



DuPont™ Landmark® XP

herbicide



“..... A Growing Partnership With Nature”

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DuPontTM Landmark[®] XP

herbicide

Dispersible Granules

<i>Active Ingredient</i>	<i>By Weight</i>
Sulfometuron methyl {Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]-carbonyl]amino]sulfonyl]benzoate}	50%
Chlorsulfuron 2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	25%
<i>Inert Ingredients</i>	25%
TOTAL	100%

EPA Reg. No. 352-645

KEEP OUT OF REACH OF CHILDREN

CAUTION

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 five 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

Have the product container label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION! Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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 by cleaning of equipment or disposal of equipment washwaters.

DIRECTIONS FOR USE

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

DuPont™ LANDMARK® XP should be used only in accordance with recommendations on this label or in separately published DuPont recommendations.

DuPont will not be responsible for losses or damages resulting from the use of this product in any manner not specifically recommended by DuPont. User assumes all risks associated with such nonrecommended use.

GENERAL INFORMATION

LANDMARK® XP herbicide is a dispersible granule that is mixed in water and applied as a spray.

LANDMARK® XP controls many annual and perennial grasses and broadleaf weeds in non-crop sites.

LANDMARK® XP may be used for general weed control on terrestrial non-crop sites and for selective weed control in certain types of unimproved turf grasses on these same sites. LANDMARK® XP can be tank mixed with other herbicides registered for use in non-crop sites; when tank mixing, use the most restrictive limitations from the labeling of both products.

Do not apply more than 6.0 ounces active ingredient sulfometuron methyl per acre per year when using this product or any other product containing sulfometuron methyl.

Do not apply more than 2.25 ounces active ingredient chlorsulfuron per acre per year when using this product or any other product containing chlorsulfuron.

LANDMARK® XP controls weeds by both preemergence and postemergence activity. The best results are obtained when the application is made at or before the early stages of weed growth; before weeds develop an established root system. Moisture is required to move LANDMARK® XP into the root zone of weeds for preemergence control.

This product may be applied on non-crop sites that contain areas of temporary surface water caused by collection of water in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittently flooded low lying areas, seasonal dry flood plains and transitional areas between upland and lowland areas 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.

A drift control agent may be used at the manufacturer's recommended rate in the application of LANDMARK® XP.

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

For best postemergence results, apply LANDMARK® XP to young, actively growing weeds. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment
- soil pH, soil moisture, and soil organic matter

Note:

Do not exceed a rate of 9.0 ounces of LANDMARK® XP per acre per year.

Do not use on food or feed crops.

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

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

When applied as a spray, LANDMARK® XP is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. When applied on dry fertilizer, LANDMARK® XP is absorbed primarily by the roots. Two to three weeks after application to weeds, plant 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 application accelerate the herbicidal activity of LANDMARK® XP; cold, dry conditions delay the herbicidal activity. In addition, weeds hardened-off by drought stress are less susceptible to LANDMARK® XP. Moisture is needed to move LANDMARK® XP into the soil for preemergence weed control.

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.

NON-AGRICULTURAL USES

NON-CROP (INDUSTRIAL) SITES

Application Information

DuPont™ LANDMARK® XP is recommended for general weed control on private, public and military lands as follows: nonagricultural 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.)

LANDMARK® XP is not recommended for use on recreation areas or for direct application to paved areas (surfaces).

Apply by ground or air (helicopter only) or as otherwise directed by Supplemental or Special Local Need Labeling.

Application Timing

Apply LANDMARK® XP as a preemergence or early postemergence spray before or during the rainy season when weeds are actively germinating or growing.

Application Rates

Apply LANDMARK® XP at 4.5 to 9.0 ounces of product per year. When applied at lower rates, LANDMARK® XP provides short-term control of weeds listed; when applied at higher rates, weed control is extended.

Weeds Controlled

LANDMARK® XP effectively controls the following broadleaf weeds and grasses when applied at the rates shown.

When applied at 4.5 ounces of product per acre, LANDMARK® XP controls the following weeds:

Broadleaf Weeds

Annual sowthistle
Bedstraw
Black medic
Black mustard
Blue mustard
Bouncingbet
Buckhorn plantain
Burclover
Buttercup
Canada thistle
Carolina geranium
Clover
Cocklebur
Common chickweed
Common groundsel
Common lambsquarter
Common mallow
Common purslane
Common ragweed
Common speedwell
Common spikeweed
Common sunflower
Common tarweed
Common vetch
Common yarrow
Cow cockle
Crimson clover
Curly dock
Cutleaf eveningprimrose
Dandelion
Dogfennel
Dyer's woad
Erect knotweed
False chamomile
Fiddleneck
Field pennycress
Fireweed
Fleabane
Flixweed
Goldenrod
Hairy vetch
Hemp
Hemp sesbania
Henbit
Hill mustard
Hoary cress (whiteweed)
Houndstongue
London rocket
Marestail/horseweed
Musk thistle
Ox-eye daisy
Pepperweed
Perennial pepperweed
Prairie groundsel
Prickly coontail
Prickly sida
Prostrate knotweed
Puncturevine
Redroot pigweed
Redstem filaree
Salsify
Scotch thistle
Seaside heliotrope
Shepherd's purse
Sicklepod
Smallseed falseflax
Spanish needles
Spiny pigweed
Spreading orach
Sweetclover
Tansymustard
Tansy ragwort
Tumble mustard (Jim Hill)
Tumble pigweed
Turkey mullein
Velvetleaf
Whitestem filaree
Whiteweed
Wild buckwheat
Wild carrot
Wild garlic
Wild parsnip
Wild teasel

Sonchus oleraceus
Galium spp.
Medicago lupulina
Brassica nigra
Chorispora tenella
Saponaria officinalis
Plantago lanceolata
Medicago spp.
Petasites hybridus
Cirsium arvense
Geranium carolinianum
Trifolium spp.
Xanthium spp.
Stellaria media
Senecio vulgaris
Chenopodium album
Malva neglecta
Portulaca oleracea
Ambrosia elatior
Veronica officinalis
Hemizonia pungens
Helianthus annuus
Madia spp.
Vicia sativa
Achillea millefolium
Vaccaria pyramidata
Trifolium incarnatum
Rumex crispus
Oenothera laciniata
Taraxacum officinale
Eupatorium capillifolium
Isatis tinctoria
Polygonum erectum
Matricaria maritima
Amsinckia lycopsoides
Thlaspi arvense
Epilobium angustifolium
Conyza spp.
Descurainia sophia
Solidago spp.
Vicia villosa
Cannabis spp.
Sesbania exaltata
Lamium amplexicaule
Bunias orientalis
Cardaria draba
Cynoglossum officinale
Sisymbrium irio
Conyza canadensis
Carduus nutans
Chrysanthemum leucanthemum
Lepidium spp.
Lepidium latifolium
Senecio plattensis
Ceratophyllum echinatum
Sida spinosa
Polygonum aviculare
Tribulus terrestris
Amaranthus retroflexus
Erodium cicutarium
Tragopogon spp.
Onopordum acanthium
Heliotropium curassavicum
Capsella bursa-pastoris
Cassia obtusifolia
Camelina microcarpa
Bidens bipinnata
Amaranthus spinosus
Atriplex patula
Melilotus spp.
Descurainia pinnata
Senecio jacobaea
Sisymbrium altissimum
Amaranthus albus
Eremocarpus setigerus
Abutilon theophrasti
Erodium moschatum
Cardaria spp.
Polygonum convolvulus
Daucus carota
Allium vineale
Pastinaca sativa
Dipsacus fullonum

* Certain biotypes of maretail are less sensitive to DuPont™ LANDMARK® XP and may be controlled with a tank mixture of diuron, DuPont™ HYVAR® X or DuPont™ KROVAR® I DF.

Grasses (up to 6-12" tall)

Alta fescue	<i>Festuca arundinacea</i>
Annual bluegrass	<i>Poa annua</i>
Annual ryegrass	<i>Lolium spp.</i>
Bahiagrass	<i>Paspalum notatum</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Crabgrass	<i>Digitaria spp</i>
Downy brome (cheatgrass)	<i>Bromus tectorum</i>
Foxtails (except green)	<i>Setaria spp</i>
Foxtail barley	<i>Hordeum jubatum</i>
Foxtail fescue	<i>Vulpia myuros</i>
Italian ryegrass	<i>Lolium multiflorum</i>
Itchgrass	<i>Rottboellia cochinchinensis</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
Little barley	<i>Hordeum pusillum</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Red brome	<i>Bromus rubens</i>
Red fescue	<i>Festuca rubra</i>
Ripgut brome	<i>Bromus diandrus</i>
Rye (volunteer)	<i>Secale cereale</i>
Seashore saltgrass	<i>Distichlis spicata</i>
Signalgrass (broadleaf)	<i>Brachiaria platyphylla</i>
Sprangletop (annual)	<i>Leptochloa spp</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild oats	<i>Avena fatua</i>
Witchgrass	<i>Panicum capillare</i>
Yellow indiagrass	<i>Sorghastrum nutans</i>

When applied at 9.0 ounces of product per acre, LANDMARK® XP also controls the following additional weeds:

Broadleaf Weeds

Aster	<i>Aster spp</i>
Carpetweed	<i>Mollugo verticillata</i>
Catsear	<i>Hypochoeris spp.</i>
Common cinquefoil	<i>Potentilla canadensis</i>
Common knapweed (black)	<i>Centaurea nigra</i>
Common mullein	<i>Verbascum thapsus</i>
Horetail	<i>Equisetum spp.</i>
Morningglory	<i>Ipomoea spp</i>
Russian knapweed	<i>Acroptilon repens</i>
St. Johnswort	<i>Hypericum perforatum</i>
White snakeroot	<i>Eupatorium rugosum</i>
Yellow rocket	<i>Barbarea vulgaris</i>
Yellow starthistle	<i>Centaurea solstitialis</i>

Grasses

Broadleaf panicum	<i>Panicum novemnerve</i>
Green foxtail	<i>Setaria viridis</i>
Johnsongrass	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colonum</i>

Note: Use the higher level of recommended dosage ranges under the following conditions:

- heavy weed growth
- soils with high organic matter
- high soil moisture areas, such as along road edges or railroad shoulders

For replanting areas treated with LANDMARK® XP refer to the GRASS REPLANT INTERVALS section of this label.

Specific Weed Problems —Non-crop Sites

Kochia, Russian Thistle, and Prickly Lettuce

Since biotypes of kochia, Russian thistle, and prickly lettuce are known to be resistant to LANDMARK® XP, tank mixture combinations with herbicides having different modes of action, such as DuPont™ KARMEX® DF, HYVAR® X or KROVAR® I DF, must be used. In areas where resistance is known to exist, these weeds should be treated postemergence with other herbicides registered for their control, such as 2,4-D or dicamba.

Kochia and Russian Thistle - Apply a tank mixture of LANDMARK® XP herbicide at 4.5 ounces of product per acre plus diuron at 8 pounds per acre active ingredient (10 pounds of an 80% dry formulation or 2 gallons of a 4 pound active ingredient liquid formulation).

Do not tank mix LANDMARK® XP with HYVAR® X-L herbicide.

UNDER ASPHALT AND CONCRETE PAVEMENT

Application Information

LANDMARK® XP may be used to control weeds under asphalt and concrete pavement, such as that used in parking lots, highway shoulders, median strips, roadways, and other non-crop sites. LANDMARK® XP may not control tubers, rhizomes, woody vegetation such as small trees, brush or woody vines.

LANDMARK® XP should only be used in an area that has been prepared according to good construction practices. Use sufficient water to ensure uniform coverage.

Application Timing

LANDMARK® XP should be applied immediately before paving to avoid lateral movement of the herbicide as a result of soil movement due to rainfall or mechanical means.

Application Rate

Apply LANDMARK® XP at 9.0 ounces of product per acre.

IMPORTANT PRECAUTIONS—UNDER ASPHALT ONLY

- Do not use LANDMARK® XP under pavement in residential properties such as driveways, or in recreational areas, including jogging or bike paths, tennis courts, or golf cart paths.

TURF, INDUSTRIAL (UNIMPROVED ONLY)

BERMUDAGRASS AND CENTIPEDEGRASS RELEASE

Application Information

DuPont™ LANDMARK® XP is recommended to control weeds in unimproved turf, roadsides, or other non-crop sites where the turf is well established as a ground cover. Applications may temporarily suppress grass growth and inhibit seedhead formation (chemical mowing).

Application Timing and Rate

Apply LANDMARK® XP at 0.9 ounces of product per acre to established grasses after they have broken dormancy, usually 30 days after initial spring flush. If an additional application is necessary, apply LANDMARK® XP again at 0.9 ounces of product per acre during late spring to early summer. On established weeds, apply LANDMARK® XP one to two weeks after mowing for the best results.

LANDMARK® XP may also be applied in late fall or early winter.

Weeds Controlled

When applied at 0.9 ounces of product per acre, LANDMARK® XP controls the following weeds:

Annual bluegrass	<i>Poa annua</i>
Black mustard	<i>Brassica nigra</i>
Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Cocklebur	<i>Xanthium spp</i>
Common chickweed	<i>Stellaria media</i>
Common lambsquarter	<i>Chenopodium album</i>
Common purslane	<i>Portulaca oleracea</i>
Common tarweed	<i>Madia spp.</i>
Common yarrow	<i>Achillea millefolium</i>
Dandelion	<i>Taraxacum officinale</i>
False chamomile	<i>Matricaria maritima</i>
Field pennycress	<i>Thlaspi arvense</i>
Fleabane	<i>Conyza spp</i>
Flixweed	<i>Descurainia sophia</i>
Hill mustard	<i>Bunias orientalis</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
London rocket	<i>Sisymbrium irio</i>
Marestail/horseweed*	<i>Conyza canadensis</i>
Redroot pigweed	<i>Amaranthus retroflexus</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Smallseed falseflax	<i>Camelina microcarpa</i>
Tansymustard	<i>Descurainia pinnata</i>
Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild mustard	<i>Sinapis arvensis</i>
Wild oats	<i>Avena fatua</i>

IMPORTANT PRECAUTIONS—INDUSTRIAL, UNIMPROVED TURF

- Excessive injury to turf may result if a surfactant is used with LANDMARK® XP applications made to actively growing turf. The user assumes all responsibility for turf injury if a surfactant is used with LANDMARK® XP treatments applied to actively growing turf.

- LANDMARK® XP may temporarily discolor or cause top kill of turf grasses. Applications made while turf is dormant may delay green-up in the spring.
- LANDMARK® XP application on turf that is under stress from drought, insects, disease, cold temperatures or late spring frost, may result in injury.
- Application of LANDMARK® XP to turf less than 1 year old may cause unacceptable turf injury.
- For broadcast applications, do not exceed 2 applications of 0.9 ounces of product per acre LANDMARK® XP within a 12 month period.

* Annual retreatments may reduce turf vigor.

NON-CROPLAND RESTORATION

Application Information

LANDMARK® XP is recommended for the control of downy brome (cheatgrass), cheat, jointed goatgrass, medusahead and certain broadleaf weeds in unimproved industrial turf, on roadsides, airports, industrial sites or on other similar non-crop sites. In order to release desirable, perennial grass species for site stabilization, LANDMARK® XP may be used to control the following winter annual grasses and broadleaf weeds.

Application Timing and Rate

Apply LANDMARK® XP at 0.75 to 2.25 ounces of product per acre in the Fall, within 6 weeks before the expected date when the soil freezes, or in the Spring within 6 weeks after the soil thaws. When applied at lower rates, LANDMARK® XP provides short-term control of weeds listed; when applied at higher rates, weed control spectrum is broadened and extended.

Do not apply when the soil is frozen.

Do not apply to unstable soil conditions.

When applied at 0.75 ounces of product per acre, LANDMARK® XP controls the following weeds:

Broadleaf Weeds

Blue mustard	<i>Chorispora tenella</i>
Common lambsquarter	<i>Chenopodium album</i>
Common purslane	<i>Portulaca oleracea</i>
Common tarweed	<i>Madia spp.</i>
Common yarrow	<i>Archillea millefolium</i>
False chamomile	<i>Matricaria maritima</i>
Field pennycress	<i>Thlaspi arvense</i>
Fleabane	<i>Conyza spp</i>
Redroot pigweed	<i>Amaranthus retroflexus</i>
Smallseed falseflax	<i>Camelina microcarpa</i>
Tansymustard	<i>Descurainia pinnata</i>
Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>

Grasses

Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Downy brome (cheatgrass)	<i>Bromus tectorum</i>

When applied at 1.5 ounces of product per acre, DuPont™ LANDMARK® XP controls the following additional weeds:

Broadleaf Weeds

Annual sowthistle	<i>Sonchus oleraceus</i>
Buckhorn plantain	<i>Plantago lanceolata</i>
Buttercup	<i>Petasites hybridus</i>
Carolina geranium	<i>Geranium carolinianum</i>
Clover	<i>Trifolium spp</i>
Cocklebur	<i>Xanthium spp</i>
Common chickweed	<i>Stellaria media</i>
Common groundsel	<i>Senecio vulgaris</i>
Common speedwell	<i>Veronica officinalis</i>
Common spikeweed	<i>Hemizonia pungens</i>
Common sunflower	<i>Helianthus annuus</i>
Cow cockle	<i>Vaccaria pyramidata</i>
Cutleaf eveningprimrose	<i>Oenothera laciniata</i>
Dandelion	<i>Taraxacum officinale</i>
Dyer's woad	<i>Isatis tinctoria</i>
Erect knotweed	<i>Polygonum erectum</i>
Fiddleneck	<i>Amsinckia lycopsoides</i>
Flixweed	<i>Descurainia sophia</i>
Goldenrod	<i>Solidago spp</i>
Hairy vetch	<i>Vicia villosa</i>
Hemp sesbania	<i>Sesbania exaltata</i>
Henbit	<i>Lamium amplexicaule</i>
Hill mustard	<i>Bunias orientalis</i>
London rocket	<i>Sisymbrium irio</i>
Marestail/horseweed	<i>Conyza canadensis</i>
Morningglory	<i>Ipomoea spp.</i>
Musk thistle	<i>Carduus nutans</i>
Prickly coontail	<i>Ceratophyllum echinatum</i>
Prickly sida	<i>Sida spinosa</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Sicklepod	<i>Cassia obtusifolia</i>
Spiny pigweed	<i>Amaranthus spinosus</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Whitestem filaree	<i>Erodium moschatum</i>
Wild buckwheat	<i>Polygonum convolvulus</i>
Wild carrot	<i>Daucus carota</i>
Wild mustard	<i>Sinapis arvensis</i>
Wild teasel	<i>Dipsacus fullonum</i>

Grasses

Annual bluegrass	<i>Poa annua</i>
Annual ryegrass	<i>Lolium spp.</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Foxtails (except green)	<i>Setaria spp</i>
Foxtail barley	<i>Hordeum jubatum</i>
Japanese brome	<i>Bromus japonicus</i>
Jointed goatgrass	<i>Aegilops cylindrical</i>
Little barley	<i>Hordeum pusillum</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Rye (volunteer)	<i>Secale cereale</i>
Signalgrass (broadleaf)	<i>Brachiaria platyphylla</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild oats	<i>Avena fatua</i>
Witchgrass	<i>Panicum capillare</i>

When applied at 2.25 ounces of product per acre, LANDMARK® XP controls the following additional weeds:

Broadleaf Weeds

Bedstraw	<i>Galium spp.</i>
Black mustard	<i>Brassica nigra</i>
Common vetch	<i>Vicia sativa</i>
Hemp	<i>Cannabis spp.</i>
Hoary cress (whiteweed)	<i>Cardaria draba</i>
Pepperweed	<i>Lepidium spp.</i>
Prairie groundsel	<i>Senecio plattensis</i>
Salsify	<i>Tragopogon spp</i>
Spanish needles	<i>Bidens bipinnata</i>
Spreading orach	<i>Atriplex patula</i>
Sweet clover	<i>Melilotus spp.</i>
Tansy ragwort	<i>Senecio jacobaea</i>
Tumble pigweed	<i>Amaranthus albus</i>
Wild garlic	<i>Allium vineale</i>

Grasses

Crabgrass	<i>Digitaria spp</i>
Foxtail fescue	<i>Vulpia myuros</i>
Green foxtail	<i>Setaria viridis</i>
Red brome	<i>Bromus rubens</i>
Ripgut brome	<i>Bromus diandrus</i>

GRASS REPLANT INTERVALS

Following a treatment with LANDMARK® XP at use rates up to 2.25 ounces of product per acre, the following grasses may be replanted at least 3 months after a spring application:

Green needlegrass	<i>Stipa viridula</i>
Meadow brome	<i>Bromus erectus</i>
Russian wild rye	<i>Elymus spp.</i>
Switchgrass	<i>Panicum virgatum</i>

The following grasses may be replanted at least 6 months after a spring application:

Alta fescue	<i>Festuca arundinacea</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Orchardgrass	<i>Dactylis glomerata</i>
Smooth brome	<i>Bromus inermis</i>
Sheep fescue	<i>Festuca ovina</i>
Western wheatgrass	<i>Agropyron smithii</i>

The intervals recommended are for soils with a pH of less than 7.5.

Soils having a pH greater than 7.5 will require longer intervals. The recommended intervals are for applications made in the spring. Because LANDMARK® XP degradation is slowed by cold or frozen soils, applications made in the fall should consider the intervals as beginning in the spring following treatment.

Testing has indicated that there is considerable variation in response among species and types of grasses when seeded into areas treated with LANDMARK® XP. If species other than those listed above are to be planted into areas treated with LANDMARK® XP a field bioassay should be performed, or previous experience may be used to determine the feasibility of replanting treated areas.

To conduct a field bioassay, grow to maturity test strips of the grass(es) you plan to grow the following year. The test strips should cross the entire field including knolls and low

areas. Crop response to the bioassay will indicate whether or not to plant the grass(es) grown in the test strips.

ADDITIONAL USE INSTRUCTIONS FOR ALL NON-AGRICULTURAL USES

TANK MIX COMBINATIONS

Combination with other herbicides broadens the spectrum of weeds controlled. In addition, total vegetation control can be achieved with higher rates of DuPont™ LANDMARK® XP plus residual type companion herbicides. To improve postemergence control of weeds, add surfactant at 0.25% by volume or at the manufacturer's recommended rate based on spray area.

LANDMARK® XP may be applied with the recommended rates of other herbicides registered for this use. For application method and other use specifications, use the most restrictive directions for the intended combination.

Do not tank mix LANDMARK® XP with DuPont™ HYVAR® X-L herbicide.

SPRAY EQUIPMENT

Following a LANDMARK® XP application, do not use this spray equipment for application to agricultural or ornamental crops. The mixing and application equipment must be used for forestry and non-crop applications only, unless directed otherwise by supplemental labeling. This is extremely important as low rates of LANDMARK® XP can kill or severely injure most crops.

APPLICATION

Use a sufficient volume of water to ensure thorough coverage when applying LANDMARK® XP as a broadcast or directed spray. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Be sure the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping to avoid injury to desired species.

MIXING INSTRUCTIONS

1. Fill spray tank 1/2 full of water.
2. With the agitator running, add the proper amount of LANDMARK® XP.
3. If using a companion product, add the recommended amount.
4. For postemergent applications, add the proper amount of spray adjuvants.
5. Add the remaining water.
6. Agitate the spray tank thoroughly.

LANDMARK® XP spray preparations are stable if they are pH neutral or alkaline and stored at or below 100° F.

SPRAYER CLEANUP

Thoroughly clean all mixing and spray equipment following applications of LANDMARK® XP as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water.
2. Fill the tank with clean water and 1 gal of household ammonia (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank. Equivalent amounts of an alternate-strength ammonia solution or a commercial cleaner can be used in the cleanout procedure. If a commercial cleaner is used, carefully read and follow the individual cleaner instructions.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. Dispose of the rinsate on a labeled site or at an approved waste disposal facility. If a commercial cleaner is used follow the directions for rinsate disposal on the label.

Notes:

1. **Caution:** Do not use chlorine bleach with ammonia as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended before performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When LANDMARK® XP is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.

IMPORTANT PRECAUTIONS FOR ALL NON-AGRICULTURAL USES

Injury to or loss of desirable trees or other plants may result from failure to observe the following:

- If equipment is drained or flushed on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Treatment of powdery, dry soil or light, sandy soil 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 LANDMARK® XP may injure or kill most crops. Injury may be more severe when the crops are irrigated. Do not

apply DuPont™ LANDMARK® XP when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.

- Applications made where runoff water flows onto agricultural land may injure crops. 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 LANDMARK® XP. Do not treat frozen soil. Treated soil should be left undisturbed to reduce the potential for LANDMARK® XP movement by soil erosion due to wind or water.

Do not use on lawns, walks, driveways, tennis courts, or similar areas.

Keep from contact with fertilizers, insecticides, fungicides, and seeds.

Do not apply in or on irrigation ditches or canals including their outer banks.

Do not apply through any type of irrigation system.

Do not use the equipment used to mix or apply LANDMARK® XP on crops unless specifically directed by supplemental labeling. When applied on fertilizer, do not use the impregnation, transport or application equipment to make subsequent applications to crops. The mixing and application equipment may be used for forestry and non-crop applications only.

If non-crop sites treated with LANDMARK® XP are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, do not plant the treated sites for at least one year after the LANDMARK® XP application. A field bioassay must then be completed before planting to crops. To conduct a field bioassay, grow to maturity test strips of the crop(s) you plan to grow the following year. The test strips should cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the crops(s) grown in the test strips. In the case of suspected offsite movement of LANDMARK® XP to cropland, soil samples should be quantitatively analyzed for LANDMARK® XP or any other herbicide which could be having an adverse effect on the crop, in addition to conducting the above-described bioassay.

Do not use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla and Conejos.

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 (>150 - 200 microns). 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 **Surface 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. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size-Aircraft (Helicopter)

Number of Nozzles - Use the minimum number of nozzles with the highest flow rate that provides 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) - Use a boom length and position that prevents droplets from entering the rotor vortices.

Boom Height (helicopter) - Application more than 10 feet above the canopy increases the potential for spray drift.

Boom Height (ground) - Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the target and have minimal bounce.

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 APPLICATIONS DURING 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

Drift potential is high during a surface temperature inversion. 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.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store product in original container only.

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

Container Handling: For plastic jugs and transfer containers: 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 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 paper, plastic and/or fiber flexible bags and/or sacks:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag or sack in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. **For fiber drums with liners:** Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of liner in a 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.

For plastic refillable drums: Refillable container. Refill this container with sulfometuron methyl and chlorsulfuron only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

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SL - 975-1 042710 05-12-05

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