BARRAGE® HF

LOW VOLATILE HERBICIDE

ACTIVE INGREDIENT:

2-Ethylhexyl Ester of 2,4-Dichlorophenoxyacetic Acid	78.1%
INERT INGREDIENTS:	21.9%
TOTAL	100.0%

Equivalent to 51.8% 2,4-D Acid or 4.7 lb./gal.
Isomer specific by AOAC Method 6.D01-5 (12th Ed.)
Patent No. 6,232,272

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

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

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

FIRST AID

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse immediately with plenty of water for 15-20 minutes
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

- Call a poison control center or doctor immediately for advice.
- Do not give any liquid to the person.
- Do not induce vomiting unless instructed to do so by poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye
- Call a poison control center or doctor immediately for advice.

IF INHALED:

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

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

SEE INSIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

EPA REG. NO. 5905-529 EPA EST. NO. 228-IL-01
NET CONTENTS: 2.5 Gallons (9.46 Liters) AD 081910

MANUFACTURED FOR
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300
COLLIERVILLE, TENNESSEE 38017

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical resistance category selection chart.

All mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-Sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves, such as Barrier Laminate, Nitrile Rubber, Neoprene Rubber, or Viton.
- Chemical-resistant apron when applying postharvest dips or sprays to citrus, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See "Engineering Controls" for additional requirements.

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

ENGINEERING CONTROL STATEMENTS

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides (40 CFR 170.240(d)(6)).

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.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

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

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

Groundwater Contamination: Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent

contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.
This product may cause injury to desirable plants by contacting foliage, stems or roots. Use care in all applications to avoid surface water or soil transport to nontarget plant areas. Avoid contamination of irrigation or domestic water supplies. Although this product is a low volatile formulation, at high temperatures (about 85 degrees or higher), vapors from this product may injure susceptible plants growing nearby such as cotton, grapes, tobacco, fruittrees, legumes, vegetables, and ornamentals. Avoid applications in the vicinity of susceptible plants or when winds are blowing toward nearby susceptible plants or when temperature inversions are expected. Avoid direct application or spray drift to susceptible plants since very small quantities of this herbicide can cause severe injury in the growing or dormant period. Plants contacted may be killed or suffer significant injury resulting in grade or yield losses. Do not apply in greenhouses.

The following steps may be helpful in reducing possible spray drift from ground or aerial applications:

1. Keep the spray discharge as near to the target as possible while getting good coverage,
2. Increase the volume of spray mixture per acre,
3. Use low spraying pressures (as measured at the nozzle tips),
4. Use nozzles which produce coarse spray droplets while still providing adequate weed coverage,
5. Limit applications when wind is blowing toward nearby susceptible crops or valuable plants,
6. Make applications when wind velocity is more favorable for on-target deposition - a general guide for application would be a) wind velocity of 0-2 mph may indicate a temperature inversion which can permit drift; b) wind velocity of 3-7 mph usually indicates good conditions, but check wind direction relative to nearby susceptible crops always allowing for wind shift, c) wind velocity 7-10 mph is acceptable if wind direction is favorable and no susceptible crops are in the vicinity always allowing for wind shift, d) wind velocity of 10-15 mph is usually not desirable except in areas of stronger prevailing winds when direction is favorable and no susceptible crops are in the vicinity always allowing for wind shift; an agriculturally accepted drift retardant is suggested, and e) if wind velocity is over 15 mph do not spray,
7. Properly maintain and calibrate all spray equipment,
8. For aerial applications, use an effective spray boom length that is no more than 75% of the wingspan or rotor diameter, and
9. Use an agriculturally accepted drift retardant designed to increase droplet size.

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

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

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

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

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

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

- Coveralls
- Chemical-resistant gloves such as Barrier Laminate, Nitrile Rubber, Neoprene Rubber, or Viton.
- Shoes plus socks
- Protective Eyewear

NON-AGRICULTURAL USE REQUIREMENTS
The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal. Do not store under conditions which might adversely affect the container or its ability to function properly.

STORAGE: Do not store below temperature of 0° F. If frozen, warm to 40°F and redissolve before using by rolling or shaking container. This product can be stored in an unheated building. Store in a safe manner. Store in original container only. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

NONREFILLABLE METAL CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS): Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

NONREFILLABLE METAL CONTAINER (GREATER THAN 5 GALLONS): 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 ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

NONREFILLABLE PLASTIC CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS): Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration if allowed by state and local authorities, by burning. If burned, stay out of smoke.

NONREFILLABLE PLASTIC CONTAINER (GREATER THAN 5 GALLONS): 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 ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration if allowed by state and local authorities, by burning. If burned, stay out of smoke.

REFILLABLE CONTAINER: Refill this container with pesticide only. Do not reuse this container for any other purpose. Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. 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. If the container is not being refilled, return to the point of purchase or designated location.

SPRAY DRIFT MANAGEMENT:

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

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a Coarse or coarser spray, apply only as a Coarse or coarser spray (ASAE standard 572) or volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a Medium or more fine spray, apply only as a Medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds great than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feed downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

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

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

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

Equipment
All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

2,4-D esters may volatilize during conditions of low humidity and high temperatures. Do not apply during conditions of low humidity and high temperatures.

WEEDS CONTROLLED
BARRAGE® HF will control or partially control the following as well as many other noxious plants susceptible to 2,4-D:

Artichoke	Croton (Texas, woolly)	Marshelder	Spanishneedles
Bitter wintercress	Curly indigo	Mexican weed	Speedwell
Bittercress, smallflowered	Elderberry	Milk vetch	Stinkweed
Blue lettuce	Evening primrose, common	Morningglory (annual, common, ivy, woolly)	Sumacs
Blue Thistle	Evening primrose, cutleaf	Mousetail	Sunflower
Blueweed, Texas	Fanweed	Mustards (except blue), prior to bolting	Sweetclover (annual)
Boxelder	Figwort	Nutgrass	Tumbleweed
Broomweed, common	Four o'clock	Pennywort	Velvetleaf
Buckhorn	Galinsoga (elderberry, hairy)	Pepperweeds (except perennial)	Vetches, except hairy
Bull nettle	Goatsbeard	Plantains	Virginia copperleaf
Bur ragweed	Healall	Poison ivy	Virginia creeper
Burdock,common	Hemp	Pokeweed	Wild hemp
Burhead	Hoary Cress	Poorjoe	Wild lettuce
Buttercup, smallflowered	Honeysuckle	Proverty weed	Wild mustard
Carolina geranium	Indigo	Puncture vine	Wild parsnip
Carpetweed	Ironweed	Purslane, common	Wild radish
Catnip	Jerusalem artichoke	Quickweed	Wild rape
Chickweed	Jewelweed	Ragweeds (common, giant)	Wild sweet potato
Chicory	Jimsonweed	Redstem	Willow
Cinquefoil, common & rough	Klamathweed	Rough fleabane	Witchweed
Cocklebur, common	Ladysthumb	Shepherdspurse	Wormwood
Coffeeweed	Lambsquarters, common	Sicklepod	Yellow goatsbeard
Cornflower	Loco, Bigbend	Sneezeweed, bitter	Yellow rocket
Creeping jenny	Mallow (Venice, dwarf, little)	Sowthistle (annual, spiny)	Yellow starthistle

Weeds Partially Controlled (Higher rates and/or repeated applications may be needed):

Alfalfa	Musk thistle
Beggarticks	Nettles
Bindweeds (hedge, European)	Peppergrass
Buckbrush	Prickly lettuce
Canada thistle	Rabbitbrush
Chamise	Russian thistle

Disclaimer: Always refer to the label on the product before using Helena or any other product.