>1 1/2-2 pt Tordon 22K</p>	<p><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.</p> <p><b>See General Use Precautions for note on grazing treated poisonous plants.</b></p> <p><b>Locoweeds:</b> To improve wetting of locoweeds, use an agricultural surfactant at 0.25%-0.5% or apply in oil-water emulsion.</p>



**Table 2: Rate Recommendations 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.)**

<b>Cactus</b>	<b>Broadcast Application (Rate/acre)</b>	<b>High Vol. Foliar (Rate/100 gal)</b>	<b>Specific Use Directions</b>
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	2 qt Tordon 22K + 1 qt Remedy	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 - 2 pt	4 qt	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	1-2 qt Tordon 22K + 2-4 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 Tordon22K + 2 lb ae 2,4-D or 1 pt Remedy	2 qt Tordon 22K or 1-2 qt Tordon 22K + 2-4 lb ae 2,4-D or 1 qt Remedy	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 + 2/3 -1 1/3 pt Reclaim or 1 to 2 pt Remedy	2 qt Tordon 22K + 2-3 pt Remedy or 1-2 qt Reclaim	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 Reclaim will provide improved control of pricklypear and legume species such as mesquite and acacias while tank mixing with Remedy will provide improved control of non-legume species such as granjeno, oaks and hackberry.

**Table 2: Rate Recommendations 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.)**

Cactus	Broadcast Application (Rate/acre)	High Vol. Foliar (Rate/100 gal)	Specific Use Directions
mesquite	1-2 pt Tordon 22K + 2/3-1 1/3 pt Reclaim or 2 pt Tordon 22K + 1 pt Remedy	1-2 qt Tordon 22K + 1-2 qt Reclaim or 1 1/2-3 pt Remedy	<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 pint/acre rate of Tordon 22K.
<p><b>Tordon 22K in Tank Mix:</b> Tank mixing with Reclaim will provide control of pricklypear and improved control of legume species such as mesquite and acacias while tank mixing with Remedy 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 Reclaim and Remedy for additional treatment recommendations 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 12-18 inches, and soil moisture is adequate for plant growth. Application should be made within 45 days after the critical soil temperature at the 12-18 inch depth has been reached or, if Tordon 22K is applied in combination with Reclaim, 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 12-18 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**

ashe juniper eastern redcedar eastern persimmon	<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. Application to trees taller than 12 feet is not recommended. 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>
---	--

**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:**

- Do not use Tordon 22K if legumes are a desired cover during CRP.
- Conditions that stress grasses, such as drought, will increase potential for injury to the grass at all stages of growth.
- 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.
- **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.

---

**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. Tordon 22K should not be applied 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 recommended 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, Reclaim<sup>®</sup> 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<sup>®</sup> 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 Envert 171 Woody Plant Herbicide an approved inverting agent to provide a thick invert water-in-oil spray emulsion designed to minimize spray drift. Consult label directions for Envert 171 or inverting agent for use directions. Invert emulsions may be used only for non-food uses.

Where root-suckering species such as sumac, sassafras, locust and black gum predominate, mix 3 gallons of Envert 171 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 Envert 171 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 of 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 recommended 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 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.

**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 recommendations 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 recommended rates in a spray volume of 2 or more gallons per acre by air or 10 or more gallons per acre by ground. For non-crop applications it is recommended that ground applications of Tordon 22K be made in 15 or more gallons of total spray mixture per acre. For aerial applications, the use of 5 to 20 gallons per acre of spray mixture is recommended.

#### 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. It is recommended that the total amount of spray mixture applied per acre is 40 to 60 gallons. **The total use of Tordon 22K must not exceed 2 quarts per acre.**

#### Spot Treatment

Use application rates as suggested in the "Approved Uses" section of this label or recommended 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.  $3,500 \div 1,000 = 3.5$ ). 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. Applications to trees taller than 12 feet is not recommended.

#### 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. It is recommended that applications be made soon after cutting, before sprouting of woody species has occurred. The "Brown Brush Monitor" is recommended 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. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations 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. 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. All such risks shall be assumed by buyer.

---

### **Limitation of Remedies**

---

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at 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.

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. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer and Inherent Risks of Use above 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.

®Trademark of Dow AgroSciences LLC

**Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.**

Label Code: D02-111-011

Replaces Label: D02-111-010

LOES Number: 010-00094

EPA Accepted: 01-25-2005

### **Revisions**

Initial printing of revised label for Tordon 22K which combines uses of Tordon K and Tordon 22K into a single label.