EPA Registration Jacket 241-426
Vol.1

BASF Corporation

BASF

October 17, 2005

Mr. James A. Tompkins
Product Management (25)
Registration Division (H-7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
Crystal City Mall Building No. 2; Room 266A
1801 South Bell Street
Arlington, VA 22202

RE: Habitat® herbicide (EPA Reg. No. 241-426)
Notification- Habitat Final Print Supplemental Label

Dear Mr. Tompkins:

BASF is hereby submitting a notification for the Habitat herbicide (EPA Reg. No. 241-426) final print supplemental label. This printing is for a supplemental label to clarify the Brush Species Control Rates. It was brought to BASF's attention by the California Department of Pesticide Regulation, that the brush control rate recommendation, "Apply 4-6 pints per acre" was inadvertently not printed on the container label. To correct this omission, BASF is printing a supplemental label to clarify the Brush Species Control Rates.

The EPA stamped approved label contains the 4-6 pint per acre recommendation for brush control. A copy of the EPA stamped approved label is included with this submission for your records.

Enclosed please find:

- Application form 8570-1
- Habitat herbicide final print supplemental label.
- Current approved Habitat herbicide label
- Habitat herbicide final print container label

One loose copy of the Habitat herbicide final print supplemental label is enclosed for your convenience.

No PRIA fee is required for this notification.

Thank you for your assistance with this matter. If you should have any questions, please feel free to call me at (919) 547-2622.

Regards,

Jeffrey H. Birk, Ph.D.
Global Regulatory Manager
Phone 919-547-2622
Fax: 919-547-2850
Email: birkj@basf.com

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Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

United States
Environmental Protection Agency
Washington, DC 20460

- [ ] Registration
- [ ] Amendment
- [x] Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 241-426	2. EPA Product Manager James Tompkins	3. Proposed Classification [ ] None [ ] Restricted
4. Company/Product (Name) HABITAT herbicide	PM# 25	
5. Name and Address of Applicant *(Include ZIP Code)* BASF 26 Davis Drive Research Triangle Park, NC 27709 [ ] *Check if this is a new address*	6. **Expedited Reveiw.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

- [ ] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated _____
- [x] Notification - Explain below.
- [x] Final printed labels in response to Agency letter dated _____
- [ ] "Me Too" Application.
- [ ] Other - Explain below.

Explanation: Use additional pages if necessary. (For section I and Section II.)

Notification of final print supplemental label for Habitat herbicide (241-426), to clarify Brush Control Use Rates.

This notification is not subject to a fee under PRIA. Contact Jeff Birk at 919-547-2622 (phone), 919-547-2650 (fax) or by Email at birkj@basf.com

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container		[ ]

6. Manner In Which Label Is Affixed to Product: [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Jeffrey H. Birk	Global Regulatory Manager	919-547-2622

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title Global Regulatory Manager	6. Date Application Received (Stamped)
4. Typed Name Jeffrey H. Birk	5. Date October 17, 2005	

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

Habitat® herbicide

Supplemental Labeling

EPA Reg. No. 241-426

BRUSH SPECIES CONTROL RATES

FOLLOW ALL APPLICABLE DIRECTIONS, RESTRICTIONS, WORKER PROTECTION STANDARD REQUIREMENTS AND PRECAUTIONS ON THE HABITAT HERBICIDE MAIN LABEL. SEE THE HABITAT HERBICIDE MAIN LABEL FOR USE AREA, MIXING AND APPLICATION INFORMATION AND ADDITIONAL WEEDS CONTROLLED.

This Label Expires on December 31, 2006

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. This labeling must be in the possession of the user at the time of pesticide application.

BRUSH SPECIES

Apply 4-6 pints per acre[1]

COMMON NAME	SPECIES	GROWTH HABIT[2]
American Beech	*(Fagus grandifolia)*	P
Ash	*(Fraxinius spp.)*	P
Bald Cypress	*(Taxodium distichum)*	P
Bigleaf Maple	*(Acer macrophylum)*	P
Black Locust[3]	*(Robinia pseudoacacia)*	P
Black Gum	*(Nyssa sylvatica)*	P
Box Elder	*(Acer negundo)*	P
Cherry	*(Prunus spp.)*	P
Chinaberry	*(Melia azadarach)*	P
Dogwood	*(Cornus spp.)*	P
Elm[4]	*(Ulmus spp.)*	P
Hawthorn	*(Crataegus spp.)*	P
Hickory	*(Carya spp.)*	P
Honeylocust[3]	*(Gleditsia triacanthos)*	P
Maple	*(Acer spp.)*	P
Mulberry	*(Morus spp.)*	P
Oak	*(Quercus spp.)*	P
Persimmon	*(Diospyros virginiana)*	P
*Pine[4]	*(Pinus spp.)*	P
Poplar	*(Populus spp.)*	P
Privet	*(Ligustrum vulgare)*	P
Red Alder	*(Alnus rubra)*	P
Red Maple	*(Acer rubrum)*	P
Russian Olive	*(Eleagnus angustifolia)*	P
Sassafras	*(Sassafras albidum)*	P
Sourwood	*(Oxydendrum arboreum)*	P
Sweetgum	*(Liquidambar styraciflua)*	P
*Water Willow	*(Justica Americana)*	P
Willow	*(Salix spp.)*	P
Yellow Poplar	*(Liriodendron tulipifera)*	P

* Not approved for use in California
[1] The higher rates should be used where heavy or well-established infestations occur.
[2] Growth Habit – A = Annual, B = Biennial, P = Perennial
[3] Tank mix with glyphosate or triclopyr.
[4] Tank-mix with with glyphosate.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflects the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT PERMITTED BY LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

Habitat is a registered trademark of BASF Corporation.
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000241-00426.20051011.NVA2005-04-246-0332
Based on NVA 2005-04-246-0027

BASF Corporation
Agricultural Products
P.O. Box 13528
Research Triangle Park, NC 27709

BASF
The Chemical Company

Habitat®

herbicide

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Active Ingredient:

isopropylamine salt of imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid)*	28.7%
Inert Ingredients	71.3%
Total	100.0%

* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Est. No. is indicated by the first digit of the code printed on this container:
4 = 241-PR-002
3 = 60585-FL-001

EPA Reg. No. 241-426
U.S. Patent No. 4,798,619

KEEP OUT OF REACH OF CHILDREN.

CAUTION/PRECAUCIÓN

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)

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Next Page for Additional Precautionary Statements

For more information, please visit our web site:
www.vmanswers.com

Net contents: 2.5 gallons

Product of U.S.A.

BASF Corporation
Agricultural Products
26 Davis Drive
Research Triangle Park, NC 27709

2073067
NVA 2005-05-246-0027

BASF
The Chemical Company

FIRST AID	
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS
CAUTION!

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

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

Applicators and other handlers must wear:
- Long-sleeve shirt and long pants
- Chemical-resistant gloves, Category A
- shoes plus socks

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

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of **HABITAT® herbicide** should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply **HABITAT** or spray solutions of **HABITAT** in unlined steel (except stainless steel) containers or spray tanks.

ENVIRONMENTAL HAZARDS

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift precautions on the label.

DIRECTIONS FOR USE

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

HABITAT should be used only in accordance with recommendations on the leaflet label attached to the container. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: DO NOT store below 10° F.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

IMPORTANT

DO NOT use on food crops. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in **APPLICATION TO WATERS USED FOR IRRIGATION** section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Do not apply more than 6 pints of product (1.5 lbs. acid equivalent) per acre per year.

Aerial application is restricted to helicopter only.

Application of **HABITAT** can only be made by federal or state agencies, such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the state or local government.

Treatment to other than non-native invasive species is limited to only those plants that have been determined to be a nuisance by a federal or state government entity.

Applications to private waters: Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water In/from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply **HABITAT®** herbicide directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds, which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with **HABITAT** may not be used for irrigation purposes for 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Seasonal Irrigation Waters: **HABITAT** may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between **HABITAT** application and the first use of treated water for irrigation purposes or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply **HABITAT** to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less. DO NOT apply **HABITAT** to dry irrigation canals/ditches.

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply **HABITAT** within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Moving water: DO NOT apply within one-half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: HABITAT is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section) in or near bodies of water which may be flowing, non-flowing, or transient. **HABITAT** may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites and seasonal wet areas. See **AQUATIC USE** section of this label for precautions, restrictions, and instructions on aquatic uses.

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: HABITAT will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. **HABITAT** is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs, which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Applications of **HABITAT** are rainfast one hour after treatment.

HABITAT does not control plants which are completely submerged or have a majority of their foliage under water.

Application Methods: HABITAT must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. **HABITAT** concentrations resulting from direct application to water are not expected to be of sufficient concentration or duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of overspray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See **ADJUVANTS** section for specific recommendations). **HABITAT** may be selectively applied by using low-volume directed application techniques or may be broadcast-applied by using ground equipment, watercraft or by helicopter. In addition, **HABITAT** may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see **AERIAL APPLICATIONS** and **GROUND APPLICATIONS** sections for additional details).

HABITAT should be applied with surface or helicopter application equipment in a minimum of 5 gallons of water per acre. When applying by helicopter, follow directions under the **AERIAL APPLICATIONS** section of this label, otherwise refer to section on **GROUND APPLICATIONS** when using surface equipment.

Applications made to moving bodies of water should be made while traveling

upstream to prevent concentration of this herbicide in water. DO NOT apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffocation of some sensitive aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas.

Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash for one hour after application.

Apply **HABITAT® herbicide** at 2 to 6 pints per acre depending on species present and weed density. DO NOT exceed the maximum label rate of 6 pints per acre (1.5 lb ai/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE** section of this label for specific rates.

HABITAT may be applied as a draw down treatment in areas described above. Apply **HABITAT** to weeds after water has been drained and allow 14 days before reintroduction of water.

PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of **HABITAT** from treated soil. Injury or loss of desirable plants may result if **HABITAT** is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where **HABITAT** has been applied generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, DO NOT use the vegetative matter as mulch or compost on or around desirable species.

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determines the potential for spray drift. The applicator and the entity authorizing spraying are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY,** and **TEMPERATURE INVERSIONS**).

CONTROLLING DROPLET SIZE

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

APPLICATION HEIGHT

Making applications at the lowest possible height (helicopter, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

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

WIND

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

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

WIND EROSION

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

AERIAL APPLICATION METHODS AND EQUIPMENT HELICOPTERS ONLY

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising helicopter safety, applications should made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

GROUND APPLICATION (BROADCAST)

Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of **HABITAT®** herbicide require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **HABITAT** deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet, allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: **HABITAT** can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray run-off, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Helicopters can be used to apply **HABITAT**; however, DO NOT make applications by helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area, or when spray drift as a result of helicopter application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with **HABITAT** unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of **HABITAT** in 5 to 30 gallons of water per acre; include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the **Adjuvants** section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

GROUND APPLICATIONS

FOLIAR APPLICATIONS

Low Volume Foliar:

Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5 to 5% **HABITAT** plus surfactant (see the **ADJUVANTS** section of this label for specific recommendations). A foam reducing agent may be applied at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of **HABITAT** per acre. Excessive wetting of foliage is not recommended. See the **MIXING GUIDE** below for some suggested volumes of **HABITAT** and water.

For low volume, select proper nozzles to avoid over-application. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant. The use of an even flat fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Recommended tip sizes include 4004E, or 150-IE. For a straight stream and cone pattern, adjustable cone nozzles such as 5500 X3 or 5500 X4 may be used. Attaching a rollover valve onto a Spraying Systems Model 30 gunjet or other similar spray guns allows for the use of both a flat fan and cone tips on the same gun.

Moisten, but do not drench target vegetation causing spray solution to run off.

Low Volume Foliar with Backpacks:

For low-growing species, spray down on the crown, covering crown and

penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least two sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, face sides of the target vegetation by directing spray to at least two sides of the target in smooth zigzag motions from crown to bottom.

Low Volume Foliar with Hydraulic Handgun Application Equipment: Use same technique as described above for **Low Volume with Backpacks**.

For broadcast applications, simulate a gentle rain near the top of target vegetation, allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution which contacts the understory may result in severe injury or death of plants in the understory.

SPRAY SOLUTION MIXING GUIDE FOR LOW-VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)				
	0.5%	0.75%	1%	1.5%	5%
	(amount of **HABITAT®** herbicide to use)				
1 gallon	0.6 oz.	0.9 oz.	1.3 oz.	1.9 oz.	6.5 oz.
3 gallons	1.9 oz.	2.8 oz.	3.8 oz.	5.8 oz.	1.2 pint
4 gallons	2.5 oz.	3.8 oz.	5.1 oz.	7.7 oz.	1.6 pint
5 gallons	3.2 oz.	4.8 oz.	6.5 oz.	9.6 oz.	2 pints
50 gallons	2 pints	3 pints	4 pints	6 pints	10 quarts
100 gallons	4 pints	6 pints	8 pints	6 quarts	5 gallons

2 tablespoons = 1 fluid ounce

High Volume Foliar:

For optimum performance when spraying medium to high-density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray run-off, causing increased ground cover injury, and injury to desirable species. To prepare the spray solution, thoroughly mix **HABITAT** in water and add a surfactant (see **ADJUVANT** section for specific recommendations and rates of surfactants). A foam-reducing agent may be added at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes, but do not apply more than 6 pints of **HABITAT** per acre. Uniformly cover the foliage of the vegetation to be controlled but do not apply to run-off. Excessive wetting of foliage is not recommended.

Side Trimming:

DO NOT side trim with **HABITAT** unless severe injury or death of the treated tree can be tolerated. **HABITAT** is readily translocated and can result in death of the entire tree.

CUT SURFACE TREATMENTS

HABITAT may be used to control undesirable woody vegetation by applying the **HABITAT** solution to the cambium area of freshly cut stump surfaces or to fresh cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Do not overapply solution causing run-off from the cut surface.

Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

CUT SURFACE APPLICATIONS WITH DILUTE AND CONCENTRATE SOLUTIONS:

HABITAT may be mixed as either a concentrated or dilute solution. The dilute solution may be used for applications to the cut surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of **HABITAT** with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of **HABITAT** with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack & squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one-inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.
- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3-inch DBH tree will receive 1 injection cut and a 6-inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of **HABITAT** into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED

HABITAT® herbicide will control the following target species as specified in the BASF RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a % solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of HABITAT per acre.**

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Floating Species		
*Duckweed	*Lemna minor*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Duckweed, Giant	*Spirodela polyriza*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Frogbit	*Limnobium spongia*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Spatterdock	*Nuphar luteum*	Apply a tank-mix of 2-4 pints/acre **HABITAT** + 4 to 8 pints/acre glyphosate (0.5% **HABITAT** + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
*Water Hyacinth	*Eichhornia crassipes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
*Water Lettuce	*Pistia stratiotes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Emerged Species		
*Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tankmix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher **HABITAT** rates.
*Arrowhead, Duck-potato	*Sagittaria* spp.	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Bacopa, lemon	*Bacopa* spp.	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Parrot feather	*Myriophyllum aquaticum*	Must be foliage above water for sufficient **HABITAT** uptake. Apply 2 - 4 pints to actively growing emergent foliage.
*Pennywort	*Hydrocotyle* spp.	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Pickerelweed	*Pontederia cordata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Taro, wild; Dasheen; Elephant's Ear; Coco Yam	*Colocasia esculentum*	4-6 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
*Water lily	*Nymphaea odorata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Water primrose	*Ludwigia uruguayensis*	4-6 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.
Terrestrial/Marginal		
*Soda Apple, aquatic; Nightshade	*Solanum tampicense*	2 pts./acre applied to foliage
*Bamboo, Japanese	*Phyllostachys* spp.	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	*Schinus terebinthifolius*	2 - 4 pints/acre applied to foliage
Cattail	*Typha* spp.	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	*Sapium sebiferum*	16 to 24 oz applied to foliage
Cogon Grass	*Imperata cylindrica*	Burn foliage, fill area, that fall spray 2 qt./acre **HABITAT** + MSO applied to new growth.
Cordgrass, prairie	*Spartina* spp.	4-6 pints applied to actively growing foliage
*Cutgrass	*Zizaniopsis miliacea*	4-6 pints applied to actively growing foliage
*Elephant Grass; Napier Grass-	*Pennisetum purpureum*	3 pts./acre applied to actively growing foliage

*Not approved for use in California.

(continued)

AQUATIC SPECIES CONTROLLED *(continued)*

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal (continued)		
*Flowering rush	*Butomus typis*	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	*Arundo donax*	4 to 6 pints/acre applied in spring to actively growing foliage
*Golden Bamboo	*Phyllostachys aurea*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3-4 pints applied to actively growing foliage
Knapweeds	*Centaurea species*	Russian Knapweed - 2 to 3 pints + 1 qt./acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	*Polygonum cuspidatum*	3 to 4 pts./acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	*Melaleuca quinquenervia*	For established stands, apply 6 pints/acre **HABITAT®** herbicide + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt./A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% **HABITAT** + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
*Nutgrass; Kili'p'opu	*Cyperus rotundus*	2 pints **HABITAT** + 1 qt./acre MSO applied early postemergence
*Nutsedge	*Cyperus* spp.	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.
Phragmites; Common Reed	*Phragmites australis*	4 to 6 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to regrow to approximately 5' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
*Poison Hemlock	*Conium maculatum*	2 pints **HABITAT** + 1 qt./acre MSO applied preemergence to early postemergence to rosette, prior to flowering
Purple Loosestrife	*Lythrum salicaria*	1 pint/acre applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/acre applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pts./acre applied to actively growing foliage
Russian-Olive	*Elaeagnus angustifolia*	2 to 4 pints/acre or a 1% solution, applied to foliage
Saltcedar; Tamarisk	*Tamarix species*	Aerial apply 2 qts. **HABITAT** + 0.25%v/v NIS applied to actively growing foliage during flowering. For spot spraying use 1% solution of **HABITAT** + 0.25%v/v NIS and spray to wet foliage. After application wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control.
Smartweed	*Polygonum* spp.	2 pints/acre applied early postemergence
Sumac	*Rhus* spp.	2 to 3 pts./acre applied to foliage
Swamp Morning Glory; Water Spinach; Kangkong	*Ipomoea aquatica*	1 to 2 pints/acre **HABITAT** + 1 qt./acre MSO applied early postemergence
Torpedo Grass	*Panicum repens*	4 pints/acre (1 - 1.5% solution), ensure good coverage to actively growing foliage.
*White Top; Hoary Cress	*Cardaria draba*	1 to 2 pints/acre applied in spring, to foliage, during flowering.
Willow	*Salix* spp.	2 to 3 pts./acre **HABITAT** applied to actively growing foliage, ensure good coverage.

*Not approved for use in California.

ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE

In terrestrial sites, **HABITAT** will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of **HABITAT**. **For established biennials and perennials postemergence applications of HABITAT are recommended.**

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see "Low Volume" section of "Ground Applications"); low volume applications may provide control of the target species with less **HABITAT** per acre than is shown for the broadcast treatments. **HABITAT** should be used only in accordance with the recommendations on this label and the leaflet label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

Resistant Biotypes: Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, **HABITAT** should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Annual bluegrass	(*Poa annua*)	A
Broadleaf signalgrass	(*Brachiaria platyphylla*)	A
Canada bluegrass	(*Poa compressa*)	P
Downy brome	(*Bromus tectorum*)	A
Fescue	(*Festuca spp.*)	A/P
Foxtail	(*Setaria spp.*)	A
Italian ryegrass	(*Lolium multiflorum*)	A
Johnsongrass	(*Sorghum halepense*)	P
Kentucky bluegrass	(*Poa pratensis*)	P
Lovegrass	(*Eragrostis spp.*)	A/P
*Napier grass	(*Pennisetum purpureum*)	P
Orchardgrass	(*Dactylis glomerata*)	P
Paragrass	(*Brachiaria mutica*)	P
Quackgrass	(*Agropyron repens*)	P
Sandbur	(*Cenchrus spp.*)	A
Sand dropseed	(*Sporobolus cryptandrus*)	P
Smooth brome	(*Bromus inermis*)	P
Vaseygrass	(*Paspalum urvillei*)	P
Wild oats	(*Avena fatua*)	A
Witchgrass	(*Panicum capillare*)	A
Apply 3-4 pints per acre[1]		
Barnyardgrass	(*Schinochloa crus-gali*)	A
Beardgrass	(*Andropogon spp.*)	P
Bluegrass, Annual	(*Poa annua*)	A
*Bulrush	(*Scirpus validus*)	P
Chess	(*Bromus secalinus*)	A
Crabgrass	(*Digitaria spp.*)	A
Crowfootgrass	(*Dactyloctenium aegyptium*)	A
Fall panicum	(*Panicum dichotomiflorum*)	A
Goosegrass	(*Eleusine indica*)	A
Itchgrass	(*Rottboellia exaltata*)	A
Lovegrass	(*Eragrostis spp.*)	A
*Maidencane	(*Panicum hemitomon*)	A
Panicum, Browntop	(*Panicum fasciculatum*)	A
Panicum, Texas	(*Panicum texanum*)	A
Prairie threeawn	(*Aristida oligantha*)	P
Sandbur, Field	(*Cenchrus incertus*)	A
Signalgrass	(*Brachiaria platyphylla*)	A
Wild barley	(*Hordeum spp.*)	A
Woolly Cupgrass	(*Eriochloa villosa*)	A
Apply 4-6 pints per acre[1]		
Bahiagrass	(*Paspalum notatum*)	P
Bermudagrass[3]	(*Cynodon dactylon*)	P
Big bluestem	(*Andropogon gerardii*)	P
Dallisgrass	(*Paspalum dilatatum*)	P
Feathertop	(*Pennisetum villosum*)	P
Guineagrass	(*Panicum maximum*)	P

GRASSES *(continued)*

COMMON NAME	SPECIES	GROWTH HABIT[2]
Saltgrass[3]	(*Distichlis stricta*)	P
Sand dropseed	(*Sporobolus cryptandrus*)	P
Sprangletop	(*Leptochloa spp.*)	A
Timothy	(*Phleum pratense*)	P
Western muhly	(*Muhlenbergia frondosa*)	P

BROADLEAF WEEDS

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Burdock	(*Arctium spp.*)	B
Carpetweed	(*Mollugo verticillata*)	A
Carolina geranium	(*Geranium carolinianum*)	A
Clover	(*Trifolium spp.*)	A/P
Common chickweed	(*Stellaria media*)	A
Common ragweed	(*Ambrosia artemisiifolia*)	A
Dandelion	(*Taraxacum officinale*)	P
Dog fennel	(*Eupatorium capillifolium*)	A
Filaree	(*Erodium spp.*)	A
Fleabane	(*Erigeron spp.*)	A
Hoary vervain	(*Verbena stricta*)	P
Indian mustard	(*Brassica juncea*)	A
Kochia	(*Kochia scoparia*)	A
Lambsquarters	(*Chenopodium album*)	A
*Lespedeza	(*Lespedeza spp.*)	P
Miners lettuce	(*Montia perfoliata*)	A
Mullein	(*Verbascum spp.*)	B
Nettleleaf goosefoot	(*Chenopodium murale*)	A
Oxeye daisy	(*Chrysanthemum leucanthemum*)	P
Pepperweed	(*Lepidium spp.*)	A
Pigweed	(*Amaranthus spp.*)	A
Puncturevine	(*Tribulus terrestris*)	A
Russian thistle	(*Salsola kali*)	A
Smartweed	(*Polygonum spp.*)	A/P
Sorrell	(*Rumex spp.*)	P
Sunflower	(*Helianthus spp.*)	A
Sweet clover	(*Melilotus spp.*)	A/B
Tansymustard	(*Descurainia pinnata*)	A
Western ragweed	(*Ambrosia psilostachya*)	P
Wild carrot	(*Daucus carota*)	B
Wild lettuce	(*Lactuca spp.*)	A/B
Wild parsnip	(*Pastinaca sativa*)	B
Wild turnip	(*Brassica campestris*)	B
Woollyleaf bursage	(*Franseria tomentosa*)	P
Yellow woodsorrel	(*Oxalis stricta*)	P
Apply 3-4 pints per acre[1]		
Broom snakeweed[1]	(*Gutierrezia sarothrae*)	P
Bull thistle	(*Cirsium vulgare*)	B

(continued)

BROADLEAF WEEDS *(continued)*

COMMON NAME	SPECIES	GROWTH HABIT[2]
Burclover	(*Medicago* spp.)	A
Chickweed, Mouseear	(*Cerastium vulgatum*)	A
Clover, Hop	(*Trifolium procumbens*)	A
Cocklebur	(*Xanthium strumarium*)	A
Cudweed	(*Gnaphalium* spp.)	A
Desert Camelthorn	(*Alhagi pseudalhagi*)	P
Dock	(*Rumex* spp.)	P
Fiddleneck	(*Amsinckia intermedia*)	A
Goldenrod	(*Solidago* spp.)	P
Henbit	(*Lamium amplexicaule*)	A
Knotweed, prostrate	(*Polygonum aviculare*)	A/P
Pokeweed	(*Phytolacca americana*)	P
Purslane	(*Portulaca* spp.)	A
Pusley, Florida	(*Richardia scabra*)	A
Rocket, London	(*Sisymbrium irio*)	A
Rush skeletonweed[4]	(*Chondrilla juncea*)	B
Saltbush	(*Atriplex* spp.)	A
Shepherd's-purse	(*Capsella bursa-pastoris*)	A
Spurge, Annual	(*Euphorbia* spp.)	A
Stinging nettle[4]	(*Urtica dioica*)	P
Velvetleaf	(*Abutilon theophrasti*)	A
Yellow starthistle	(*Centaurea solstitialis*)	A
Apply 4-6 pints per acre[1]		
Arrowweed	(*Pluchea sericea*)	A
Canada thistle	(*Cirsium arvense*)	P
Giant ragweed	(*Ambrosia trifida*)	A
Grey rabbitbrush	(*Chrysothamnus nauseosus*)	P
Little mallow	(*Malva parviflora*)	B
Milkweed	(*Asclepias* spp.)	P
Primrose	(*Oenothera lunthiana*)	P
Silverleaf nightshade	(*Solanum eleagnifolium*)	P
Sowthistle	(*Sonchus* spp.)	A
Texas thistle	(*Cirsium texanum*)	P

VINES AND BRAMBLES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 1 pint per acre		
Field bindweed	(*Convolvulus arvensis*)	P
Hedge bindweed	(*Calystegia sepium*)	A
Apply 2-3 pints per acre[1]		
Wild buckwheat	(*Polygonum convolvulus*)	P
Apply 3-4 pints per acre[1]		
Greenbrier	(*Smilax* spp.)	P
Honeysuckle	(*Lonicera* spp.)	P
Morningglory	(*Ipomoea* spp.)	A/P
Poison Ivy	(*Rhus radicans*)	P
Redvine	(*Brunnichia cirrhosa*)	P
Wild rose	(*Rosa* spp.)	P

VINES AND BRAMBLES *(continued)*

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 3-4 pints per acre[1]		
Including:		
Multiflora rose	(*Rosa multiflora*)	P
McCartney rose	(*Rosa bracteata*)	P
Apply 4-6 pints per acre[1]		
*Kudzu[3]	(*Pueraria lobata*)	P
Trumpetcreeper	(*Camosis radicans*)	P
Virginia creeper	(*Parthenocissus quinquefolia*)	P
Wild grape	(*Vitis* spp.)	P

BRUSH SPECIES

COMMON NAME	SPECIES	GROWTH HABIT[2]
American beech	(*Fagus grandifolia*)	P
Ash	(*Fraxinus* spp.)	P
Bald cypress	(*Taxodium distichum*)	P
Bigleaf maple	(*Acer macrophyllum*)	P
Black locust[5]	(*Robinia pseudoacacia*)	P
Black gum	(*Nyssa sylvatica*)	P
Box elder	(*Acer negundo*)	P
Cherry	(*Prunus* spp.)	P
Chinaberry	(*Melia azedarach*)	P
Dogwood	(*Cornus* spp.)	P
Elm[5]	(*Ulmus* spp.)	P
Hawthorn	(*Crataegus* spp.)	P
Hickory	(*Carya* spp.)	P
Honeylocust[5]	(*Gleditsia triacanthos*)	P
Maple	(*Acer* spp.)	P
Mulberry	(*Morus* spp.)	P
Oak	(*Quercus* spp.)	P
Persimmon	(*Diospyros virginiana*)	P
*Pine[5]	(*Pinus* spp.)	P
Poplar	(*Populus* spp.)	P
Privet	(*Ligustrum vulgare*)	P
Red Alder	(*Alnus rubra*)	P
Red Maple	(*Acer rubrum*)	P
Russian Olive	(*Eleagnus angustifolia*)	P
Sassafras	(*Sassafras albidum*)	P
Sourwood	(*Oxydendrum arboreum*)	P
Sweetgum	(*Liquidamber styraciflua*)	P
*Water willow	(*Justica americana*)	P
Willow	(*Salix* spp.)	P
Yellow poplar	(*Liriodendron tulipifera*)	P

*Not approved for use in California

[1] The higher rates should be used where heavy or well-established infestations occur.

[2] Growth Habit - A = Annual, B = Biennial, P = Perennial

[3] Use a minimum of 75 GPA - Control of established stands may require repeat applications.

[4] For best results early postemergence applications are required.

[5] Tank mix with glyphosate or triclopyr.

[6] Tank-mix with with glyphosate.

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DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF **HABITAT® herbicide**. In no case shall BASF or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

BASF makes no other express or implied warranty, including other express or implied warranty of FITNESS or of MERCHANTABILITY. User assumes the risk of any use contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable by BASF.

Habitat is a registered trademark of BASF.

Microfoil is a trademark of Rhone Poulenc Ag Company.

Thru-Valve is a trademark of Waldrum Specialties.

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000241-00426.20050201 NVA 2005-04-246-0027
Supercedes NVA 2004-04-246-0253

BASF Corporation
Agricultural Products
26 Davis Drive
Research Triangle Park, NC 27709

BASF
The Chemical Company

Habitat®

herbicide

Active Ingredient:
Isopropylamine salt of imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid) 28.7%
Inert Ingredients 71.3%
Total 100.0%

Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-426 **U.S. Patent No. 4,798,619**
EPA Est. No. is indicated by the first digit of the code printed on this container:
4 = 241-PR-002
5 = 68586-FL-001

KEEP OUT OF REACH OF CHILDREN.
CAUTION/PRECAUCIÓN

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

FIRST AID
If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.
If in eyes: Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (435Y)
PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS CAUTION: Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.
PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistant category selection chart. Applicators and other handlers must wear: • Long sleeved shirt and long pants • Chemical-resistant gloves, Category A • shoes plus socks. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions are given for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.
PHYSICAL AND CHEMICAL HAZARDS Spray solutions of **HABITAT® herbicide** should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers. DO NOT mix, store or apply **HABITAT** or spray solutions of **HABITAT** in unlined steel (except stainless steel) containers or spray tanks.
STORAGE AND DISPOSAL: DO NOT contaminate water, food or feed by storage or disposal.
PESTICIDE STORAGE: DO NOT store below 10°F.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Attached Booklet for Additional Precautionary Statements

For more information, please visit our web site:
www.ymanswers.com

Net contents: 2.5 gallons

BASF Corporation, Agricultural Products
26 Davis Drive
Research Triangle Park, NC 27709

2073067

Product of U.S.A. NVA 2005-05-246-0027

BASF
The Chemical Company

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

- [ ] Registration
- [ ] Amendment
- [x] Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 241-426	2. EPA Product Manager James Tompkins	3. Proposed Classification [ ] None [ ] Restricted
4. Company/Product (Name) HABITAT herbicide	PM# 25	
5. Name and Address of Applicant (include ZIP Code) BASF 26 Davis Drive Research Triangle Park, NC 27709 [ ] Check if this is a new address	6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

- [ ] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated _____
- [x] Notification - Explain below.
- [x] Final printed labels in response to Agency letter dated
- [ ] "Me Too" Application.
- [ ] Other - Explain below.

NOTIFICATION
FEB 22 2005

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Notification of minor changes to Habitat herbicide label (241-426)

This notification is not subject to a fee under PRIA. Contact Jeff Birk at 919-547-2622 (phone), 919-547-2850 (fax) or by Email at birkj@basf.com

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container		[ ]

6. Manner in Which Label Is Affixed to Product: [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name	Title	Telephone No. (Include Area Code)
Jeffrey H. Birk	Global Regulatory Manager	919-547-2622

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received
(Stamped)

2. Signature	3. Title Global Regulatory Manager	
4. Typed Name Jeffrey H. Birk	5. Date February 8, 2005	

SJC

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

sent to EPA

Jacket # 009242857

Batch 39

Box 24

(241-426)

Certification with Respect to Label Integrity

version: 9/11/02

I certify that the information (including, but not limited to, text, tables, and graphics) contained in the electronic file identified below by file name and submitted with this certification is the same information as that on the paper copies of these documents included with this submission.

PROPOSED LABEL		
EPA Registration #	Date Submitted to EPA	Electronic file name
241-426	2/8/05	Habitat 2005-04-246-0027 specimen (2-1-05)

I certify that the statements that I have made on this form are true, accurate, and complete. I acknowledge that any knowingly false or misleading statements may be punishable by fine or imprisonment or both under applicable law.

Signature

2-8-05
Date

Jeffrey H. Birk
Name (typed)

Global Regulatory Manager
Title

NOTIFICATION

FEB 2 2 2005

Habitat®

herbicide

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Active Ingredient:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)* 28.7%

Inert Ingredients 71.3%

Total 100.0%

* Equivalent to 22.6% 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-426 **U.S. Patent No. 4,798,619** **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN.

CAUTION/PRECAUCIÓN

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.)

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Next Page for Additional Precautionary Statements

Net contents: _____

For more information, please visit our web site:
www.vmanswers.com

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Agricultural Products
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BASF
The Chemical Company

FIRST AID

If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS
CAUTION!

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

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

Applicators and other handlers must wear:

- Long-sleeve shirt and long pants
- Chemical-resistant gloves, Category A
- shoes plus socks

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

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of **HABITAT® herbicide** should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply **HABITAT** or spray solutions of **HABITAT** in unlined steel (except stainless steel) containers or spray tanks.

ENVIRONMENTAL HAZARDS

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift precautions on the label.

DIRECTIONS FOR USE

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

HABITAT should be used only in accordance with recommendations on the leaflet label attached to the container. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: DO NOT store below 10° F.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

IMPORTANT

DO NOT use on food crops. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in **APPLICATION TO WATERS USED FOR IRRIGATION** section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Do not apply more than 6 pints of product (1.5 lbs. acid equivalent) per acre per year.

Aerial application is restricted to helicopter only.

Application of **HABITAT® herbicide** can only be made by federal or state agencies, such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified

as aquatic pest control applicators and are authorized by the state or local government.

Treatment to other than non-native invasive species is limited to only those plants that have been determined to be a nuisance by a federal or state government entity.

Applications to private waters: Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water in/from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply **HABITAT** directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds, which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with **HABITAT** may not be used for irrigation purposes for 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Seasonal Irrigation Waters: **HABITAT** may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between **HABITAT** application and the first use of treated water for irrigation purposes or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply **HABITAT** to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less. DO NOT apply **HABITAT** to dry irrigation canals/ditches.

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply **HABITAT** within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Moving water: DO NOT apply within one-half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: **HABITAT® herbicide** is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section) in or near bodies of water which may be flowing, non-flowing, or transient. **HABITAT** may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites and seasonal wet areas. See **AQUATIC USE** section of this label for precautions, restrictions, and instructions on aquatic uses.

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: **HABITAT® herbicide** will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. **HABITAT** is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs, which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Applications of **HABITAT** are rainfast one hour after treatment.

HABITAT does not control plants which are completely submerged or have a majority of their foliage under water.

Application Methods: **HABITAT** must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. **HABITAT** concentrations resulting from direct application to water are not expected to be of sufficient concentration or duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of overspray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See **ADJUVANTS** section for specific recommendations). **HABITAT** may be selectively applied by using low-volume directed application techniques or may be broadcast-applied by using ground equipment, watercraft or by helicopter. In addition, **HABITAT** may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see **AERIAL APPLICATIONS** and **GROUND APPLICATIONS** sections for additional details).

HABITAT should be applied with surface or helicopter application equipment in a minimum of 5 gallons of water per acre. When applying by helicopter, follow directions under the **AERIAL**

APPLICATIONS section of this label, otherwise refer to section on **GROUND APPLICATIONS** when using surface equipment.

Applications made to moving bodies of water should be made while traveling upstream to prevent concentration of this herbicide in water. DO NOT apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffocation of some sensitive aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas.

Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash for one hour after application.

Apply **HABITAT** at 2 to 6 pints per acre depending on species present and weed density. DO NOT exceed the maximum label rate of 6 pints per acre (1.5 lb ai/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE** section of this label for specific rates.

HABITAT® herbicide may be applied as a draw down treatment in areas described above. Apply **HABITAT** to weeds after water has been drained and allow 14 days before reintroduction of water.

PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of **HABITAT** from treated soil. Injury or loss of desirable plants may result if **HABITAT** is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where **HABITAT** has been applied generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, DO NOT use the vegetative matter as mulch or compost on or around desirable species.

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determines the potential for spray drift. The applicator and the entity authorizing spraying are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY**, and **TEMPERATURE INVERSIONS**).

CONTROLLING DROPLET SIZE

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

APPLICATION HEIGHT

Making applications at the lowest possible height (helicopter, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

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

WIND

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the

morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

WIND EROSION

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

AERIAL APPLICATION METHODS AND EQUIPMENT HELICOPTERS ONLY

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed ¾ the length of the rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising helicopter safety, applications should made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

GROUND APPLICATION (BROADCAST)

Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of **HABITAT® herbicide** require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized.

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **HABITAT** deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet, allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: **HABITAT** can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray run-off, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Helicopters can be used to apply **HABITAT**; however, DO NOT make applications by helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area, or when spray drift as a result of helicopter application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with **HABITAT** unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of **HABITAT** in 5 to 30 gallons of water per acre; include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the **Adjuvants** section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

GROUND APPLICATIONS

FOLIAR APPLICATIONS

Low Volume Foliar:

Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5 to 5% **HABITAT** plus surfactant (see the **ADJUVANTS** section of this label for specific recommendations). A foam reducing agent may be applied at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of **HABITAT** per acre. Excessive wetting of foliage is not recommended. See the **MIXING GUIDE** below for some suggested volumes of **HABITAT** and water.

For low volume, select proper nozzles to avoid over-application. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant. The use of an even flat fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Recommended tip sizes include 4004E, or 1504E. For a straight stream and cone pattern, adjustable cone nozzles such as 5500 X3 or 5500 X4 may be used. Attaching a rollover valve onto a Spraying Systems Model 30 gunjet or other similar spray guns allows for the use of both a flat fan and cone tips on the same gun.

Moisten, but do not drench target vegetation causing spray solution to run off.

Low Volume Foliar with Backpacks:

For low-growing species, spray down on the crown, covering crown and penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least two sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, face sides of the target vegetation by directing spray to at least two sides of the target in smooth zigzag motions from crown to bottom.

Low Volume Foliar with Hydraulic Handgun Application Equipment:

Use same technique as described above for **Low Volume with Backpacks.**

For broadcast applications, simulate a gentle rain near the top of target vegetation, allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution which contacts the understory may result in severe injury or death of plants in the understory.

SPRAY SOLUTION MIXING GUIDE FOR LOW-VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)				
	0.5%	0.75%	1%	1.5%	5%
	(amount of HABITAT to use)				
1 gallon	0.6 oz.	0.9 oz	1.3 oz.	1.9 oz	6.5 oz.
3 gallons	1.9 oz.	2.6 oz.	3.8 oz.	5.8 oz.	1.2 pint
4 gallons	2.6 oz.	3.8 oz.	5.1 oz.	7.7 oz.	1.6 pint
5 gallons	3.2 oz.	4.8 oz	6.5 oz	9.6 oz.	2 pints
50 gallons	2 pints	3 pints	4 pints	6 pints	10 quarts
100 gallons	4 pints	6 pints	8 pints	6 quarts	5 gallons

2 tablespoons = 1 fluid ounce

High Volume Foliar:

For optimum performance when spraying medium to high-density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray run-off, causing increased ground cover injury, and injury to desirable species. To prepare the spray solution, thoroughly mix **HABITAT® herbicide** in water and add a surfactant (see **ADJUVANT** section for specific recommendations and rates of surfactants). A foam-reducing agent may be added at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes, but do not apply more than 6 pints of **HABITAT** per acre. Uniformly cover the foliage of the vegetation to be controlled but do not apply to run-off. Excessive wetting of foliage is not recommended.

Side Trimming:

DO NOT side trim with **HABITAT** unless severe injury or death of the treated tree can be tolerated. **HABITAT** is readily translocated and can result in death of the entire tree.

CUT SURFACE TREATMENTS

HABITAT may be used to control undesirable woody vegetation by applying the **HABITAT** solution to the cambium area of freshly cut stump surfaces or to fresh cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Do not overapply solution causing run-off from the cut surface.

Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

CUT SURFACE APPLICATIONS WITH DILUTE AND CONCENTRATE SOLUTIONS:

HABITAT may be mixed as either a concentrated or dilute solution. The dilute solution may be used for applications to the cut surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of **HABITAT** with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of **HABITAT** with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack & squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one-inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.
- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3-inch DBH tree will receive 1 injection cut and a 6-inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of **HABITAT** into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED

HABITAT® herbicide will control the following target species as specified in the BASF RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a % solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of HABITAT per acre.**

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Floating Species		
Duckweed	*Lemna minor*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Duckweed, Giant	*Spirodela polyrhiza*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Frogbit	*Limnobium spongia*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Spatterdock	*Nuphar lutea*	Apply a tank-mix of 2-4 pints/acre **HABITAT** + 4 to 6 pints/acre glyphosate (0.5% **HABITAT** + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
Water Hyacinth	*Eichhornia crassipes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
Water Lettuce	*Pistia stratiotes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Emerged Species		
Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tank-mix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher **HABITAT** rates.
Arrowhead, Duck-potato	*Sagittaria spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Bacopa, lemon	*Bacopa spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Parrot feather	*Myriophyllum aquaticum*	Must be foliage above water for sufficient **HABITAT** uptake. Apply 2 - 4 pints to actively growing emergent foliage.
Pennywort	*Hydrocotyle spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Pickerelweed	*Pontederia cordata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Taro, wild; Dasheen; Elephant's Ear; Coco Yam	*Colocasia esculentum*	4-6 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
Water lily	*Nymphaea odorata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Water primrose	*Ludwigia uruguayensis*	4-6 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.

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(continued)

AQUATIC SPECIES CONTROLLED *(continued)*

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal		
*Soda Apple, aquatic; Nightshade	*Solanum tampicense*	2 pts./acre applied to foliage
*Bamboo, Japanese	*Phyllostachys spp.*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	*Schinus terebinthifolius*	2 - 4 pints/acre applied to foliage
Cattail	*Typha spp.*	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	*Sapium sebiferum*	16 to 24 oz applied to foliage
Cogon Grass	*Imperata cylindrica*	Burn foliage, till area, that fall spray 2 qt./acre **HABITAT® herbicide** + MSO applied to new growth.
Cordgrass, prairie	*Spartina spp*	4-6 pints applied to actively growing foliage
*Cutgrass	*Zizaniopsis miliacea*	4-6 pints applied to actively growing foliage
*Elephant Grass; Napier Grass-	*Pennisetum purpureum*	3 pts./acre applied to actively growing foliage
*Flowering rush	*Butomus typla*	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	*Arundo donax*	4 to 6 pints/acre applied in spring to actively growing foliage
*Golden Bamboo	*Phyllostachys aurea*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3-4 pints applied to actively growing foliage
Knapweeds	*Centaurea species*	Russian Knapweed - 2 to 3 pints + 1 qt./acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	*Polygonum cuspidatum*	3 to 4 pts./acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	*Melaleuca quinquenervia*	For established stands, apply 6 pints/acre **HABITAT® herbicide** + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt./A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% **HABITAT** + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
*Nutgrass; Kili'p'opu	*Cyperus rotundus*	2 pints **HABITAT** + 1 qt./acre MSO applied early postemergence
*Nutsedge	*Cyperus spp.*	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.

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AQUATIC SPECIES CONTROLLED *(continued)*

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal (Cont.)		
Phragmites; Common Reed	*Phragmites australis*	4 to 6 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to regrow to approximately 6' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
Poison Hemlock	*Conium maculatum*	2 pints **HABITAT® herbicide** + 1 qt./acre MSO applied preemergence to early postemergence to rosette, prior to flowering
Purple Loosestrife	*Lythrum salicaria*	1 pint/acre applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/acre applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pts./acre applied to actively growing foliage
Russian-Olive	*Elaeagnus angustifolia*	2 to 4 pints/acre or a 1% solution, applied to foliage
Saltcedar; Tamarisk	*Tamarix species*	Aerial apply 2 qts. **HABITAT** + 0.25%v/v NIS applied to actively growing foliage during flowering. For spot spraying use 1% solution of **HABITAT** + 0.25%v/v NIS and spray to wet foliage. After application wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control.
Smartweed	*Polygonum spp.*	2 pints/acre applied early postemergence
Sumac	*Rhus spp.*	2 to 3 pts./acre applied to foliage
Swamp Morning Glory; Water Spinach; Kangkong	*Ipomoea aquatica*	1 to 2 pints/acre **HABITAT** + 1 qt./acre MSO applied early postemergence
Torpedo Grass	*Panicum repens*	4 pints/acre (1 - 1.5% solution), ensure good coverage to actively growing foliage.
White Top; Hoary Cress	*Cardaria drabe*	1 to 2 pints/acre applied in spring, to foliage, during flowering.
Willow	*Salix spp.*	2 to 3 pts./acre **HABITAT** applied to actively growing foliage, ensure good coverage.

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ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE

In terrestrial sites, **HABITAT** will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of **HABITAT. For established biennials and perennials postemergence applications of HABITAT are recommended.**

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see "Low Volume" section of "Ground Applications"); low volume applications may provide control of the target species with less **HABITAT** per acre than is shown for the broadcast treatments. **HABITAT** should be used only in accordance with the recommendations on this label and the leaflet label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

Resistant Biotypes: Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, **HABITAT** should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Annual bluegrass	(*Poa annua*)	A
Broadleaf signalgrass	(*Brachiaria platyphylla*)	A
Canada bluegrass	(*Poa compressa*)	P
Downy brome	(*Bromus tectorum*)	A
Fescue	(*Festuca spp.*)	A/P
Foxtail	(*Setaria spp.*)	A
Italian ryegrass	(*Lolium multiflorum*)	A
Johnsongrass	(*Sorghum halepense*)	P
Kentucky bluegrass	(*Poa pratensis*)	P
Lovegrass	(*Eragrostis spp.*)	A/P
Napier grass	(*Pennisetum purpureum*)	P
Orchardgrass	(*Dactylis glomerata*)	P
Paragrass	(*Brachiaria mutica*)	P
Quackgrass	(*Agropyron repens*)	P
Sandbur	(*Cenchrus spp.*)	A
Sand dropseed	(*Sporobolus cryptandrus*)	P
Smooth brome	(*Bromus inermis*)	P
Vaseygrass	(*Paspalum urvillei*)	P
Wild oats	(*Avena fatua*)	A
Witchgrass	(*Panicum capillare*)	A
Apply 3-4 pints per acre[1]		
Barnyardgrass	(*Echinochloa crus-galli*)	A
Beardgrass	(*Andropogon spp.*)	P
Bluegrass, Annual	(*Poa annua*)	A
Bullrush	(*Scirpus validus*)	P
Cheat	(*Bromus secalinus*)	A
Crabgrass	(*Digitaria spp.*)	A
Crowfootgrass	(*Dactyloctenium aegyptium*)	A
Fall panicum	(*Panicum dichotomiflorum*)	A
Goosegrass	(*Eleusine indica*)	A
Ilchgrass	(*Rottboellia exaltata*)	A
Lovegrass	(*Eragrostis spp.*)	A
Maidencane	(*Panicum hemitomon*)	A
Panicum, Browntop	(*Panicum fasciculatum*)	A
Panicum, Texas	(*Panicum texanum*)	A
Prairie threeawn	(*Aristida oligantha*)	P
Sandbur, Field	(*Cenchrus incertus*)	A
Signalgrass	(*Brachiaria platyphylla*)	A
Wild barley	(*Hordeum spp.*)	A
Woolly Cupgrass	(*Eriochloa villosa*)	A
Apply 4-6 pints per acre[1]		
Bahiagrass	(*Paspalum notatum*)	P
Bermudagrass[3]	(*Cynodon dactylon*)	P
Big bluestem	(*Andropogon gerardii*)	P
Dallisgrass	(*Paspalum dilatatum*)	P
Feathertop	(*Pennisetum villosum*)	P
Guineagrass	(*Panicum maximum*)	P
Saltgrass[3]	(*Distichlis stricta*)	P
Sand dropseed	(*Sporobolus cryptandrus*)	P

GRASSES (CONT)

COMMON NAME	SPECIES	GROWTH HABIT[2]
Sprangletop	(*Leptochloa spp.*)	A
Timothy	(*Phleum pratense*)	P
Wirestem muhly	(*Muhlenbergia frondosa*)	P

BROADLEAF WEEDS

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Burdock	(*Arctium spp.*)	B
Carpetweed	(*Mollugo verticillata*)	A
Carolina geranium	(*Geranium carolinianum*)	A
Clover	(*Trifolium spp.*)	A/P[4]
Common chickweed	(*Stellaria media*)	A
Common ragweed	(*Ambrosia artemisiifolia*)	A
Dandelion	(*Taraxacum officinale*)	P
Dog fennel	(*Eupatorium capillifolium*)	A
Filaree	(*Erodium spp.*)	A
Fleabane	(*Erigeron spp.*)	A
Hoary verbena	(*Verbena stricta*)	P
Indian mustard	(*Brassica juncea*)	A
Kochia	(*Kochia scoparia*)	A
Lambsquarters	(*Chenopodium album*)	A
Lespedeza	(*Lespedeza spp.*)	P
Miners lettuce	(*Montia perfoliata*)	A
Mullein	(*Verbascum spp.*)	B
Nettleleaf goosefoot	(*Chenopodium murale*)	A
Oxeye daisy	(*Chrysanthemum leucanthemum*)	P
Pepperweed	(*Lepidium spp.*)	A
Pigweed	(*Amaranthus spp.*)	A
Puncturevine	(*Tribulus terrestris*)	A
Russian thistle	(*Salsola kali*)	A
Smartweed	(*Polygonum spp.*)	A/P
Sorrel	(*Rumex spp.*)	P
Sunflower	(*Helianthus spp.*)	A
Sweet clover	(*Melilotus spp.*)	A/B
Tansymustard	(*Descurainia pinnata*)	A
Western ragweed	(*Ambrosia psilostachya*)	P
Wild carrot	(*Daucus carota*)	B
Wild lettuce	(*Lactuca spp.*)	A/B
Wild parsnip	(*Pastinaca sativa*)	B
Wild turnip	(*Brassica campestris*)	B
Woollyleaf bursage	(*Franseria tomentosa*)	P
Yellow woodsorrel	(*Oxalis stricta*)	P
Apply 3-4 pints per acre[1]		
Broom snakeweed[1]	(*Gutierrezia sarothrae*)	P
Bull thistle	(*Cirsium vulgare*)	B
Burclover	(*Medicago spp.*)	A
Chickweed, Mouseear	(*Cerastium vulgatum*)	A
Clover, Tiny	(*Trifolium procumbens*)	A
Cocklebur	(*Xanthium strumarium*)	A

BROADLEAF WEEDS (CONT)

COMMON NAME	SPECIES	GROWTH HABIT[2]
Cudweed	*(Gnaphalium spp.)*	A
Desert Camelthorn	*(Alhagi pseudalhagi)*	P
Dock	*(Rumex spp.)*	P
Fiddleneck	*(Amsinckia intermedia)*	A
Goldenrod	*(Solidago spp.)*	P
Henbit	*(Lamium amplexicaule)*	A
Knotweed, prostrate	*(Polygonum aviculare)*	A/P
Pokeweed	*(Phytolacca americana)*	P
Purslane	*(Portulaca spp.)*	A
Pusley, Florida	*(Richardia scabra)*	A
Rocket, London	*(Sisymbrium irio)*	A
Rush skeletonweed[4]	*(Chondrilla juncea)*	B
Saltbush	*(Atriplex spp.)*	A
Shepherd's-purse	*(Capsella bursa-pastoris)*	A
Spurge, Annual	*(Euphorbia spp.)*	A
Stinging nettle[4]	*(Urtica dioica)*	P
Velvetleaf	*(Abutilon theophrasti)*	A
Yellow starthistle	*(Centaurea solstitialis)*	A
Apply 4-6 pints per acre[1]		
Arrowwood	*(Pluchea sericea)*	A
Canada thistle	*(Cirsium arvense)*	P
Giant ragweed	*(Ambrosia trifida)*	A
Grey rabbitbrush	*(Chrysothamnus nauseosus)*	P
Little mallow	*(Malva rotundifolia)*	B
Milkweed	*(Asclepias spp.)*	P
Primrose	*(Oenothera hookeriana)*	P
Silverleaf nightshade	*(Solanum elaeagnifolium)*	P
Sowthistle	*(Sonchus spp.)*	A
Texas thistle	*(Cirsium texanum)*	P

VINES AND BRAMBLES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 1 pint per acre		
Field bindweed	*(Convolvulus arvensis)*	P
Hedge bindweed	*(Calystegia sepium)*	A
Apply 2-3 pints per acre[1]		
Wild buckwheat	*(Polygonum scandens)*	P
Apply 3-4 pints per acre[1]		
Greenbriar	*(Smilax spp.)*	P
Honeysuckle	*(Lonicera spp.)*	P
Morningglory	*(Ipomoea spp.)*	A/P
Poison ivy	*(Rhus radicans)*	P
Redvine	*(Brunnichia cirrhosa)*	P
Wild rose	*(Rosa spp.)*	P
Including,		
Multiflora rose	*(Rosa multiflora)*	P
McCartney rose	*(Rosa bracteata)*	P
Apply 4-6 pints per acre[1]		
Kudzu[7]	*(Pueraria lobata)*	P
Trumpetcreeper	*(Campsis radicans)*	P
Virginia creeper	*(Parthenocissus quinquefolia)*	P
Wild grape	*(Vitis spp.)*	P

BRUSH SPECIES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 4-6 pints per acre[1]		
American beech	*(Fagus grandifolia)*	P
Ash	*(Fraxinus spp.)*	P
Bald cypress	*(Taxodium distichum)*	P
Bigleaf maple	*(Acer macrophylum)*	P
Black locust[3]	*(Robinia pseudoacacia)*	P
Black gum	*(Nyssa sylvatica)*	P
Box elder	*(Acer negundo)*	P
Cherry	*(Prunus spp.)*	P
Chinaberry	*(Melia azadarach)*	P
Dogwood	*(Cornus spp.)*	P
Elm[5]	*(Ulmus spp.)*	P
Hawthorn	*(Crataegus spp.)*	P
Hickory	*(Carya spp.)*	P
Honeylocust[3]	*(Gleditsia triacanthos)*	P
Maple	*(Acer spp.)*	P
Mulberry	*(Morus spp.)*	P
Oak	*(Quercus spp.)*	P
Persimmon	*(Diospyros virginiana)*	P
Pine[5]	*(Pinus spp.)*	P
Poplar	*(Populus spp.)*	P
Privet	*(Ligustrum vulgare)*	P
Red Alder	*(Alnus rubra)*	P
Red Maple	*(Acer rubrum)*	P
Russian Olive	*(Elaeagnus angustifolia)*	P
Sassafras	*(Sassafras albidum)*	P
Sourwood	*(Oxydendrum arboreum)*	P
Sweetgum	*(Liquidambar styraciflua)*	P
Water willow	*(Justicia americana)*	P
Willow	*(Salix spp.)*	P
Yellow poplar	*(Liriodendron tulipifera)*	P

[1] The higher rates should be used where heavy or well-established infestations occur.
[2] Growth Habit A = Annual, B = Biennial, P = Perennial
[3] Use a minimum of 75 GPA - Control of established stands may require repeat applications.
[4] For best results early postemergence applications are required.
[5] Tank mix with glyphosate or triclopyr.
[6] Tank-mix with with glyphosate.
[7] Not approved for use in California.

For more information, please visit our web site

www.vmanswers.com

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF **HABITAT® herbicide**. In no case shall BASF or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

BASF makes no other express or implied warranty, including other express or implied warranty of FITNESS or of MERCHANTABILITY. User assumes the risk of any use contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable by BASF.

Habitat is a registered trademark of BASF.

Microfoil is a trademark of Rhone Poulenc Ag Company.

Thru-Valve is a trademark of Waldrum Specialties.

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BASF Corporation
Agricultural Products
26 Davis Drive
Research Triangle Park, NC 27709

BASF

The Chemical Company

Habitat®

herbicide

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Active ingredient:

Isopropylamine salt of imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)* 28.7%

Inert ingredients 71.3%

Total 100.0%

* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-426 **U.S. Patent No. 4,798,619** **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN.

CAUTION/PRECAUCIÓN

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.)

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Next Page for Additional Precautionary Statements

Net contents: _____

For more information, please visit our web site: www.vmanswers.com

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Agricultural Products
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Research Triangle Park, NC 27709

BASF
The Chemical Company

FIRST AID

If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible • Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS
CAUTION!

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

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

Applicators and other handlers must wear:

- Long-sleeve shirt and long pants
- Chemical-resistant gloves, Category A
- shoes plus socks

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

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of **HABITAT® herbicide** should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply **HABITAT** or spray solutions of **HABITAT** in unlined steel (except stainless steel) containers or spray tanks.

ENVIRONMENTAL HAZARDS

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift precautions on the label.

DIRECTIONS FOR USE

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

HABITAT should be used only in accordance with recommendations on the leaflet label attached to the container. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: DO NOT store below 10° F.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

IMPORTANT

DO NOT use on food crops. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in **APPLICATION TO WATERS USED FOR IRRIGATION** section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Do not apply more than 6 pints of product (1.5 lbs. acid equivalent) per acre per year.

Aerial application is restricted to helicopter only.

Application of **HABITAT® herbicide** can only be made by federal or state agencies, such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified

as aquatic pest control applicators and are authorized by the state or local government.

Treatment to other than non-native invasive species is limited to only those plants that have been determined to be a nuisance by a federal or state government entity.

Applications to private waters: Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water in/from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply **HABITAT** directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds, which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with **HABITAT** may not be used for irrigation purposes for 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Seasonal Irrigation Waters: **HABITAT** may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between **HABITAT** application and the first use of treated water for irrigation purposes or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply **HABITAT** to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less. DO NOT apply **HABITAT** to dry irrigation canals/ditches

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply **HABITAT** within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Moving water: DO NOT apply within one-half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: **HABITAT® herbicide** is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section) in or near bodies of water which may be flowing, non-flowing, or transient. **HABITAT** may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites and seasonal wet areas. See **AQUATIC USE** section of this label for precautions, restrictions, and instructions on aquatic uses

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: **HABITAT® herbicide** will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. **HABITAT** is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs, which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Applications of **HABITAT** are rainfast one hour after treatment.

HABITAT does not control plants which are completely submerged or have a majority of their foliage under water.

Application Methods: **HABITAT** must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. **HABITAT** concentrations resulting from direct application to water are not expected to be of sufficient concentration or duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of overspray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See **ADJUVANTS** section for specific recommendations). **HABITAT** may be selectively applied by using low-volume directed application techniques or may be broadcast-applied by using ground equipment, watercraft or by helicopter. In addition, **HABITAT** may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see **AERIAL APPLICATIONS** and **GROUND APPLICATIONS** sections for additional details).

HABITAT should be applied with surface or helicopter application equipment in a minimum of 5 gallons of water per acre. When applying by helicopter, follow directions under the **AERIAL**

APPLICATIONS section of this label, otherwise refer to section on **GROUND APPLICATIONS** when using surface equipment.

Applications made to moving bodies of water should be made while traveling upstream to prevent concentration of this herbicide in water. DO NOT apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffocation of some sensitive aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas.

Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash for one hour after application.

Apply **HABITAT** at 2 to 6 pints per acre depending on species present and weed density. DO NOT exceed the maximum label rate of 6 pints per acre (1.5 lb ai/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE** section of this label for specific rates.

HABITAT® herbicide may be applied as a draw down treatment in areas described above. Apply **HABITAT** to weeds after water has been drained and allow 14 days before reintroduction of water.

PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of **HABITAT** from treated soil. Injury or loss of desirable plants may result if **HABITAT** is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where **HABITAT** has been applied generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, DO NOT use the vegetative matter as mulch or compost on or around desirable species.

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determines the potential for spray drift. The applicator and the entity authorizing spraying are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY**, and **TEMPERATURE INVERSIONS**).

CONTROLLING DROPLET SIZE

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

APPLICATION HEIGHT

Making applications at the lowest possible height (helicopter, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

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

WIND

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the

morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

WIND EROSION

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

AERIAL APPLICATION METHODS AND EQUIPMENT HELICOPTERS ONLY

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed ¾ the length of the rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising helicopter safety, applications should made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances

GROUND APPLICATION (BROADCAST)

Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of **HABITAT® herbicide** require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized.

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **HABITAT** deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet, allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: **HABITAT** can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray run-off, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Helicopters can be used to apply **HABITAT**; however, DO NOT make applications by helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area, or when spray drift as a result of helicopter application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with **HABITAT** unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of **HABITAT** in 5 to 30 gallons of water per acre; Include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the **Adjuvants** section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

GROUND APPLICATIONS

FOLIAR APPLICATIONS

Low Volume Foliar:

Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5 to 5% **HABITAT** plus surfactant (see the **ADJUVANTS** section of this label for specific recommendations). A foam reducing agent may be applied at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of **HABITAT** per acre. Excessive wetting of foliage is not recommended. See the **MIXING GUIDE** below for some suggested volumes of **HABITAT** and water.

For low volume, select proper nozzles to avoid over-application. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant. The use of an even flat fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Recommended tip sizes include 4004E, or 1504E. For a straight stream and cone pattern, adjustable cone nozzles such as 5500 X3 or 5500 X4 may be used. Attaching a rollover valve onto a Spraying Systems Model 30 gunjet or other similar spray guns allows for the use of both a flat fan and cone tips on the same gun.

Moisten, but do not drench target vegetation causing spray solution to run off.

Low Volume Foliar with Backpacks:

For low-growing species, spray down on the crown, covering crown and penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least two sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, face sides of the target vegetation by directing spray to at least two sides of the target in smooth zigzag motions from crown to bottom.

Low Volume Foliar with Hydraulic Handgun Application Equipment:

Use same technique as described above for **Low Volume with Backpacks**.

For broadcast applications, simulate a gentle rain near the top of target vegetation, allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution which contacts the understory may result in severe injury or death of plants in the understory.

SPRAY SOLUTION MIXING GUIDE FOR LOW-VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)				
	0.5%	0.75%	1%	1.5%	5%
	(amount of **HABITAT** to use)				
1 gallon	0.6 oz.	0.9 oz.	1.3 oz.	1.9 oz.	6.5 oz.
3 gallons	1.9 oz.	2.8 oz.	3.8 oz.	5.8 oz.	1.2 pint
4 gallons	2.5 oz.	3.8 oz.	5.1 oz.	7.7 oz.	1.6 pint
5 gallons	3.2 oz.	4.8 oz.	6.5 oz.	9.6 oz.	2 pints
50 gallons	2 pints	3 pints	4 pints	6 pints	10 quarts
100 gallons	4 pints	6 pints	8 pints	6 quarts	5 gallons

2 tablespoons = 1 fluid ounce

High Volume Foliar:

For optimum performance when spraying medium to high-density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray run-off, causing increased ground cover injury, and injury to desirable species. To prepare the spray solution, thoroughly mix **HABITAT® herbicide** in water and add a surfactant (see **ADJUVANT** section for specific recommendations and rates of surfactants). A foam-reducing agent may be added at the recommended label rate, if needed. For control of difficult species (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes, but do not apply more than 6 pints of **HABITAT** per acre. Uniformly cover the foliage of the vegetation to be controlled but do not apply to run-off. Excessive wetting of foliage is not recommended.

Side Trimming:

DO NOT side trim with **HABITAT** unless severe injury or death of the treated tree can be tolerated. **HABITAT** is readily translocated and can result in death of the entire tree.

CUT SURFACE TREATMENTS

HABITAT may be used to control undesirable woody vegetation by applying the **HABITAT** solution to the cambium area of freshly cut stump surfaces or to fresh cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Do not overapply solution causing run-off from the cut surface.

Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

CUT SURFACE APPLICATIONS WITH DILUTE AND CONCENTRATE SOLUTIONS:

HABITAT may be mixed as either a concentrated or dilute solution. The dilute solution may be used for applications to the cut surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of **HABITAT** with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of **HABITAT** with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack & squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one-inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.
- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3-inch DBH tree will receive 1 injection cut and a 6-inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of **HABITAT** into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED

HABITAT® herbicide will control the following target species as specified in the BASF RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a % solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of HABITAT per acre.**

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Floating Species		
*Duckweed	*Lemna minor*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Duckweed, Giant	*Spirodela polyriza*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Frogbit	*Limnobium spongia*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Spatterdock	*Nuphar lutcum*	Apply a tank-mix of 2-4 pints/acre **HABITAT** + 4 to 6 pints/acre glyphosate (0.5% **HABITAT** + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
*Water Hyacinth	*Eichhornia crassipes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
*Water Lettuce	*Pistia stratiotes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Emerged Species		
*Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tank-mix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher **HABITAT** rates.
*Arrowhead, Duck-potato	*Sagittaria spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Bacopa, lemon	*Bacopa spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Parrot feather	*Myriophyllum aquaticum*	Must be foliage above water for sufficient **HABITAT** uptake. Apply 2 - 4 pints to actively growing emergent foliage.
*Pennywort	*Hydrocotyle spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage
*Pickerelweed	*Pontederia cordata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Taro, wild, Dasheen; Elephant's Ear; Coco Yam	*Colocasia esculentum*	4-6 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
*Water lily	*Nymphaea odorata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
*Water primrose	*Ludwigia uruguayensis*	4-6 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.

* Not approved for use in California

(continued)

AQUATIC SPECIES CONTROLLED *(continued)*

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal		
*Soda Apple, aquatic; Nightshade	*Solanum tampicense*	2 pts./acre applied to foliage
*Bamboo, Japanese	*Phyllostachys spp.*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper, Christmasberry	*Schinus terebinthifolius*	2 - 4 pints/acre applied to foliage
Cattail	*Typha spp.*	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	*Sapium sebiferum*	16 to 24 oz applied to foliage
Cogon Grass	*Imperata cylindrica*	Burn foliage, till area, that fall spray 2 qt./acre **HABITAT® herbicide** + MSO applied to new growth.
Cordgrass, prairie	*Spartina spp.*	4-6 pints applied to actively growing foliage
*Cutgrass	*Zizaniopsis miliacea*	4-6 pints applied to actively growing foliage
*Elephant Grass; Napier Grass-	*Pennisetum purpureum*	3 pts./acre applied to actively growing foliage
*Flowering rush	*Butomus typha*	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	*Arundo donax*	4 to 6 pints/acre applied in spring to actively growing foliage
*Golden Bamboo	*Phyllostachys aurea*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3-4 pints applied to actively growing foliage
Knapweeds	*Centaurea species*	Russian Knapweed - 2 to 3 pints + 1 qt./acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	*Polygonum cuspidatum*	3 to 4 pts./acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	*Melaleuca quinquenervia*	For established stands, apply 6 pints/acre **HABITAT® herbicide** + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt./A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% **HABITAT** + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
*Nutgrass; Kili'p'opu	*Cyperus rotundus*	2 pints **HABITAT** + 1 qt./acre MSO applied early postemergence
*Nutsedge	*Cyperus spp.*	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.

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AQUATIC SPECIES CONTROLLED *(continued)*

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal (Cont.)		
Phragmites; Common Reed	*Phragmites australis*	4 to 6 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to regrow to approximately 5' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
*Poison Hemlock	*Conium maculatum*	2 pints **HABITAT®** herbicide + 1 qt./acre MSO applied preemergence to early postemergence to rosette, prior to flowering
Purple Loosestrife	*Lythrum salicaria*	1 pint/acre applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/acre applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pts./acre applied to actively growing foliage
Russian-Olive	*Elaeagnus angustifolia*	2 to 4 pints/acre or a 1% solution, applied to foliage
Saltcedar; Tamarisk	*Tamarix species*	Aerial apply 2 qts. **HABITAT** + 0.25%v/v NIS applied to actively growing foliage during flowering. For spot spraying use 1% solution of **HABITAT** + 0.25%v/v NIS and spray to wet foliage. After application wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control.
Smartweed	*Polygonum* spp.	2 pints/acre applied early postemergence
Sumac	*Rhus* spp.	2 to 3 pts./acre applied to foliage
Swamp Morning Glory; Water Spinach; Kangkong	*Ipomoea aquatica*	1 to 2 pints/acre **HABITAT** + 1 qt./acre MSO applied early postemergence
Torpedo Grass	*Panicum repens*	4 pints/acre (1 - 1.5% solution), ensure good coverage to actively growing foliage.
*White Top; Hoary Cress	*Cardaria draba*	1 to 2 pints/acre applied in spring, to foliage, during flowering.
Willow	*Salix* spp.	2 to 3 pts./acre **HABITAT** applied to actively growing foliage, ensure good coverage.

* Not approved for use in California

ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE

In terrestrial sites, **HABITAT** will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of **HABITAT**. **For established biennials and perennials postemergence applications of HABITAT are recommended.**

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see "Low Volume" section of "Ground Applications"); low volume applications may provide control of the target species with less **HABITAT** per acre than is shown for the broadcast treatments. **HABITAT** should be used only in accordance with the recommendations on this label and the leaflet label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

Resistant Biotypes: Naturally occuring biotypes (a plant within a given species that has a slightly different, but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occuring resistant biotypes are present in an area, **HABITAT** should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Annual bluegrass	(*Poa annua*)	A
Broadleaf signalgrass	(*Brachiaria platyphylla*)	A
Canada bluegrass	(*Poa compressa*)	P
Downy brome	(*Bromus tectorum*)	A
Fescue	(*Festuca spp.*)	A/P
Foxtail	(*Setaria spp.*)	A
Italian ryegrass	(*Lolium multiflorum*)	A
Johnsongrass	(*Sorghum halepense*)	P
Kentucky bluegrass	(*Poa pratensis*)	P
Lovegrass	(*Eragrostis spp.*)	A/P
*Napier grass	(*Pennisetum purpureum*)	P
Orchardgrass	(*Dactylis glomerata*)	P
Paragrass	(*Brachiaria mutica*)	P
Quackgrass	(*Agropyron repens*)	P
Sandbur	(*Cenchrus spp.*)	A
Sand dropseed	(*Sporobolus cryptandrus*)	P
Smooth brome	(*Bromus inermis*)	P
Vaseygrass	(*Paspalum urvillei*)	P
Wild oats	(*Avena fatua*)	A
Witchgrass	(*Panicum capillare*)	A
Apply 3-4 pints per acre[1]		
Barnyardgrass	(*Echinochloa crus-galli*)	A
Beardgrass	(*Andropogon spp.*)	P
Bluegrass, Annual	(*Poa annua*)	A
*Bahaiagrass	(*Sorghum vulgare*)	P
Cheat	(*Bromus secalinus*)	A
Crabgrass	(*Digitaria spp.*)	A
Crowfootgrass	(*Dactyloctenium aegyptium*)	A
Fall panicum	(*Panicum dichotomiflorum*)	A
Goosegrass	(*Eleusine indica*)	A
Itchgrass	(*Rottboellia exaltata*)	A
Lovegrass	(*Eragrostis spp.*)	A
*Maidencane	(*Panicum hemitomon*)	A
Panicum, Browntop	(*Panicum fasciculatum*)	A
Panicum, Texas	(*Panicum texanum*)	A
Prairie threeawn	(*Aristida oligantha*)	P
Sandbur, Field	(*Cenchrus incertus*)	A
Signalgrass	(*Brachiaria platyphylla*)	A
Wild barley	(*Hordeum spp.*)	A
Wooly Cupgrass	(*Eriochloa villosa*)	A
Apply 4-6 pints per acre[1]		
Bahagrass	(*Paspalum notatum*)	P
Bermudagrass[1]	(*Cynodon dactylon*)	P
Big bluestem	(*Andropogon gerardii*)	P
Dallisgrass	(*Paspalum dilatatum*)	P
Feathertop	(*Pennisetum villosum*)	P
Guineagrass	(*Panicum maximum*)	P
Saltgrass[1]	(*Distichlis stricta*)	P
Sand dropseed	(*Sporobolus cryptandrus*)	P

GRASSES (CONT)

COMMON NAME	SPECIES	GROWTH HABIT[2]
Sprangletop	(*Leptochloa spp.*)	A
Timothy	(*Phleum pratense*)	P
Western muhly	(*Muhlenbergia frondosa*)	P

BROADLEAF WEEDS

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 2-3 pints per acre[1]		
Butcock	(*Arctium spp.*)	B
Carpetweed	(*Mollugo verticillata*)	A
Carolina geranium	(*Geranium carolinianum*)	A
Clover	(*Trifolium spp.*)	A/P
Common chickweed	(*Stellaria media*)	A
Common ragweed	(*Ambrosia artemisiifolia*)	A
Dandelion	(*Taraxacum officinale*)	P
Dog fennel	(*Eupatorium capillifolium*)	A
Filaree	(*Erodium spp.*)	A
Fleabane	(*Erigeron spp.*)	A
Hoary vervain	(*Verbena stricta*)	P
Indian mustard	(*Brassica juncea*)	A
Kochia	(*Kochia scoparia*)	A
Lambsquarters	(*Chenopodium album*)	A
*Lespedeza	(*Lespedeza spp.*)	P
Miners lettuce	(*Montia perfoliata*)	A
Mullein	(*Verbascum spp.*)	B
Netleaf goosefoot	(*Chenopodium murale*)	A
Oxeye daisy	(*Chrysanthemum leucanthemum*)	P
Poppyweed	(*Lepidium spp.*)	A
Pigweed	(*Amaranthus spp.*)	A
Puncturevine	(*Tribulus terrestris*)	A
Russian thistle	(*Salsola kali*)	A
Smartweed	(*Polygonum spp.*)	A/P
Sorrell	(*Rumex spp.*)	P
Sunflower	(*Helianthus spp.*)	A
Sweet clover	(*Melilotus spp.*)	A/B
Tansymustard	(*Descurainia pinnata*)	A
Western ragweed	(*Ambrosia psilostachya*)	P
Wild carrot	(*Daucus carota*)	B
Wild lettuce	(*Lactuca spp.*)	A/B
Wild parsnip	(*Pastinaca sativa*)	B
Wild turnip	(*Brassica campestris*)	B
Woolly-leaf bursage	(*Franseria tomentosa*)	P
Yellow woodsorrel	(*Oxalis stricta*)	P
Apply 3-4 pints per acre[1]		
Broom snakeweed*	(*Gutierrezia sarothrae*)	P
Bull thistle	(*Cirsium vulgare*)	B
Buckhorn	(*Medicago spp.*)	A
Chickweed, Mouseear	(*Cerastium vulgatum*)	A
Clover, rion	(*Trifolium procumbens*)	A
Cocklebur	(*Xanthium strumarium*)	A

BROADLEAF WEEDS (CONT)

COMMON NAME	SPECIES	GROWTH HABIT[2]
Cudweed	(Gnaphalium spp.)	A
Desert Carrotthorn	(Ahagi pseudahagi)	P
Dock	(Rumex spp.)	P
Fiddleneck	(Amsinckia intermedia)	A
Goldenrod	(Solidago spp.)	P
Henbit	(Lamium amplexicaule)	A
Knotweed, prostrate	(Polygonum arculare)	A/P
Pokeweed	(Phytolacca americana)	P
Purslane	(Portulaca spp.)	A
Pusley, Florida	(Richardia scabra)	A
Rocket, London	(Sisymbrium irio)	A
Rush skeletonweed[4]	(Chondrilla juncea)	B
Saltbush	(Atriplex spp.)	A
Shepherd's-purse	(Capsella bursa pastoris)	A
Spurge, Annual	(Euphorbia spp.)	A
Stinging nettle[4]	(Urtica dioica)	P
Velvetleaf	(Abutilon theophrasti)	A
Yellow starthistle	(Centaurea solstitialis)	A
Apply 4-6 pints per acre[1]		
Arrowweed	(Pluchea sericea)	A
Canada thistle	(Cirsium arvense)	P
Giant ragweed	(Ambrosia trifida)	A
Grey rabbitbrush	(Chrysothamnus nauseosus)	P
Little mallow	(Malva parviflora)	B
Milkweed	(Asclepias spp.)	P
Primrose	(Oenothera kunthiana)	P
Silverleaf nightshade	(Solanum elaeagnifolium)	P
Sowthistle	(Sonchus spp.)	A
Texas thistle	(Cirsium texanum)	P

VINES AND BRAMBLES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 1 pint per acre		
Field bindweed	(Convolvulus arvensis)	P
Hedge bindweed	(Calystegia sepium)	A
Apply 2-3 pints per acre[1]		
Wild buckwheat	(Persicaria convolvulus)	P
Apply 3-4 pints per acre[1]		
Greenbrier	(Smilax spp.)	P
Honeysuckle	(Lonicera spp.)	P
Morningglory	(Ipomoea spp.)	A/P
Poison ivy	(Rhus radicans)	P
Redvine	(Brunnichia cirrhosa)	P
Wild rose	(Rosa spp.)	P
Including:		
Multiflora rose	(Rosa multiflora)	P
McCartney rose	(Rosa bracteata)	P
Apply 4-6 pints per acre[1]		
Kudzu[4]	(Pueraria lobata)	P
Trumpetcreeper	(Campsis radicans)	P
Virginia creeper	(Parthenocissus quinquefolia)	P
Wild grape	(Vitis spp.)	P

BRUSH SPECIES

COMMON NAME	SPECIES	GROWTH HABIT[2]
Apply 4-6 pints per acre[1]		
American beech[5]	(Fagus grandifolia)	P
Ash	(Fraxinus spp.)	P
Bald cypress	(Taxodium distichum)	P
Bigleaf maple	(Acer macrophylum)	P
Black locust[5]	(Robinia pseudoacacia)	P
Black gum	(Nyssa sylvatica)	P
Box elder	(Acer negundo)	P
Cherry	(Prunus spp.)	P
Chinaberry	(Melia azadarach)	P
Dogwood	(Cornus spp.)	P
Elm[5]	(Ulmus spp.)	P
Hawthorn	(Crataegus spp.)	P
Hickory	(Carya spp.)	P
Honeylocust[5]	(Gleditsia triacanthos)	P
Maple	(Acer spp.)	P
Mulberry	(Morus spp.)	P
Oak	(Quercus spp.)	P
Persimmon	(Diospyros virginiana)	P
Pine[5]	(Pinus spp.)	P
Poplar	(Populus spp.)	P
Privet	(Ligustrum vulgare)	P
Red Alder	(Alnus rubra)	P
Red Maple	(Acer rubrum)	P
Russian Olive	(Elaeagnus angustifolia)	P
Sassafras	(Sassafras albidum)	P
Sourwood	(Oxydendrum arboreum)	P
Sweetgum	(Liquidambar styraciflua)	P
Water willow	(Justicia americana)	P
Willow	(Salix spp.)	P
Yellow poplar	(Liriodendron tulipifera)	P

[1] The higher rates should be used where heavy or well-established infestations occur.

[2] Growth Habit - A = Annual, B = Biennial, P = Perennial

[3] Use a minimum of 75 GPA - Control of established stands may require repeat applications

[4] For best results early postemergence applications are required

[5] Tank mix with glyphosate or triclopyr

[6] Tank-mix with with glyphosate.

[7] Not approved for use in California

For more information, please visit our web site

www.vmanswers.com

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

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BASF Corporation
Agricultural Products
26 Davis Drive
Research Triangle Park, NC 27709

BASF

The Chemical Company

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The Chemical Company

February 8, 2005

Mr. James A. Tompkins
Product Management (25)
Registration Division (H-7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
1801 South Bell Street
Arlington, VA 22202

RE: Notification of minor changes to HABITAT® herbicide label
EPA Reg. No. 241-426

Dear Mr. Tompkins:

This notification is to inform the Agency of a minor change to the HABITAT herbicide label. To accommodate California state registration requirements, several species within the Weeds Controlled sections of the label have been off-labeled for use in California.

Enclosed in support of this notification are:

- Application form 8570-1
- Compact Disc containing electronic version of the HABITAT herbicide label
- Citation with Respect to Label Integrity
- One copy of the HABITAT herbicide label with highlighted changes
- One clean copy of the HABITAT herbicide label
- Current approved HABITAT herbicide label

Thank you for your continued assistance with this product.

Regards,

Jeffrey H. Birk, Ph.D.
Global Regulatory Manager

® Registered Trademark of BASF

26 Davis Drive, Research Triangle Park, North Carolina, 27709-3528 (919) 547-2622

Jim Tompkins
02/03/2004 03:20 PM

To: Jeffrey H Birk <birkj@basf-corp.com>
cc:
Subject: Re: HABITAT herbicide question

You may modify
"Application of HABITAT herbicide can only be made by federal or state government entities or applicators who are licensed or certified applicators making applications under a program sponsored by federal or state government entities."

to read

"Applications of HABITAT herbicide can only be made by Federal or State agencies
such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers or those applicators who are licensed or certified
as aquatic pest control applicators and are authorized by the State or local government."
Jeffrey H Birk <birkj@basf-corp.com>

Jeffrey H Birk
<birkj@basf-corp.com
>
01/28/2004 03:13 PM

To: Jim Tompkins/DC/USEPA/US@EPA
cc:
Subject: HABITAT herbicide question

Jim,

I would like to ask for some clarification on the recently approved HABITAT herbicide label (EPA Reg. No. 241-426).

The approval letter requested the addition of the following statement in the GENERAL USE PRECAUTIONS AND RESTRICTIONS section of the label:

"Application of HABITAT herbicide can only be made by federal or state government entities or applicators who are licensed or certified applicators making applications under a program sponsored by federal or state government entities."

This statement is very similar to one that occurs further on in the same section, but with several differences. This statement is as follows:

"Applications of HABITAT herbicide to public waters can only be made by Federal or State agencies such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the State or local government."

I am receiving questions from university cooperators and state officials about the proper interpretation of these statements. The major concern is that the first statement does not clearly include government entities at the county and municiple level. Also the statement, "sponsored by federal or state government entities" is being interpreted to mean that the vegetation control project must be funded by a federal or state agency, and many times these projects are locally funded projects. There is also

Jeffrey H Birk
<birkj@basf-corp.com
>

01/28/2004 03:13 PM

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This statement is very similar to one that occurs further on in the same section, but with several differences. This statement is as follows:

> "Applications of HABITAT herbicide to public waters can only be made by Federal or State agencies such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the State or local government."

I am receiving questions from university cooperators and state officials about the proper interpretation of these statements. The major concern is that the first statement does not clearly include government entities at the county and municiple level. Also the statement, "sponsored by federal or state government entities" is being interpreted to mean that the vegetation control project must be funded by a federal or state agency, and many times these projects are locally funded projects. There is also confusion over the fact that the first statement does not differentiate between public and private waters.

The cooperators that I have spoken with have suggested that there is no need for the first statement as it only confuses the issue, as long as we have the second statement on the label.

I have not produced the container labeling and would like to be able to make any possible changes for clarification purposes before the container labels are produced and we proceed with state registrations.

A quick response would be greatly appreciated.
A copy of the label text in question is attached for your review. (See attached file: General Use Precautions and Restrictios.pdf)

Thanks,

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General Use Precautions and Restrictios pic23256.pcx

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General Use Precautions and Restrictios pic23256.pcx

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 23, 2003

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

JEFFREY H. BIRK
BASF CORPORATION
PO Box 13528
RESEARCH TRIANGLE PARK, NC 27709-3528

PRODUCT NAME: HABITAT HERBICIDE
COMPANY NAME: BASF CORPORATION
EPA FILE SYMBOL: 241-UEA
EPA RECEIPT DATE: 10/15/03

SUBJECT: RECEIPT OF APPLICATION FOR A NEW ME-TOO REGISTRATION

DEAR REGISTRANT:

The Office of Pesticide Programs has received your application for a new 'me-too' registration and it has passed an administrative screen for completeness.

During the initial screen we determined that the application appears to qualify for fast track review. The package will now be forwarded to the Product Manager for review to determine its acceptability for fast track status.

If you have any questions, please contact Registration Division, Risk Management Team 25, at (703) 305-5697.

Sincerely,

Front End Processing Staff
Information Services Branch
Information Resources and Services Division

F/T

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

[✓] Registration
[ ] Amendment
[ ] Other

DPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number: 241- UEA

2. EPA Product Manager: James Tompkins

3. Proposed Classification: [ ] None [ ] Restricted

4. Company/Product (Name): HABITAT herbicide

PM#: 25

5. Name and Address of Applicant (Include ZIP Code)

BASF
26 Davis Drive
Research Triangle Park, NC 27709

[ ] Check if this is a new address

6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(ii), my product is similar or identical in composition and labeling to:

EPA Reg. No. _____

Product Name _____

Section - II

[ ] Amendment - Explain below.

[ ] Resubmission in response to Agency letter dated _____

[ ] Notification - Explain below.

[ ] Final printed labels in response to Agency letter dated _____

[✓] "Me Too" Application.

[ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Request for "Me-Too" Registration

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes	[ ] Yes	[ ] Yes	[ ] Metal
[ ] No	[ ] No	[ ] No	[ ] Plastic
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	[ ] Glass
			[ ] Paper
			[ ] Other (Specify) _____

3. Location of Net Contents Information: [ ] Label [ ] Container

4. Size(s) Retail Container

5. Location of Label Directions: [ ]

6. Manner in Which Label Is Affixed to Product: [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name	Title	Telephone No. (Include Area Code)
Jeffrey H. Birk	Global Product Regulatory Manager	919-547-2622

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature

3. Title: Global Product Regulatory Manager

4. Typed Name: Jeffrey H. Birk

5. Date: October 7, 2003

6. Date Application Received (Stamped)

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete.

White - EPA File Copy (original) Yellow - Applicant Copy

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505C)
Ariel Rios Building
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

EPA Reg. Number: 241-426

Date of Issuance: 11/17/03

Term of Issuance: Conditional

Name of Pesticide Product: Habital® Herbicide

NOTICE OF PESTICIDE:
X Registration
Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709-3528

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit/cite all data required for the registration/ reregistration of your product when the Agency requires all registrants of similar products to submit data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Submit a fish metabolism study within 4 years of the date on this letter.

3. Change the EPA registration number to 241-426 on the label.

Signature of Approving Official:

Jim Tompkins, Product Manager 25
Herbicide Branch, Registration Division

Date: 11/17/03

EPA Form 8570-6

4. On the front page of the label, modify "For the control of undesirable, emergent and floating aquatic vegetation in and around standing and flowing water, including estuaries and marine sites. Habitat herbicide may also be used for the control of undesirable wetland, riparian and terrestrial vegetation growing in or around surface water OR when applications may result in inadvertent application to surface water."

-TO READ-

"Applications may only be made for the control of undesirable, emergent and floating aquatic vegetation in and around standing and flowing water,. including estuaries and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water."

5. Under PRECAUTIONARY STATEMENTS, add in the appropriate location:

Personal Protective Equipment (PPE):
Some materials that are chemical resistant to this product are listed in category A on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:
Long-sleeved shirt and long pants
Chemical-resistant gloves, Category A
Shoes plus socks

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

6. Modify ENVIRONMENTAL HAZARDS to read:

"DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some aquatic organisms. Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow aquatic organisms to move into untreated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift precautions on the label."

7. Under GENERAL USE PRECAUTIONS AND RESTRICTIONS, add:

"Applications may only be made for the control of undesirable, emergent and floating aquatic vegetation in an around standing and flowing water, including estuaries and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Do not apply more than 6 pints of product (1.5 lbs. acid equivalent) per acre per year.

Aerial application is restricted to helicopter only.

Applications of Habitat herbicide can only be made by federal or state governmental entities or applicators who are licensed or certified applicators making applications under a program sponsored by federal or state governmental entities.

Treatment to other than non-native invasive species is limited to only those plants that have been determine to be a nuisance by a federal or state governmental entity."

8. Under APPLICATION TO WATERS USED FOR IRRIGATION, change "... determined by laboratory analysis to be 1.0 ppb or less" TO READ "... determined by laboratory analysis or other appropriate means of analysis to be 1.0 ppb or less." This statement occurs in paragraphs 1 - 4 of this section of the label.

9. Under GENERAL INFORMATION:
USE SITES:
Remove "similar crop areas." You must clearly define the use sites where this product can be used.
Remove "Habitat herbicide is recommended for establishment and maintenance of wildlife openings and wildlife habitats in above listed aquatic sites."

APPLICATION METHODS:
Change "aerial equipment" to "helicopters."
Restrict aerial application to helicopters only throughout the label.

Add "Do not treat more than one half of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas." to the paragraph that begins "When application is to be made to target vegetation that covers a large percentage of the surface area..."

10. In the MANAGING OFF-TARGET MOVEMENT section:
In the first paragraph following "Spray Drift," change "The applicator and the grower are responsible..." TO READ "The applicator and the entity authorizing spraying are responsible for considering all of these factors when making decisions."

Under "Swath Adjustment" change "field" to "treatment area" in "Therefore, on the up and downwind edges of the *field*..."

Immediately after the "Aerial Application Methods and Equipment" subheading, add "(Helicopters Only)."

Under "Managing Spray Drift from Aerial Application," delete "wingspan" from the boom length instructions.

11. Under "Aerial Applications" on page 11,
Modify the current statement to incorporate the following language,
"Helicopters can be used to apply Habitat herbicide, however, DO NOT make applications by helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area, or when spray drift as a result of helicopter application can be tolerated."

12. In the "Additional Weeds Controlled by Habitat Herbicide" section, for "Resistant Biotypes", it is recommended that you modify this section in accordance with the guidance in PR Notice 2001-5.

13. Submit one (1) copy of the revised final printed label before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

HABITAT® herbicide

For the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. HABITAT herbicide may also be used for the control of undesireable wetland, riparian and terrestrial vegetation growing in and around surface water or when application may result in inadvertent application to surface water.

ACTIVE INGREDIENT:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid)* 28.7%

INERT INGREDIENTS 71.3%

TOTAL 100.0%

*Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-XXX U.S. Patent No. 4,798,619 EPA Est. No.

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.)

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Next Page for Additional Precautionary Statements

ACCEPTED
with COMMENTS
in EPA Letter Dated
NOV 17 2003
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.
241-426

Net Contents:

®Registered Trademark of BASF

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF

FIRST AID	
IF ON SKIN:	• Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
IF INHALED:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF for emergency medical treatment information: 1-800-832-HELP (4357).	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS

CAUTION!

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of HABITAT herbicide should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply HABITAT herbicide or spray solutions of HABITAT herbicide in unlined steel (except stainless steel) containers or spray tanks.

ENVIRONMENTAL HAZARDS

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some sensitive fish species. DO NOT contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

HABITAT herbicide should be used only in accordance with recommendations on the leaflet label attached to the container. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: DO NOT store below 10°F.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

IMPORTANT

DO NOT use on food crops. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in APPLICATION TO WATERS USED FOR IRRIGATION section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications to private waters: Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species. Applications of HABITAT herbicide to public waters can only be made by Federal or State agencies such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the State or local government.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water In/from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply HABITAT herbicide directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertant overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with HABITAT herbicide may not be used for irrigation purposes for 120 days after application or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Seasonal Irrigation Waters: HABITAT herbicide may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between HABITAT herbicide application and the first use of treated water for irrigation purposes or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply HABITAT herbicide to irrigation canals/ditches unless the 120 day restriction on irrigation water usage can be observed or HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less. DO NOT apply HABITAT herbicide to dry irrigation canals/ditches.

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply HABITAT herbicide within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Moving water: DO NOT apply within one half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: HABITAT herbicide is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section) in or near bodies of water which may be flowing, non-flowing, or transient. HABITAT herbicide may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackess water, transitional areas between terrestrial and aquatic sites, seasonal wet areas, and similar non-crop areas. See AQUATIC USE section of this label for precautions, restrictions, and instructions on aquatic uses. HABITAT herbicide is recommended for the establishment and maintenance of wildlife openings and wildlife habitat in the above listed aquatic sites.

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: HABITAT herbicide will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. HABITAT herbicide is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Applications of HABITAT herbicide are rainfast one hour after treatment.

HABITAT herbicide does not control plants which are completely submerged or have a majority of their foliage under water.

Application Methods: HABITAT herbicide must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. HABITAT herbicide concentrations resulting from direct application to water are not expected to be of sufficient concentration nor duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of overspray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See ADJUVANTS section for specific recommendations). HABITAT herbicide may

be selectively applied by using low-volume directed application techniques or may be broadcast applied by using ground equipment, watercraft or aerial equipment. In addition, HABITAT herbicide may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see AERIAL APPLICATIONS and GROUND APPLICATIONS sections for additional details).

HABITAT should be applied with surface or aerial application equipment in a minimum of 5 gallons of water per acre. When applying aerially, follow directions under the AERIAL APPLICATIONS section of this label, otherwise, refer to section on GROUND APPLICATIONS when using surface equipment.

Applications made to moving bodies of water should be made while traveling upstream to prevent concentration of this herbicide in water. DO NOT apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffication of some sensitive fish species.

Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash for one hour after application.

Apply HABITAT herbicide at 2 to 6 pints per acre depending on species present and weed density. DO NOT exceed the maximum label rate of 6 pints per acre (1.5 lb ae/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section of this label for specific rates.

HABITAT herbicide may be applied as a draw down treatment in areas described above. Apply HABITAT herbicide to weeds after water has been drained and allow 14 days before reintroduction of water.

PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of HABITAT herbicide from treated soil. Injury or loss of desirable plants may result if HABITAT herbicide is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where HABITAT herbicide has been applied, generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed front the application site, DO NOT use the vegetative matter as mulch or compost on or around desirable species.

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see WIND, TEMPERATURE AND HUMIDITY, and TEMPERATURE INVERSIONS).

CONTROLLING DROPLET SIZE

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

APPLICATION HEIGHT

Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind.

Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

WIND
Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

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

WIND EROSION
Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Aerial Application Methods and Equipment
Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed ¾ the length of the wingspan or rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising aircraft safety, applications should made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Ground Application (Broadcast)
Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of HABITAT herbicide require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized.

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in HABITAT herbicide deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: HABITAT herbicide can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray run-off, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT herbicide may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Fixed wing aircraft and helicopters can be used to apply HABITAT herbicide, however, DO NOT make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area or, when treating open tracts of land, spray drift as a result of fixed wing aircraft application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with HABITAT herbicide unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of HABITAT herbicide in 5 to 30 gallons of water per acre; include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the Adjuvant section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

GROUND APPLICATIONS

FOLIAR APPLICATIONS

Low Volume Foliar:
Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5 to 5% HABITAT herbicide plus surfactant (See the ADJUVANTS section of this label for specific recommendations). A foam reducing agent may be applied at the recommended label rate, if needed. For control of difficult species (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of HABITAT herbicide per acre. Excessive wetting of foliage is not recommended. See the Mixing Guide below for some suggested volumes of HABITAT herbicide and water.

For low volume, select proper nozzles to avoid over-application. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant. The use of an even flat fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Recommended tip sizes include 4004E, or 1504E. For a straight stream and cone pattern, adjustable cone nozzles such as 5500 X3 or 5500 X4 may be used. Attaching a roll-over valve

onto a Spraying Systems Model 30 gunjet or other similar spray guns allows for the use of both a flat fan and cone tips on the same gun.

Moisten, but do not drench target vegetation causing spray solution to run off.

Low Volume Foliar with Backpacks:
For low growing species, spray down on the crown, covering crown and penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least two sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, lace sides of the target vegetation by directing spray to at least two sides of the target in smooth zigzag motions from crown to bottom.

Low Volume Foliar with Hydraulic Handgun Application Equipment:
Use same technique as described above for Low Volume with Backpacks.

For broadcast applications, simulate a gentle rain near the top of target vegetation, allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution which contacts the understory may result in severe injury or death of plants in the understory.

SPRAY SOLUTION MIXING GUIDE FOR LOW VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)				
	0.5%	0.75%	1%	1.5%	5%
	(amount of HABITAT to use)				
1 gallon	0.6 oz.	0.9 oz.	1.3 oz.	1.9 oz.	6.5 oz.
3 gallons	1.9 oz.	2.8 oz.	3.8 oz.	5.8 oz.	1.2 pints
4 gallons	2.5 oz.	3.8 oz.	5.1 oz.	7.7 oz.	1.6 pints
5 gallons	3.2 oz.	4.8 oz.	6.5 oz.	9.6 oz.	2 pints
50 gallons	2 pints	3 pints	4 pints	6 pints	10 quarts
100 gallons	4 pints	6 pints	8 pints	6 quarts	5 gallons

2 tablespoons = 1 fluid ounce

High Volume Foliar:
For optimum performance when spraying medium to high density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray run-off, causing increased ground cover injury,

and injury to desirable species. To prepare the spray solution, thoroughly mix HABITAT herbicide in water and add a surfactant (See Adjuvant section for specific recommendations and rates of surfactants). A foam reducing agent may be added at the recommended label rate, if needed. For control of difficult species (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of HABITAT herbicide per acre. Uniformly cover the foliage of the vegetation to be controlled but do not apply to run-off. Excessive wetting of foliage is not recommended.

Side Trimming:

DO NOT side trim with HABITAT herbicide unless severe injury or death of the treated tree can be tolerated. HABITAT herbicide is readily translocated and can result in death of the entire tree.

CUT SURFACE TREATMENTS

HABITAT herbicide may be used to control undesirable woody vegetation by applying the HABITAT herbicide solution to the cambium area of freshly-cut stump surfaces or to fresh cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Do not overapply solution causing run-off from the cut surface.

Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

Cut Surface Applications with Dilute and Concentrate Solutions:

HABITAT herbicide may be mixed as either a concentrated or dilute solution. The dilute solution may be used for applications to the cut surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of HABITAT herbicide with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of HABITAT herbicide with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack&squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3 inch DBH tree will receive 1 injection cut and a 6 inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of HABITAT herbicide into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED

HABITAT herbicide will control the following target species as specified in the BASF RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a %solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of HABITAT herbicide per acre.**

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Floating Species		
Duckweed	*Lemna minor*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Duckweed, Giant	*Spirodela polyriza*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Frogbit	*Limnobium spongia*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Spadderdock	*Nuphar luteum*	Apply a tank-mix of 2-4 pints/acre HABITAT + 4 to 6 pints/acre glyphosate (0.5% HABITAT + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
Water Hyacinth	*Eichhornia crassipes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
Water Lettuce-	Pistia stratiotes	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Emerged Species		
Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tank-mix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher HABITAT rates.
Arrowhead, Duck-potato	*Sagittaria spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water

		mix. Ensure 100% coverage of actively growing, emergent foliage.
Bacopa, lemon	*Bacopa spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Parrot feather	*Myriophyllum aquaticum*	Must be foliage above water for sufficient HABITAT uptake. Apply 2 - 4 pints to actively growing emergent foliage.
Pennywort	*Hydrocotyle spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Pickerelweed	*Pontederia cordata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Taro, wild; Dasheen; Elephant's Ear; Coco Yam	*Colocasia esculentum*	4-6 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
Water lily	*Nymphaea odorata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Water primrose	*Ludwigia uruguayensis*	4-6 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.
Terrestrial/Marginal		
Soda Apple, aquatic; Nightshade	*Solanum tampicense*	2 pts/acre applied to foliage
Bamboo, Japanese	*Phyllostachys spp*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	*Schinus terebinthifolius*	2 - 4 pints/acre applied to foliage
Cattail	*Typha spp.*	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	*Sapium sebiferum*	16 to 24oz applied to foliage
Cogon Grass	*Imperata cylindrica*	Burn foliage, till area, that fall spray 2qt/acre HABITAT + MSO applied to new growth.
Cordgrass, prairie	*Spartina* spp.	4-6 pints applied to actively growing foliage
Cutgrass	*Zizaniopsis miliacea*	4-6 pints applied to actively growing foliage
Elephant Grass; Napier Grass-	*Pennisetum purpureum*	3pts/acre applied to actively growing foliage
Flowering rush	*Butomus typha*	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	*Arundo donax*	4 to 6 pints/acre applied in spring to actively growing foliage
Golden Bamboo	*Phyllostachys aurea*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3-4 pints applied to actively growing foliage
Knapweeds-	*Centaurea species*	Russian Knapweed – 2 to 3 pints + 1qt/acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	*Polygonum cuspidatum*	3 to 4 pts/acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	*Melaleuca quinquenervia*	For established stands, apply 6 pints/acre HABITAT herbicide + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt/A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially

		in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% HABITAT herbicide + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
Nutgrass; Kili'p'opu -	*Cyperus rotundus*	2 pints HABITAT + 1qt/acre MSO applied early postemergence
Nutsedge	*Cyperus spp.*	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.
Phragmites; Common Reed,	*Phragmites australis*	4 to 6 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to re-grow to approximately 5' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
Poison Hemlock-	*Conium maculatum*	2 pints HABITAT + 1qt/acre MSO applied preemergence to early postemergence to rosette, prior to flowering
Purple Loosestrife	*Lythrum salicaria*	1pint/acre applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/acre applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pts/acre applied to actively growing foliage
Russian-Olive	*Elaeagnus angustifolia*	2 to 4 pints/acre or a 1% solution, applied to foliage
Saltcedar; Tamarisk	*Tamarix species*	Aerial apply 2qts HABITAT + 0.25%v/v NIS applied to actively growing foliage during flowering. For spot spraying use 1% solution of HABITAT + 0.25%v/v NIS and spray to wet foliage. After application wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control..
Smartweed	*Polygonum spp.*	2 pints/acre applied early postemergence
Sumac	*Rhus spp.*	2 to 3 pts/acre applied to foliage
Swamp Morning Glory; Water Spinach; Kangkong-	*Ipomoea aquatica*	1 to 2 pints/acre HABITAT + 1qt/acre MSO applied early postemergence
Torpedo Grass-	*Panicum repens*	4 pints/acre (1 - 1.5% solution), ensure good coverage to actively growing foliage.
White Top; Hoary Cress-	*Cardaria draba*	1 to 2 pints/acre applied in spring, to foliage, during flowering.
Willow	*Salix spp.*	2 to 3 pts/acre HABITAT applied to actively growing foliage, ensure good coverage.

ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE

In terrestrial sites, HABITAT herbicide will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of HABITAT. **For established biennials and perennials postemergence applications of HABITAT are recommended.**

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see "Low Volume" section of "Ground Applications"); low volume applications may provide control of the target species with less HABITAT per acre than is shown for the broadcast

treatments. HABITAT herbicide should be used only in accordance with the recommendations on this label and the leaflet label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

Resistant Biotypes: Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, HABITAT herbicide should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES

Apply 2-3 pints per acre[1]

COMMON NAME	SPECIES	GROWTH HABIT[2]
Annual bluegrass	(Poa annua)	A
Broadleaf signalgrass	(Brachiaria platyphylla)	A
Canada bluegrass	(Poa compressa)	P
Downy brome	(Bromus tectorum)	A
Fescue	(Festuca spp.)	A/P
Foxtail	(Setaria spp.)	A
Italian ryegrass	(Lolium multiflorum)	A
Johnsongrass	(Sorghum halepense)	P
Kentucky bluegrass	(Poa pratensis)	P
Napier grass	(Pennisetum purpureum)	P
Lovegrass	(Eragrostis spp.)	A/P
Orchardgrass	(Dactylis glomerata)	P
Paragrass	(Brachiaria mutica)	P
Quackgrass	(Agropyron repens)	P
Sandbur	(Cenchrus spp.)	A
Sand dropseed	(Sporobulus cryptandrus)	A
Smooth brome	(Bromus inermis)	P
Vaseygrass	(Paspalum urvillei)	P
Wild oats	(Avena fatua)	A
Witchgrass	(Panicum capillare)	A

Apply 3-4 pints per acre[1]

Barnyardgrass	(Echinochloa crus-gali)	A
Beardgrass	(Andropogon spp.)	P
Bluegrass, Annual	(Poa annua)	A

Bulrush	(Scirpus validus)	P
Cheat	(Bromus secalinus)	A
Crabgrass	(Digitaria spp.)	A
Crowfootgrass	(Dactyloctenium aegyptium)	A
Fall panicum	(Panicum dichotomiflorum)	A
Goosegrass	(Eleusine indica)	A
Itchgrass	(Rottboellia exaltata)	A
Lovegrass	(Eragrostis spp.)	A
Maidencane	(Panicum hemitomon)	A
Panicum, Browntop	(Panicum fasciculatum)	A
Panicum, Texas	(Panicum texanum)	A
Prairie threeawn	(Aristida oligantha)	P
Sandbur, Field	(Cenchrus incertus)	A
Signalgrass	(Brachiaria platyphylla)	A
Wild barley	(Hordeum spp.)	A
Wooly Cupgrass	(Eriochloa villosa)	A

Apply 4-6 pints per acre[1]

Bahiagrass	(Paspalum notatum)	P
Bermudagrass[3]	(Cynodon dactylon)	P
Big bluestem	(Andropogon gerardii)	P
Dallisgrass	(Paspalum dilatatum)	P
Feathertop	(Pennisetum villosum)	P
Guineagrass	(Panicum maximum)	P
Saltgrass[3]	(Distichlis stricta)	P
Sand dropseed	(Sporobolus cryptandrus)	P
Sprangletop	(Leptochloa spp.)	A
Timothy	(Phleum pratense)	P
Wirestem muhly	(Muhlenbergia frondosa)	P

BROADLEAF WEEDS

Apply 2-3 pints per acre[1]

Burdock	(Arctium spp.)	B
Carpetweed	(Mollugo verticillata)	A
Carolina geranium	(Geranium carolinianum)	A
Clover	(Trifolium spp.)	A/P
Common chickweed	(Stellaria media)	A
Common ragweed	(Ambrosia artemisiifolia)	A
Dandelion	(Taraxacum officinale)	P
Dogfennel	(Eupatorium capillifolium)	A
Filaree	(Erodium spp.)	A
Fleabane	(Erigeron spp.)	A
Hoary vervain	(Verbena stricta)	P
Indian mustard	(Brassica juncea)	A

Kochia	(Kochia scoparia)	A
Lambsquarters	(Chenopodium album)	A
Lespedeza	(Lespedeza spp.)	P
Miners lettuce	(Montia perfoliata)	A
Mullein	(Verbascum spp.)	B
Nettleleaf goosefoot	(Chenopodium murale)	A
Oxeye daisy	(Chrysanthemum leucanthemum)	P
Pepperweed	(Lepidium spp.)	A
Pigweed	(Amaranthus spp.)	A
Puncturevine	(Tribulus terrestris)	A
Russian thistle	(Salsola kali)	A
Smartweed	(Polygonum spp.)	A/P
Sorrell	(Rumex spp.)	P
Sunflower	(Helianthus spp.)	A
Sweet clover	(Melilotus spp.)	A/B
Tansymustard	(Descurainia pinnata)	A
Western ragweed	(Ambrosia psilostachya)	P
Wild carrot	(Daucus carota)	B
Wild lettuce	(Lactuca spp.)	A/B
Wild parsnip	(Pastinaca sativa)	B
Wild turnip	(Brassica campestris)	B
Woollyleaf bursage	(Franseria tomentosa)	P
Yellow woodsorrel	(Oxalis stricta)	P

Apply 3-4 pints per acre[1]

Broom snakeweed[4]	(Gutierrezia sarothrae)	P
Bull thistle	(Cirsium vulgare)	B
Burclover	(Medicago spp.)	A
Chickweed, Mouseear	(Cerastium vulgatum)	A
Clover, Hop	(Trifolium procumbens)	A
Cocklebur	(Xanthium strumarium)	A
Cudweed	(Gnaphalium spp.)	A
Desert Camelthorn	(Alhagi pseudalhagi)	P
Dock	(Rumex spp.)	P
Fiddleneck	(Amsinckia intermedia)	A
Goldenrod	(Solidago spp.)	P
Henbit	(Lamium aplexicaule)	A
Knotweed, prostrate	(Polygonum aviculare)	A/P
Pokeweed	(Phytolacca americana)	P
Purslane	(Portulaca spp.)	A
Pusley, Florida	(Richardia scabra)	A
Rocket, London	(Sisymbrium irio)	A
Rush skeletonweed[4]	(Chondrilla juncea)	B
Saltbush	(Atriplex spp.)	A
Shepherd's-purse	(Capsella bursa-pastoris)	A
Spurge, Annual	(Euphorbia spp.)	A

Stinging nettle[4]	(Urtica dioica)	P
Velvetleaf	(Abutilon theophrasti)	A
Yellow starthistle	(Centaurea solstitialis)	A

Apply 4-6 pints per acre[1]

Arrowwood	(Pluchea sericea)	A
Canada thistle	(Cirsium arvense)	P
Giant ragweed	(Ambrosia trifida)	A
Grey rabbitbrush	(Chrysothamnus nauseosus)	P
Little mallow	(Malva parviflora)	B
Milkweed	(Asclepias spp.)	P
Primrose	(Oenothera kunthiana)	P
Silverleaf nightshade	(Solanum elacagnifolium)	P
Sowthistle	(Sonchus spp.)	A
Texas thistle	(Cirsium texanum)	P

VINES AND BRAMBLES

Apply 1 pint per acre

Field bindweed	(Convolvulus arvensis)	P
Hedge bindweed	(Calystegia sequium)	A

Apply 2-3 pints per acre[1]

Wild buckwheat	(Polygonum convolvulus)	P

Apply 3-4 pints per acre[1]

Greenbriar	(Smilax spp.)	P
Honeysuckle	(Lonicera spp.)	P
Morningglory	(Ipomoea spp.)	A/P
Poison ivy	(Rhus radicans)	P
Redvine	(Brunnichia cirrhosa)	P
Wild rose	(Rosa spp.)	P
Including: Multiflora rose	(Rosa multiflora)	P
Macartney rose	(Rosa bractreata)	P

Apply 4-6 pints per acre[1]

Kudzu[3]	(Pueraria lobata)	P
Trumpetcreeper	(Campsis radicans)	P
Virginia creeper	(Parthenocissus quinquefolia)	P
Wild grape	(Vitis spp.)	P

BRUSH SPECIES

Apply 4-6 pints per acre[1]

American beech	(Fagus grandifolia)	P
Ash	(Fraxinus spp.)	P
Bald cypress	(Taxodium distichum)	P
Bigleaf Maple	(Acer macrophylum)	P
Black Locust[5]	(Robinia pseudoacacia)	P
Blackgum	(Nyssa sylvatica)	P
Boxelder	(Acer negundo)	P
Cherry	(Prunus spp.)	P
Chinaberry	(Melia azadarach)	P
Dogwood	(Cornus spp.)	P
Elm[6]	(Ulmus spp.)	P
Hawthorn	(Crataegus spp.)	P
Hickory	(Carya spp.)	P
Honeylocust[5]	(Gleditsia triacanthos)	P
Maple	(Acer spp.)	P
Mulberry	(Morus spp.)	P
Oak	(Quercus spp.)	P
Persimmon	(Diospyros virginiana)	P
Pine[5]	(Pinus spp.)	P
Poplar	(Populus spp.)	P
Privet	(Ligustrum vulgare)	P
Red Alder	(Alnus rubra)	P
Red Maple	(Acer rubrum)	P
Russian Olive	(Eleagnus angustifolia)	P
Sassafras	(Sassafras albidum)	P
Sourwood	(Oxydendrum arboreum)	P
Sweetgum	(Liquidambar styraciflua)	P
Water willow	(Justica americana)	P
Willow	(Salix spp.)	P
Yellow poplar	(Liriodendron tulipifera)	P

1 The higher rates should be used where heavy or well established infestations occur.
2 Growth Habit - A = Annual, B = Biennial, P = Perennial
3 Use a minimum of 75 GPA - Control of established stands may require repeat applications.
4 For best results early postemergence applications are required.
5 Tank-mix with glyphosate or triclopyr.
6 Tank-mix with glyphosate.

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather

conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF HABITAT herbicide. In no case shall BASF or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

BASF makes no other express or implied warranty, including other express or implied warranty of FITNESS or of MERCHANTABILITY. User assumes the risk of any use contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable by BASF.

® Registered Trademark of BASF Corporation
™ Microfoil is a trademark of Rhone Poulenc Ag. Company
™ Thru-Valve is a trademark of Waldrum Specialties

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Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

[✓] Registration
[ ] Amendment
[ ] Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 241-	2. EPA Product Manager James Tompkins	3. Proposed Classification [ ] None [ ] Restricted
4. Company/Product (Name) HABITAT herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) BASF 26 Davis Drive Research Triangle Park, NC 27709 [ ] Check if this is a new address	6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

[ ] Amendment - Explain below.
[ ] Resubmission in response to Agency letter dated _____
[ ] Notification - Explain below.
[ ] Final printed labels in repsonse to Agency letter dated _____
[✓] "Ms Too" Application.
[ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Request for "Me-Too" Registration

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistent Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container		[ ]

6. Manner in Which Label is Affixed to Product [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name	Title	Telephone No. (Include Area Code)
Jeffrey H. Birk	Global Product Regulatory Manager	919-547-2622

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title Global Product Regulatory Manager	
4. Typed Name Jeffrey H. Birk	5. Date October 7, 2003	

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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Certification with Respect to Citation of Data

Applicants/Registrant's Name, Address, and Telephone Number BASF, 26 Davis Drive, Research Triangle Park, NC 27709 (919-547-2622)	EPA Registration Number/File Symbol 241-XXX
Active Ingredient(s) and/or representative test compound(s) Imazapyr	Date October 7, 2003
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial nonfood, Aquatic nonfood, Aquatic food crop	Product Name HABITAT herbicide

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☐ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

(Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements)

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

✓ I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

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Signature	Date	Typed or Printed Name and Title
	10-7-03	Jeffrey H. Birk, Global Product Regulatory Manager

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Active Ingredient(s) and/or representative test compound(s) Imazapyr	Date October 7, 2003
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Forestry, Terrestrial nonfood, Terrestrial food, Aquatic nonfood, Aquatic food crop	Product Name ARSENAL herbicide Technical

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Applicant's/Registrant's Name, Address, and Telephone Number BASF, 26 Davis Drive, Research Triangle Park, NC 27709 (919-547-2622)	EPA Registration Number/File Symbol 241-256
Active Ingredient(s) and/or representative test compound(s) Imazapyr	Date October 7, 2003
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Forestry, Terrestrial nonfood, Terrestrial food, Aquatic nonfood, Aquatic food crop	Product Name ARSENAL herbicide Technical

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Signature	Date	Typed or Printed Name and Title
	10-7-03	Jeffrey H. Bilk, Global Product Regulatory Manager

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HABITAT® herbicide

For the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. HABITAT herbicide may also be used for the control of undesireable wetland, riparian and terrestrial vegetation growing in and around surface water or when application may result in inadvertent application to surface water.

ACTIVE INGREDIENT:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid)*..... 28.7%

INERT INGREDIENTS..... 71.3%

TOTAL..... 100.0%

*Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-XXX U.S. Patent No. 4,798,619 EPA Est. No.

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.)

In case of an emergency endangering life or property involving this product, call day or night, 800-832-HELP.

See Next Page for Additional Precautionary Statements

Net Contents:

®Registered Trademark of BASF

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF

FIRST AID	
IF ON SKIN:	• Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
IF INHALED:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF for emergency medical treatment information: 1-800-832-HELP (4357).	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS

CAUTION!

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of HABITAT herbicide should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers.

DO NOT mix, store or apply HABITAT herbicide or spray solutions of HABITAT herbicide in unlined steel (except stainless steel) containers or spray tanks.

ENVIRONMENTAL HAZARDS

DO NOT apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss may cause the suffocation of some sensitive fish species. DO NOT contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

HABITAT herbicide should be used only in accordance with recommendations on the leaflet label attached to the container. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: DO NOT store below 10°F.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

IMPORTANT

DO NOT use on food crops. **DO NOT** apply this product within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. **DO NOT** apply to water used for irrigation except as described in APPLICATION TO WATERS USED FOR IRRIGATION section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications to private waters: Applicatinns may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species. Applications of HABITAT herbicide to public waters can only be made by Federal or State agencies such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the State or local government.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water in/from Treatment Area: Thera are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply HABITAT herbicide directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertant overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with HABITAT herbicide may not be used for irrigation purposes for 120 days after application or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Seasonal Irrigation Waters: HABITAT herbicide may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between HABITAT herbicide application and the first use of treated water for irrigation purposes or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply HABITAT herbicide to irrigation canals/ditches unless the 120 day restriction on irrigation water usage can be observed or HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less. DO NOT apply HABITAT herbicide to dry irrigation canals/ditches.

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply HABITAT herbicide within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until HABITAT herbicide residue levels are determined by laboratory analysis to be 1.0 ppb or less.

Moving water: DO NOT apply within one half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: HABITAT herbicide is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section) in or near bodies of water which may be flowing, non-flowing, or transient. HABITAT herbicide may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackess water, transitional areas between terrestrial and aquatic sites, seasonal wet areas, and similar non-crop areas. See AQUATIC USE section of this label for precautions, restrictions, and instructions on aquatic uses. HABITAT herbicide is recommended for the establishment and maintenance of wildlife openings and wildlife habitat in the above listed aquatic sites.

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: HABITAT herbicide will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. HABITAT herbicide is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until two or more weeks after application. Complete kill of plants may not occur for several weeks. Applications of HABITAT herbicide are rainfast one hour after treatment.

HABITAT herbicide does not control plants which are completely submerged or have a majority of their foliage under water.

Application Methods: HABITAT herbicide must be applied to the emergent foliage of the target vegetation and has little to no activity on submerged aquatic vegetation. HABITAT herbicide concentrations resulting from direct application to water are not expected to be of sufficient concentration nor duration to provide control of target vegetation. Application should be made in such a way as to maximize spray interception by the target vegetation while minimizing the amount of overspray that enters the water. For maximum activity, weeds should be growing vigorously at the time of application and the spray solution should include a surfactant (See ADJUVANTS section for specific recommendations). HABITAT herbicide may

be selectively applied by using low-volume directed application techniques or may be broadcast applied by using ground equipment, watercraft or aerial equipment. In addition, HABITAT herbicide may also be used for cut stump, cut stem and frill and girdle treatments within aquatic sites (see AERIAL APPLICATIONS and GROUND APPLICATIONS sections for additional details).

HABITAT should be applied with surface or aerial application equipment in a minimum of 5 gallons of water per acre. When applying aerially, follow directions under the AERIAL APPLICATIONS section of this label, otherwise, refer to section on GROUND APPLICATIONS when using surface equipment.

Applications made to moving bodies of water should be made while traveling upstream to prevent concentration of this herbicide in water. DO NOT apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When application is to be made to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in the suffication of some sensitive fish species.

Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash for one hour after application.

Apply HABITAT herbicide at 2 to 6 pints per acre depending on species present and weed density. DO NOT exceed the maximum label rate of 6 pints per acre (1.5 lb ae/A) per year. Use the higher labeled rates for heavy weed pressure. Consult the AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section of this label for specific rates.

HABITAT herbicide may be applied as a draw down treatment in areas described above. Apply HABITAT herbicide to weeds after water has been drained and allow 14 days before reintroduction of water.

PRECAUTIONS FOR AVOIDING INJURY TO NON-TARGET PLANTS

Untreated desirable plants can be affected by root uptake of HABITAT herbicide from treated soil. Injury or loss of desirable plants may result if HABITAT herbicide is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making applications along shorelines where desirable plants may be present, caution should be exercised to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots that extend into the water in an area where HABITAT herbicide has been applied, generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, DO NOT use the vegetative matter as mulch or compost on or around desirable species.

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see WIND, TEMPERATURE AND HUMIDITY, and TEMPERATURE INVERSIONS).

CONTROLLING DROPLET SIZE

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

APPLICATION HEIGHT

Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind.

Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

WIND
Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

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

WIND EROSION
Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Aerial Application Methods and Equipment
Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed ¾ the length of the wingspan or rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising aircraft safety, applications should made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Ground Application (Broadcast)
Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of HABITAT herbicide require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized.

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in HABITAT herbicide deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: HABITAT herbicide can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray run-off, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT herbicide may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Fixed wing aircraft and helicopters can be used to apply HABITAT herbicide, however, DO NOT make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area or, when treating open tracts of land, spray drift as a result of fixed wing aircraft application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with HABITAT herbicide unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of HABITAT herbicide in 5 to 30 gallons of water per acre; include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the Adjuvant section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

GROUND APPLICATIONS

FOLIAR APPLICATIONS

Low Volume Foliar:
Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5 to 5% HABITAT herbicide plus surfactant (See the ADJUVANTS section of this label for specific recommendations). A foam reducing agent may be applied at the recommended label rate, if needed. For control of difficult species (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of HABITAT herbicide per acre. Excessive wetting of foliage is not recommended. See the Mixing Guide below for some suggested volumes of HABITAT herbicide and water.

For low volume, select proper nozzles to avoid over-application. Proper application is critical to ensure desirable results. Best results are achieved when the spray covers the crown and approximately 70 percent of the plant. The use of an even flat fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Recommended tip sizes include 4004E, or 1504E. For a straight stream and cone pattern, adjustable cone nozzles such as 5500 X3 or 5500 X4 may be used. Attaching a roll-over valve

onto a Spraying Systems Model 30 gunjet or other similar spray guns allows for the use of both a flat fan and cone tips on the same gun.

Moisten, but do not drench target vegetation causing spray solution to run off.

Low Volume Foliar with Backpacks:
For low growing species, spray down on the crown, covering crown and penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least two sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, lace sides of the target vegetation by directing spray to at least two sides of the target in smooth zigzag motions from crown to bottom.

Low Volume Foliar with Hydraulic Handgun Application Equipment:
Use same technique as described above for Low Volume with Backpacks.

For broadcast applications, simulate a gentle rain near the top of target vegetation, allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution which contacts the understory may result in severe injury or death of plants in the understory.

SPRAY SOLUTION MIXING GUIDE FOR LOW VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)				
	0.5%	0.75%	1%	1.5%	5%
	(amount of HABITAT to use)				
1 gallon	0.6 oz.	0.9 oz.	1.3 oz.	1.9 oz.	6.5 oz.
3 gallons	1.9 oz.	2.8 oz.	3.8 oz.	5.8 oz.	1.2 pints
4 gallons	2.5 oz.	3.8 oz.	5.1 oz.	7.7 oz.	1.6 pints
5 gallons	3.2 oz.	4.8 oz.	6.5 oz.	9.6 oz.	2 pints
50 gallons	2 pints	3 pints	4 pints	6 pints	10 quarts
100 gallons	4 pints	6 pints	8 pints	6 quarts	5 gallons

2 tablespoons = 1 fluid ounce

High Volume Foliar:
For optimum performance when spraying medium to high density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray run-off, causing increased ground cover injury,

and injury to desirable species. To prepare the spray solution, thoroughly mix HABITAT herbicide in water and add a surfactant (See Adjuvant section for specific recommendations and rates of surfactants). A foam reducing agent may be added at the recommended label rate, if needed. For control of difficult species (see AQUATIC WEEDS CONTROLLED section and the ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE section for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes but do not apply more than 6 pints of HABITAT herbicide per acre. Uniformly cover the foliage of the vegetation to be controlled but do not apply to run-off. Excessive wetting of foliage is not recommended.

Side Trimming:

DO NOT side trim with HABITAT herbicide unless severe injury or death of the treated tree can be tolerated. HABITAT herbicide is readily translocated and can result in death of the entire tree.

CUT SURFACE TREATMENTS

HABITAT herbicide may be used to control undesirable woody vegetation by applying the HABITAT herbicide solution to the cambium area of freshly-cut stump surfaces or to fresh cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Do not overapply solution causing run-off from the cut surface.

Injury may occur to desirable woody plants if the shoots extend from the same root system or their root systems are grafted to those of the treated tree.

Cut Surface Applications with Dilute and Concentrate Solutions:

HABITAT herbicide may be mixed as either a concentrated or dilute solution. The dilute solution may be used for applications to the cut surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of HABITAT herbicide with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of HABITAT herbicide with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack&squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3 inch DBH tree will receive 1 injection cut and a 6 inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of HABITAT herbicide into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED

HABITAT herbicide will control the following target species as specified in the BASF RECOMMENDATION section of the table. Rate recommendations are expressed in terms of product volume for broadcast applications and as a %solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of HABITAT herbicide per acre.**

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Floating Species		
Duckweed	*Lemna minor*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Duckweed, Giant	*Spirodela polyriza*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Frogbit	*Limnobium spongia*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Spadderdock	*Nuphar luteum*	Apply a tank-mix of 2-4 pints/acre HABITAT + 4 to 6 pints/acre glyphosate (0.5% HABITAT + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing, emergent foliage.
Water Hyacinth	*Eichhornia crassipes*	1-2 pints/acre (0.5% solution) applied in 100 GPA water to actively growing foliage.
Water Lettuce-	Pistia stratiotes	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Emerged Species		
Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage. Tank-mix with glyphosate is NOT recommended, and may reduce alligatorweed control, requiring higher HABITAT rates.
Arrowhead, Duck-potato	*Sagittaria spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water

		mix. Ensure 100% coverage of actively growing, emergent foliage.
Bacopa, lemon	*Bacopa spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Parrot feather	*Myriophyllum aquaticum*	Must be foliage above water for sufficient HABITAT uptake. Apply 2 - 4 pints to actively growing emergent foliage.
Pennywort	*Hydrocotyle spp.*	1-2 pints/acre (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Pickerelweed	*Pontederia cordata*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Taro, wild; Dasheen; Elephant's Ear; Coco Yam	*Colocasia esculentum*	4-6 pints/acre (1.5% solution) applied in 100 GPA with a high quality 'sticker' adjuvant. Ensure good coverage of actively growing, emergent foliage.
Water lily	*Nymphaea tuberosa*	2-3 pints/acre (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing, emergent foliage.
Water primrose	*Ludwigia uruguayensis*	4-6 pints/acre (1.5% solution), ensure 100% coverage of actively growing, emergent foliage. Tank-mix with glyphosate is NOT recommended and may reduce water primrose control.
Terrestrial/Marginal		
Soda Apple, aquatic; Nightshade	*Solanum tampicense*	2 pts/acre applied to foliage
Bamboo, Japanese	*Phyllostachys spp*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	*Schinus terebinthifolius*	2 - 4 pints/acre applied to foliage
Cattail	*Typha spp.*	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	*Sapium sebiferum*	16 to 24oz applied to foliage
Cogon Grass	*Imperata cylindrica*	Burn foliage, till area, that fall spray 2qt/acre HABITAT + MSO applied to new growth.
Cordgrass, prairie	*Spartina spp.*	4-6 pints applied to actively growing foliage
Cutgrass	*Zizaniopsis miliacea*	4-6 pints applied to actively growing foliage
Elephant Grass; Napier Grass	*Pennisetum purpureum*	3pts/acre applied to actively growing foliage
Flowering rush	*Butomus typha*	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	*Arundo donax*	4 to 6 pints/acre applied in spring to actively growing foliage
Golden Bamboo	*Phyllostachys aurea*	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3-4 pints applied to actively growing foliage
Knapweeds	*Centaurea species*	Russian Knapweed - 2 to 3 pints + 1qt/acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	*Polygonum cuspidatum*	3 to 4 pts/acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	*Melaleuca quinquenervia*	For established stands, apply 6 pints/acre HABITAT herbicide + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt/A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially

		in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% HABITAT herbicide + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
Nutgrass; Kili'p'opu -	*Cyperus rotundus*	2 pints HABITAT + 1qt/acre MSO applied early postemergence
Nutsedge	*Cyperus spp.*	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.
Phragmites; Common Reed,	*Phragmites australis*	4 to 6 pints/acre applied to actively growing, green foliage after full leaf elongation, ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn, allow to re-grow to approximately 5' tall before treatment. Lower rates will control phragmites in the north; higher rates are needed in the south.
Poison Hemlock-	*Conium maculatum*	2 pints HABITAT + 1qt/acre MSO applied preemergence to early postemergence to rosette, prior to flowering
Purple Loosestrife	*Lythrum salicaria*	1pint/acre applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/acre applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pts/acre applied to actively growing foliage
Russian-Olive	*Elaeagnus angustifolia*	2 to 4 pints/acre or a 1% solution, applied to foliage
Saltcedar; Tamarisk	*Tamarix species*	Aerial apply 2qts HABITAT + 0.25%v/v NIS applied to actively growing foliage during flowering. For spot spraying use 1% solution of HABITAT + 0.25%v/v NIS and spray to wet foliage. After application wait at least two years before disturbing treated saltcedar. Earlier disturbance can reduce overall control..
Smartweed	*Polygonum spp.*	2 pints/acre applied early postemergence
Sumac	*Rhus spp.*	2 to 3 pts/acre applied to foliage
Swamp Morning Glory; Water Spinach; Kangkong-	*Ipomoea aquatica*	1 to 2 pints/acre HABITAT + 1qt/acre MSO applied early postemergence
Torpedo Grass-	*Panicum repens*	4 pints/acre (1 - 1.5% solution), ensure good coverage to actively growing foliage.
White Top; Hoary Cress-	*Cardaria draba*	1 to 2 pints/acre applied in spring, to foliage, during flowering.
Willow	*Salix spp.*	2 to 3 pts/acre HABITAT applied to actively growing foliage, ensure good coverage.

ADDITIONAL WEEDS CONTROLLED BY HABITAT HERBICIDE

In terrestrial sites, HABITAT herbicide will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of HABITAT. For **established biennials and perennials postemergence applications of HABITAT are recommended.**

The rates shown below pertain to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low volume spray solutions (see "Low Volume" section of "Ground Applications"); low volume applications may provide control of the target species with less HABITAT per acre than is shown for the broadcast

treatments. HABITAT herbicide should be used only in accordance with the recommendations on this label and the leaflet label.

The relative sensitivity of the species listed below can also be used to determine the relative risk of causing non-target plant injury if any of the below listed species are considered to be desirable within the area to be treated.

Resistant Biotypes: Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, HABITAT herbicide should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

GRASSES

Apply 2-3 pints per acre[1]

COMMON NAME	SPECIES	GROWTH HABIT[2]
Annual bluegrass	(Poa annua)	A
Broadleaf signalgrass	(Brachiaria platyphylla)	A
Canada bluegrass	(Poa compressa)	P
Downy brome	(Bromus tectorum)	A
Fescue	(Festuca spp.)	A/P
Foxtail	(Setaria spp.)	A
Italian ryegrass	(Lolium multiflorum)	A
Johnsongrass	(Sorghum halepense)	P
Kentucky bluegrass	(Poa pratensis)	P
Napier grass	(Pennisetum purpureum)	P
Lovegrass	(Eragrostis spp.)	A/P
Orchardgrass	(Dactylis glomerata)	P
Paragrass	(Brachiaria mutica)	P
Quackgrass	(Agropyron repens)	P
Sandbur	(Cenchrus spp.)	A
Sand dropseed	(Sporobulus cryptandrus)	A
Smooth brome	(Bromus inermis)	P
Vaseygrass	(Paspalum urvillei)	P
Wild oats	(Avena fatua)	A
Witchgrass	(Panicum capillare)	A

Apply 3-4 pints per acre[1]

Barnyardgrass	(Echinochloa crus-gali)	A
Beardgrass	(Andropogon spp.)	P
Bluegrass, Annual	(Poa annua)	A

Bulrush	(Scirpus validus)	P
Cheat	(Bromus secalinus)	A
Crabgrass	(Digitaria spp.)	A
Crowfootgrass	(Dactyloctenium aegyptium)	A
Fall panicum	(Panicum dichotomiflorum)	A
Goosegrass	(Eleusine indica)	A
Itchgrass	(Rottboellia exaltata)	A
Lovegrass	(Eragrostis spp.)	A
Maidencane	(Panicum hemitomon)	A
Panicum, Browntop	(Panicum fasciculatum)	A
Panicum, Texas	(Panicum texanum)	A
Prairie threeawn	(Aristida oligantha)	P
Sandbur, Field	(Cenchrus incertus)	A
Signalgrass	(Brachiaria platyphylla)	A
Wild barley	(Hordeum spp.)	A
Wooly Cupgrass	(Eriochloa villosa)	A

Apply 4-6 pints per acre[1]

Bahiagrass	(Paspalum notatum)	P
Bermudagrass[3]	(Cynodon dactylon)	P
Big bluestem	(Andropogon gerardii)	P
Dallisgrass	(Paspalum dilatatum)	P
Feathertop	(Pennisetum villosum)	P
Guineagrass	(Panicum maximum)	P
Saltgrass[3]	(Distichlis stricta)	P
Sand dropseed	(Sporobolus cryptandrus)	P
Sprangletop	(Leptochloa spp.)	A
Timothy	(Phleum pratense)	P
Wirestem muhly	(Muhlenbergia frondosa)	P

BROADLEAF WEEDS

Apply 2-3 pints per acre[1]

Burdock	(Arctium spp.)	B
Carpetweed	(Mollugo verticillata)	A
Carolina geranium	(Geranium carolinianum)	A
Clover	(Trifolium spp.)	A/P
Common chickweed	(Stellaria media)	A
Common ragweed	(Ambrosia artemisiifolia)	A
Dandelion	(Taraxacum officinale)	P
Dogfennel	(Eupatorium capillifolium)	A
Filaree	(Erodium spp.)	A
Fleabane	(Erigeron spp.)	A
Hoary vervain	(Verbena stricta)	P
Indian mustard	(Brassica juncea)	A

Kochia	(Kochia scoparia)	A
Lambsquarters	(Chenopodium album)	A
Lespedeza	(Lespedeza spp.)	P
Miners lettuce	(Montia perfoliata)	A
Mullein	(Verbascum spp.)	B
Nettleleaf goosefoot	(Chenopodium murale)	A
Oxeye daisy	(Chrysanthemum leucanthemum)	P
Pepperweed	(Lepidium spp.)	A
Pigweed	(Amaranthus spp.)	A
Puncturevine	(Tribulus terrestris)	A
Russian thistle	(Salsola kali)	A
Smartweed	(Polygonum spp.)	A/P
Sorrell	(Rumex spp.)	P
Sunflower	(Helianthus spp.)	A
Sweet clover	(Melilotus spp.)	A/B
Tansymustard	(Descurainia pinnata)	A
Western ragweed	(Ambrosia psilostachya)	P
Wild carrot	(Daucus carota)	B
Wild lettuce	(Lactuca spp.)	A/B
Wild parsnip	(Pastinaca sativa)	B
Wild turnip	(Brassica campestris)	B
Woollyleaf bursage	(Franseria tomentosa)	P
Yellow woodsorrel	(Oxalis stricta)	P

Apply 3-4 pints per acre[1]

Broom snakeweed[4]	(Gutierrezia sarothrae)	P
Bull thistle	(Cirsium vulgare)	B
Burclover	(Medicago spp.)	A
Chickweed, Mouseear	(Cerastium vulgatum)	A
Clover, Hop	(Trifolium procumbens)	A
Cocklebur	(Xanthium strumarium)	A
Cudweed	(Gnaphalium spp.)	A
Desert Camelthorn	(Alhagi pseudalhagi)	P
Dock	(Rumex spp.)	P
Fiddleneck	(Amsinckia intermedia)	A
Goldenrod	(Solidago spp.)	P
Henbit	(Lamium amplexicaule)	A
Knotweed, prostrate	(Polygonum aviculare)	A/P
Pokeweed	(Phytolacca americana)	P
Purslane	(Portulaca spp.)	A
Pusley, Florida	(Richardia scabra)	A
Rocket, London	(Sisymbrium irio)	A
Rush skeletonweed[4]	(Chondrilla juncea)	B
Saltbush	(Atriplex spp.)	A
Shepherd's-purse	(Capsella bursa-pastoris)	A
Spurge, Annual	(Euphorbia spp.)	A

Stinging nettle[4]	(Urtica dioica)	P
Velvetleaf	(Abutilon theophrasti)	A
Yellow starthistle	(Centaurea solstitialis)	A

Apply 4-6 pints per acre[1]

Arrowwood	(Pluchea sericea)	A
Canada thistle	(Cirsium arvense)	P
Giant ragweed	(Ambrosia trifida)	A
Grey rabbitbrush	(Chrysothamnus nauseosus)	P
Little mallow	(Malva parviflora)	B
Milkweed	(Asclepias spp.)	P
Primrose	(Oenothera kunthiana)	P
Silverleaf nightshade	(Solanum elaeagnifolium)	P
Sowthistle	(Sonchus spp.)	A
Texas thistle	(Cirsium texanum)	P

VINES AND BRAMBLES

Apply 1 pint per acre

Field bindweed	(Convolvulus arvensis)	P
Hedge bindweed	(Calystegia sequium)	A

Apply 2-3 pints per acre[1]

Wild buckwheat	(Polygonum convolvulus)	P

Apply 3-4 pints per acre[1]

Greenbriar	(Smilax spp.)	P
Honeysuckle	(Lonicera spp.)	P
Morningglory	(Ipomoea spp.)	A/P
Poison ivy	(Rhus radicans)	P
Redvine	(Brunnichia cirrhosa)	P
Wild rose	(Rosa spp.)	P
Including: Multiflora rose	(Rosa multiflora)	P
Macartney rose	(Rosa bracteata)	P

Apply 4-6 pints per acre[1]

Kudzu[3]	(Pueraria lobata)	P
Trumpetcreeper	(Campsis radicans)	P
Virginia creeper	(Parthenocissus quinquefolia)	P
Wild grape	(Vitis spp.)	P

BRUSH SPECIES

Apply 4-6 pints per acre[1]

American beech	(Fagus grandifolia)	P
Ash	(Fraxinus spp.)	P
Bald cypress	(Taxodium distichum)	P
Bigleaf Maple	(Acer macrophylum)	P
Black Locust[5]	(Robinia pseudoacacia)	P
Blackgum	(Nyssa sylvatica)	P
Boxelder	(Acer negundo)	P
Cherry	(Prunus spp.)	P
Chinaberry	(Melia azadarach)	P
Dogwood	(Cornus spp.)	P
Elm[6]	(Ulmus spp.)	P
Hawthorn	(Crataegus spp.)	P
Hickory	(Carya spp.)	P
Honeylocust[5]	(Gleditsia triacanthos)	P
Maple	(Acer spp.)	P
Mulberry	(Morus spp.)	P
Oak	(Quercus spp.)	P
Persimmon	(Diospyros virginiana)	P
Pine[5]	(Pinus spp.)	P
Poplar	(Populus spp.)	P
Privet	(Ligustrum vulgare)	P
Red Alder	(Alnus rubra)	P
Red Maple	(Acer rubrum)	P
Russian Olive	(Eleagnus angustifolia)	P
Sassafras	(Sassafras albidum)	P
Sourwood	(Oxydendrum arboreum)	P
Sweetgum	(Liquidambar styraciflua)	P
Water willow	(Justica americana)	P
Willow	(Salix spp.)	P
Yellow poplar	(Liriodendron tulipifera)	P

1 The higher rates should be used where heavy or well established infestations occur.
2 Growth Habit - A = Annual, B = Biennial, P = Perennial
3 Use a minimum of 75 GPA - Control of established stands may require repeat applications.
4 For best results early postemergence applications are required.
5 Tank-mix with glyphosate or triclopyr.
6 Tank-mix with glyphosate.

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather

conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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™ Thru-Valve is a trademark of Waldrum Specialties

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DATA MATRIX

Date October 6, 2003	**EPA Reg No./File Symbol** 241-	**Page 1 of 4**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** HABITAT® herbicide	

Ingredient 1:1 salt (±) 2-(4,5-dihydro-4-methyl)-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine
CAS Registry Number 81510-83-0

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Product Identity and Composition				
830.1550 (61-1)	Product identity and composition	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1600 (61-2)	Description of starting materials	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1620 (61-2)	Description of production process	40069201	BASF Corporation	Own	
830.1650	Description of formulation process	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1670 (61-3)	Discussion of formation of impurities	40003701	BASF Corporation	Own	
		44630301	BASF Corporation	Own	
	Analysis and Certified Limits				
830.1700 (62-1)	Preliminary analysis	40069201	BASF Corporation	Own	
830.1750 (62-2)	Certified limits	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/06/03

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1800 (62-3)	Enforcement analytical method	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1900 (64-1)	Submittal of samples				NR[1]
	Physical and Chemical Characteristics				
830.6302 (63-2)	Color	40069201	BASF Corporation	Own	
830.6303 (63-3)	Physical state	40069201	BASF Corporation	Own	
830.6304 (63-4)	Odor	40069201	BASF Corporation	Own	
830.7300 (63-7)	Density, bulk density or specific gravity	40069201	BASF Corporation	Own	
830.7000 (63-12)	pH	40069201	BASF Corporation	Own	
830.6313 (63-13)	Stability to normal & elevated temperatures,				NR[2]
	metals, and metal ions				
830.6314 (63-14)	Oxidizing or reducing action	40069201	BASF Corporation	Own	
830.6315 (63-15)	Flammability	40069201	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	
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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Physical and Chemical Characteristics cont'd				
830.6316 (63-16)	Explodability	40003702	BASF Corporation	Own	
830.6317 (63-17)	Storage stability	40003702	BASF Corporation	Own	
830.7100 (63-18)	Viscosity	40069201	BASF Corporation	Own	
830.6319 (63-19)	Miscibility	40069201	BASF Corporation	Own	
830.6320 (63-20)	Corrosion characteristics	40003705	BASF Corporation	Own	
830.6321 (63-21)	Dielectric breakdown voltage				NR[3]
	Acute Testing				
870.1100 (81-1)	Acute oral toxicity	40069202	BASF Corporation	Own	
870.1200 (81-2)	Acute dermal toxicity	40069202	BASF Corporation	Own	
		44177001	BASF Corporation	Own	
870.1300 (81-3)	Acute inhalation toxicity	40003708	BASF Corporation	Own	
870.2400 (81-4)	Primary eye irritation	40069202	BASF Corporation	Own	
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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.2600 (81-6)	Dermal sensitization	40003707	BASF Corporation	Own	
870.6100 (81-7)	Acute delayed neurotoxicity				NR[4]

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/06/03

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DATA MATRIX

Date October 6, 2003	EPA Reg No./File Symbol 241-346	Page 1 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® herbicide	
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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
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CAS Registry Number 81510-83-0

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
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870.6100 (81-7)	Acute delayed neurotoxicity				NR[4]

Signature	Name and Title	Date
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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® herbicide	

Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine
CAS Registry Number 81510-83-0

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]					
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
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			BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			BASF Corporation	Own	
			BASF Corporation	Own	
					NR[1]
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
					NR[2]
			BASF Corporation	Own	
			BASF Corporation	Own	

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	Jeffrey H. Bick Global Product Regulatory Manager	10/6/03

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DATA MATRIX

Date October 6, 2003	EPA Reg No./File Symbol 241-346	Page 3 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]					
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
					NR[3]
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	
			BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/6/03

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Date October 6, 2003	EPA Reg No./File Symbol 241-346	Page 4 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			BASF Corporation	Own	
					NR[4]

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Date October 6, 2003	EPA Reg No./File Symbol 241-286	Page 1 of 24
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 830	PRODUCT PROPERTIES TEST GUIDELINES				
	Product Identity, Composition, and Analysis				
	Test Guidelines				
830.1550 (61-1)	Product identity and composition	00132028	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1600 (61-2)	Description of materials used to produce the	00132028	BASF Corporation	Own	
	product	00145872	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1620 (61-2)	Description of production process	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	

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Date October 6, 2003	EPA Reg No./File Symbol 241-286	Page 2 of 24
Applicant's/Registrant's Name & Address: BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1620 (61-2)	Description of production process	00147121	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
830.1670 (61-3)	Discussion of formation of impurities	00132028	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1700 (62-1)	Preliminary analysis	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	
		43423702	BASF Corporation	Own	
830.1750 (62-2)	Certified limits	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1750 (62-2)	Certified limits	43423702	BASF Corporation	Own	
830.1800 (62-3)	Enforcement analytical method	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	
		43423702	BASF Corporation	Own	
830.1900 (64-1)	Submittal of samples	00147120	BASF Corporation	Own	
	Physical/Chemical Properties Test Guidelines				
830.6302 (63-2)	Color	00132028	BASF Corporation	Own	
830.6302 (63-2)	Color	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6303 (63-3)	Physical state	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6304 (63-4)	Odor	00132028	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6304 (63-4)	Odor	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6313 (63-13)	Stability to normal & elevated temperatures,	00132028	BASF Corporation	Own	
	metals, and metal ions	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		44341401	BASF Corporation	Own	
830.6314 (63-14)	Oxidation/reduction: chemical incompatability				NR[1]
830.6315 (63-15)	Flammability				NR[2]
830.6316 (63-16)	Explodability	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6317 (63-17)	Storage stability	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		42087301	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6319 (63-19)	Miscibility				NR[2]
830.6320 (63-20)	Corrosion characteristics	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		42087301	BASF Corporation	Own	
830.6321 (63-21)	Dielectric breakdown voltage				NR[2]
830.7000 (63-12)	pH	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7100 (63-130	Viscosity				NR[2]
830.7200 (63-5)	Melting point/melting range	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7220 (63-6)	Boiling point/boiling range				NR[2]

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.7300 (63-7)	Density/relative density/bulk density	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7370 (63-10)	Dissociation constants in water	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7550 (63-11)	Partition coefficient (n-octanol/water), shake flask	00132028	BASF Corporation	Own	
	method	00145872	BASF Corporation	Own	
		00131639	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7840 (63-8)	Water solubility: column elution method; shake	00132028	BASF Corporation	Own	
	flask method	00145872	BASF Corporation	Own	
		41664701	BASF Corporation	Own	
830.7950 (63-9)	Vapor pressure	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 835	FATE, TRANSPORT, AND TRANSFORMATION				
	TEST GUIDELINES				
	Degradation Studies - Lab				
(161-1)	Hydrolysis	00132359	BASF Corporation	Own	
		93048034	BASF Corporation	Own	
	Photodegradation				
(161-2)	In water	00131617	BASF Corporation	Own	
		93048035	BASF Corporation	Own	
(161-3)	On soil	40003713	BASF Corporation	Own	
		93048036	BASF Corporation	Own	
	Metabolism Studies - Lab				
(162-1)	Aerobic soil	00131618	BASF Corporation	Own	
		41023201	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
(162-1)	Aerobic soil	93048037	BASF Corporation	Own	
		45119701	BASF Corporation	Own	
(162-2)	Anaerobic soil	00131619	BASF Corporation	Own	
		93048038	BASF Corporation	Own	
(162-3)	Anaerobic aquatic	40003712	BASF Corporation	Own	
		93048039	BASF Corporation	Own	
(162-4)	Aerobic aquatic	41002301	BASF Corporation	Own	
		93048040	BASF Corporation	Own	
		45119702	BASF Corporation	Own	
	Mobility Studies				
(163-1)	Leaching and adsorption/desorption	00131620	BASF Corporation	Own	
		93048041	BASF Corporation	Own	
		43423703	BASF Corporation	Own	
		45119705	BASF Corporation	Own	
	Dissipation Studies- Field				

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
(164-1)	Soil	00131622	BASF Corporation	Own	
		00131623	BASF Corporation	Own	
		00131624	BASF Corporation	Own	
		42192101	BASF Corporation	Own	
		42192102	BASF Corporation	Own	
		43107101	BASF Corporation	Own	
		43107102	BASF Corporation	Own	
		43107103	BASF Corporation	Own	
	- Methods for soil & pond water	45119703	BASF Corporation	Own	
	- Storage stability: soil, sediment, pond water	45119704	BASF Corporation	Own	
	- Terrestrial dissipation	45119706	BASF Corporation	Own	
(164-2)	Aquatic (sediment)	41891501	BASF Corporation	Own	
	- Methods for soil & pond water	45119703	BASF Corporation	Own	
	- Storage stability: soil, sediment, pond water	45119704	BASF Corporation	Own	
	- Aquatic dissipation (studies)	45119707	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	- Aquatic dissipation (modeling)	45119708	BASF Corporation	Own	
(164-3)	Forestry	40003714	BASF Corporation	Own	
		40003704	BASF Corporation	Own	
		93048042	BASF Corporation	Own	
Non-Guideline	Weed and Soil Metabolism	00258899	BASF Corporation	Own	
	SPRAY DRIFT TEST GUIDELINES				
835.1510 (201-1)	Droplet size spectrum	SDTF Data	Member of Spray Drift Task Force	Own	
840.4200 (202-1)	Drift field evaluation	SDTF Data	Member of Spray Drift Task Force	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Rosearch Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 850	ECOLOGICAL EFFECTS TEST GUIDELINES				
	Aquatic Fauna Test Guidelines				
850.1010 (72-2)	Aquatic invertebrate acute toxicity test,	00131632	BASF Corporation	Own	
	freshwater daphnids	93048010	BASF Corporation	Own	
		00147117	BASF Corporation	Own	
850.1010 (72-2)	Aquatic invertebrate acute toxicity test,				
	freshwater daphnids (TEP)	00131632	BASF Corporation	Own	
		00258898	BASF Corporation	Own	
		93048010	BASF Corporation	Own	
850.1025 (72-3)	Oyster acute toxicity test (shell deposition)	41315802	BASF Corporation	Own	
		93048012	BASF Corporation	Own	
		45119710	BASF Corporation	Own	
850.1035 (72-3)	Mysid acute toxicity test	41315803	BASF Corporation	Own	
		93048013	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.1075 (72-1,3)	Fish acute toxicity test, freshwater and marine				
	Warmwater species - TGAI Bluegill Sunfish	00131630	BASF Corporation	Own	
		93048008	BASF Corporation	Own	
	Warmwater species - TGAI Channel Catfish	00131631	BASF Corporation	Own	
850.1075 (72-1,3)	Warmwater species - TEP-Bluegill Sunfish	00147116	BASF Corporation	Own	
		00258898	BASF Corporation	Own	
850.1075 (72-1,3)	Coldwater species - TGAI - Rainbow Trout	00131629	BASF Corporation	Own	
		93048009	BASF Corporation	Own	
		45119713	BASF Corporation	Own	
	Marine Fish - TGAI	41315801	BASF Corporation	Own	
		93048011	BASF Corporation	Own	
850.1300 (72-4(b))	Daphnid chronic toxicity test	41315805	BASF Corporation	Own	
		93048015	BASF Corporation	Own	

Signature	Name and Title Jeffrey H. Birk Global Product Regulatory Manager	Date 10/6/03

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DATA MATRIX

Date October 6, 2003	**EPA Reg No./File Symbol** 241-286	**Page 13 of 24**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.1400 [72-4(a)]	Fish early-life stage toxicity test	41315804	BASF Corporation	Own	
		93048014	BASF Corporation	Own	
		45119711	BASF Corporation	Own	
850.1500 (72-5)	Fish life cycle toxicity	45119712	BASF Corporation	Own	
850.1710 (72-6)	Oyster BCF	45119709	BASF Corporation	Own	
850.1730 (72-6/165-4)	Fish bioconcentration factor - fish	00147120	BASF Corporation	Own	
	Grass shrimp	45119709	BASF Corporation	Own	
	Terrestrial Wildlife Test Guidelines				
850.2100 (71-1)	Avian acute oral toxicity test				
	Bobwhite Quail	00131633	BASF Corporation	Own	
850.2100 (71-1)	Bobwhite Quail	93048005	BASF Corporation	Own	
	Mallard Duck	00131634	BASF Corporation	Own	
850.2100 (71-1)	Mallard Duck	93048004	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.2100 (71-1)	Bobwhite Quail (TEP)	00260405	BASF Corporation	Own	
	Mallard Duck (TEP)	00260405	BASF Corporation	Own	
850.2200 (71-2)	Avian dietary toxicity test				
	Upland Game Bird	00131635	BASF Corporation	Own	
		93048006	BASF Corporation	Own	
	Waterfowl	00131636	BASF Corporation	Own	
		93048007	BASF Corporation	Own	
850.2200 (71-2)	Avian dietary toxicity test				
	Upland Game Bird (TEP)	00260405	BASF Corporation	Own	
	Waterfowl (TEP)	00260405	BASF Corporation	Own	
850.2300 (71-4)	Avian reproduction test				
	Bobwhite Quail	43831401	BASF Corporation	Own	
	Mallard Duck	43831402	BASF Corporation	Own	
		45119714	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr: 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Beneficial Insects and Invertebrates Test				
	Guidelines				
850.3020 (141-1)	Honey bee acute contact toxicity	00131637	BASF Corporation	Own	
		93048032	BASF Corporation	Own	
		00251506	BASF Corporation	Own	
850.3030 (141-2)	Honey bee – toxicity of residues on foliage				NR[3]
	Nontarget Plants Test Guidelines				
850.4100 (122-1(a))	Terrestrial plant toxicity, tier I (seedling	40003711	BASF Corporation	Own	
	emergence)	40811801	BASF Corporation	Own	
		93048029	BASF Corporation	Own	
850.4150 (122-1(b))	Terrestrial plant toxicity, tier I (vegetative vigor)	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		93048030	BASF Corporation	Own	
850.4200 (122-1)	Seed germination/root elongation toxicity test	40811801	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
		93048029	BASF Corporation	Own	
850.4225 (123-1)	Seedling emergence, tier II	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		93048029	BASF Corporation	Own	
850.4250 (123-1)	Vegetative vigor, tier II	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		43889101	BASF Corporation	Own	
		93048030	BASF Corporation	Own	
850.4400 (122-2 & 123-2)	Aquatic plant toxicity test using *Lemna spp.*,	40003710	BASF Corporation	Own	
	tiers I and II	40811802	BASF Corporation	Own	
		93048031	BASF Corporation	Own	
		43889102	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Toxicity to Microorganisms Test Guidelines				
650.5400 (122-2 & 123-2)	Algal toxicity, tiers I and II	40003710	BASF Corporation	Own	
		40611802	BASF Corporation	Own	
		43889102	BASF Corporation	Own	
		93048031	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 860	RESIDUE CHEMISTRY TEST GUIDELINES				
860.1100 (171-2)	Chemical identity	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048043	BASF Corporation	Own	
860.1200 (171-3)	Directions for use	93048044	BASF Corporation	Own	
860.1300 (171-4(a))	Nature of residues in plants -- corn	43861503	BASF Corporation	Own	
	- bermudagrass	45119715	BASF Corporation	Own	
	- bermudagrass	45119700	BASF Corporation	PUB	
	- bermudagrass	45119700	BASF Corporation	PUB	
	- bermudagrass	45119700	BASF Corporation	PUB	
860.1300 (171-4(b))	Nature of residues in animals - ruminants	43861504	BASF Corporation	Own	
		45119716	BASF Corporation	Own	
	Nature of residues in animals - poultry	43861505	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
860.1340 (171-4(c,d))	Residue analytical methods				
	Palm Oil	40403703	BASF Corporation	Own	
	Corn	43861506	BASF Corporation	Own	
	Corn	43861516	BASF Corporation	Own	
	Grass, meat, milk, fish, shellfish	45119716	BASF Corporation	Own	
		45119718	BASF Corporation	Own	
	Soil and pond water	45119703	BASF Corporation	Own	
	Magnitude of the Residue				
860.1380 (171-4(o))	Storage stability data - corn	43861517	BASF Corporation	Own	
	corn	43861503	BASF Corporation	Own	
	corn	44081901	BASF Corporation	Own	
	corn	44272201	BASF Corporation	Own	
	meal, milk, fish	45119719	BASF Corporation	Own	
	soil, sediment, pond water	45119704	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address	BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product	ARSENAL® Technical herbicide	

Ingredient: Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
860.1400 (171-4(f, g, h))	Water, fish, and irrigated crops – oysters	45119709	BASF Corporation	Own	
	clam	45119722	BASF Corporation	Own	
	grass shrimp	45119709	BASF Corporation	Own	
	flowing water	45119708	BASF Corporation	Own	
	fish	00147120	BASF Corporation	Own	
860.1480 (171-4(j))	Meat/milk/poultry/eggs	45119721	BASF Corporation	Own	
860.1500 (171-4(k))	Crop field trials – corn	43861518	BASF Corporation	Own	
	Grass	45119720	BASF Corporation	Own	
860.1520 (171-4(l))	Processed food/feed				
	Corn	43861503	BASF Corporation	Own	
	Palm Oil	40403702	BASF Corporation	Own	
	Palm Oil	40403701	BASF Corporation	Own	
	Refined Sugar	40421601	BASF Corporation	Own	
860.1850 (165-1)	Confined accumulation in rotational crops	43861502	BASF Corporation	Own	
		45119717	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 870	HEALTH EFFECTS TEST GUIDELINES				
	Acute Toxicity Test				
870.0000	Toxicology summary	41039501	BASF Corporation	Own	
870.1100 (81-1)	Acute oral toxicity - rat	00251502	BASF Corporation	Own	
		41551002	BASF Corporation	Own	
		44735301	BASF Corporation	Own	
		93048016	BASF Corporation	Own	
		45119723	BASF Corporation	Own	
870.1200 (81-2)	Acute dermal toxicity - rabbit	00251502	BASF Corporation	Own	
		41551003	BASF Corporation	Own	
		93048017	BASF Corporation	Own	
870.1300 (81-3)	Acute inhalation toxicity - rat	00132032	BASF Corporation	Own	
		93048018	BASF Corporation	Own	
870.2400 (81-4)	Acute eye irritation - rabbit	00251502	BASF Corporation	Own	
		41551001	BASF Corporation	Own	

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Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.2400 (81-4)	Acute eye irritation - rabbit	93048019	BASF Corporation	Own	
870.2500 (81-5)	Acute dermal irritation - rabbit	00251502	BASF Corporation	Own	
		41551004	BASF Corporation	Own	
		93048020	BASF Corporation	Own	
870.2600 (81-6)	Skin sensitization - guinea pig	00131607	BASF Corporation	Own	
		93048021	BASF Corporation	Own	
	Subchronic Toxicity Test Guidelines				
670.3100 (82-1(a))	90-day oral toxicity in rodents	42774401	BASF Corporation	Own	
870.3200 (82-2)	21/28-day dermal toxicity - rabbit	00131609	BASF Corporation	Own	
		93048022	BASF Corporation	Own	
	Prenatal developmental toxicity study				
870.3700 (83-3(a))	rat	00131611	BASF Corporation	Own	
		00131612	BASF Corporation	Own	
		93048023	BASF Corporation	Own	

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Ingredient Imazapyr: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.3700 (83-3(b))	rabbit	00131613	BASF Corporation	Own	
		00131614	BASF Corporation	Own	
		93048024	BASF Corporation	Own	
870.3800 (83-4)	Reproduction and fertility effects	41039505	BASF Corporation	Own	
	Chronic Toxicity Test Guidelines				
870.4100 (83-1(b))	Chronic toxicity - dog	41039502	BASF Corporation	Own	
870.4200 (83-2(b))	Carcinogenicity - mouse	41039504	BASF Corporation	Own	
		42774401	BASF Corporation	Own	
870.4300 (83-5)	Combined chronic toxicity/carcinogenicity - rat	41039503	BASF Corporation	Own	
		42062401	BASF Corporation	Own	
		42774401	BASF Corporation	Own	
	Genetic Toxicity Test Guidelines				
870.5100 (84-2)	Bacterial reverse mutation assays	00131615	BASF Corporation	Own	
		93048025	BASF Corporation	Own	

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Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.5300 (84-2)	In vitro mammalian cell gene mutation test	00151641	BASF Corporation	Own	
870.5300 (84-2)	In vitro mammalian cell gene mutation test	93048028	BASF Corporation	Own	
870.5375 (84-2)	In vitro mammalian chromosome aberration test	00151640	BASF Corporation	Own	
		93048026	BASF Corporation	Own	
870.5450 (84-2)	Rodent dominant lethal assay	00151638	BASF Corporation	Own	
870.5550 (84-2)	Unscheduled DNA synthesis in mammalian cells	00151639	BASF Corporation	Own	
	in culture	93048027	BASF Corporation	Own	
	Special Studies Test Guidelines				
870.7485 (85-1)	Metabolism and pharmacokinetics	00131616	BASF Corporation	Own	
		43861501	BASF Corporation	Own	

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	

Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine
CAS Registry Number 81510-83-0

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Product Identity and Composition				
830.1550 (61-1)	Product identity and composition	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1600 (61-2)	Description of starting materials	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1620 (61-2)	Description of production process	40069201	BASF Corporation	Own	
830.1650	Description of formulation process	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1670 (61-3)	Discussion of formation of impurities	40003701	BASF Corporation	Own	
		44630301	BASF Corporation	Own	
	Analysis and Certified Limits				
830.1700 (62-1)	Preliminary analysis	40069201	BASF Corporation	Own	
830.1750 (62-2)	Certified limits	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/06/03

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DATA MATRIX

Date October 6, 2003	EPA Reg No./File Symbol 241-	Page 2 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1800 (62-3)	Enforcement analytical method	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1900 (64-1)	Submittal of samples				NR[1]
	Physical and Chemical Characteristics				
830.6302 (63-2)	Color	40069201	BASF Corporation	Own	
830.6303 (63-3)	Physical state	40069201	BASF Corporation	Own	
830.6304 (63-4)	Odor	40069201	BASF Corporation	Own	
830.7300 (63-7)	Density, bulk density or specific gravity	40069201	BASF Corporation	Own	
830.7000 (63-12)	pH	40069201	BASF Corporation	Own	
830.6313 (63-13)	Stability to normal & elevated temperatures,				NR[2]
	metals, and metal ions				
830.6314 (63-14)	Oxidizing or reducing action	40069201	BASF Corporation	Own	
830.6315 (63-15)	Flammability	40069201	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Bick Global Product Regulatory Manager	10/06/03

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Date October 6, 2003	EPA Reg No./File Symbol 241-	Page 3 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Physical and Chemical Characteristics cont'd				
830.6316 (63-16)	Explodability	40003702	BASF Corporation	Own	
830.6317 (63-17)	Storage stability	40003702	BASF Corporation	Own	
830.7100 (63-18)	Viscosity	40069201	BASF Corporation	Own	
830.6319 (63-19)	Miscibility	40069201	BASF Corporation	Own	
830.6320 (63-20)	Corrosion characteristics	40003705	BASF Corporation	Own	
830.6321 (63-21)	Dielectric breakdown voltage				NR[3]
	Acute Testing				
870.1100 (81-1)	Acute oral toxicity	40069202	BASF Corporation	Own	
870.1200 (81-2)	Acute dermal toxicity	40069202	BASF Corporation	Own	
		44177001	BASF Corporation	Own	
870.1300 (81-3)	Acute inhalation toxicity	40003708	BASF Corporation	Own	
870.2400 (81-4)	Primary eye irritation	40069202	BASF Corporation	Own	
870.2500 (81-5)	Primary dermal irritation	40069202	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/06/03

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Date October 6, 2003	EPA Reg No./File Symbol 241-	Page 4 of 4
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product HABITAT® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.2600 (81-6)	Dermal sensitization	40003707	BASF Corporation	Own	
870.6100 (81-7)	Acute delayed neurotoxicity				NR[4]

Signature	Name and Title Jeffrey H. Birk Global Product Regulatory Manager	Date 10/06/03

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DATA MATRIX

Date October 6, 2003 | **EPA Reg No./File Symbol** 241-346 | **Page 1 of 4**

Applicant's/Registrant's Name & Address
BASF, 26 Davis Drive, Research Triangle Park, NC 27709

Product ARSENAL® herbicide

Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine
CAS Registry Number 81510-83-0

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Product Identity and Composition				
830.1550 (61-1)	Product identity and composition	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1600 (61-2)	Description of starting materials	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1620 (61-2)	Description of production process	40069201	BASF Corporation	Own	
830.1650	Description of formulation process	40003701	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1670 (61-3)	Discussion of formation of impurities	40003701	BASF Corporation	Own	
		44630301	BASF Corporation	Own	
	Analysis and Certified Limits				
830.1700 (62-1)	Preliminary analysis	40069201	BASF Corporation	Own	
830.1750 (62-2)	Certified limits	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/06/03

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DATA MATRIX

Date October 6, 2003	**EPA Reg No./File Symbol** 241-346	**Page 2 of 4**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1800 (62-3)	Enforcement analytical method	40003703	BASF Corporation	Own	
		40069201	BASF Corporation	Own	
830.1900 (64-1)	Submittal of samples				NR[1]
	Physical and Chemical Characteristics				
830.6302 (63-2)	Color	40069201	BASF Corporation	Own	
830.6303 (63-3)	Physical state	40069201	BASF Corporation	Own	
830.6304 (63-4)	Odor	40069201	BASF Corporation	Own	
830.7300 (63-7)	Density, bulk density or specific gravity	40069201	BASF Corporation	Own	
830.7000 (63-12)	pH	40069201	BASF Corporation	Own	
830.6313 (63-13)	Stability to normal & elevated temperatures,				NR[2]
	metals, and metal ions				
830.6314 (63-14)	Oxidizing or reducing action	40069201	BASF Corporation	Own	
830.6315 (63-15)	Flammability	40069201	BASF Corporation	Own	

Signature	Name and Title	Date
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Date October 6, 2003	**EPA Reg No./File Symbol** 241-346	**Page 3 of 4**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Physical and Chemical Characteristics cont'd				
830.6316 (63-16)	Explodability	40003702	BASF Corporation	Own	
830.6317 (63-17)	Storage stability	40003702	BASF Corporation	Own	
830.7100 (63-18)	Viscosity	40069201	BASF Corporation	Own	
830.6319 (63-19)	Miscibility	40069201	BASF Corporation	Own	
830.6320 (63-20)	Corrosion characteristics	40003705	BASF Corporation	Own	
830.6321 (63-21)	Dielectric breakdown voltage				NR[3]
	Acute Testing				
870.1100 (81-1)	Acute oral toxicity	40069202	BASF Corporation	Own	
870.1200 (81-2)	Acute dermal toxicity	40069202	BASF Corporation	Own	
		44177001	BASF Corporation	Own	
870.1300 (81-3)	Acute inhalation toxicity	40003708	BASF Corporation	Own	
870.2400 (81-4)	Primary eye irritation	40069202	BASF Corporation	Own	
870.2500 (81-5)	Primary dermal irritation	40069202	BASF Corporation	Own	

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Date October 6, 2003	**EPA Reg No./File Symbol** 241-346	**Page 4 of 4**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® herbicide	
Ingredient 1:1 salt (±) 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid plus 2-propanamine CAS Registry Number 81510-83-0		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.2600 (81-6)	Dermal sensitization	40003707	BASF Corporation	Own	
870.6100 (81-7)	Acute delayed neurotoxicity				NR[4]

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/06/03

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Date October 6, 2003	EPA Reg No./File Symbol 241-286	Page 1 of 24
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 830	PRODUCT PROPERTIES TEST GUIDELINES				
	Product Identity, Composition, and Analysis				
	Test Guidelines				
830.1550 (61-1)	Product identity and composition	00132028	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1600 (61-2)	Description of materials used to produce the	00132028	BASF Corporation	Own	
	product	00145872	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1820 (61-2)	Description of production process	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	

Signature	Name and Title Jeffrey H. Birk Global Product Regulatory Manager	Date 10/6/03

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1620 (61-2)	Description of production process	00147121	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
830.1670 (61-3)	Discussion of formation of impurities	00132028	BASF Corporation	Own	
		00147121	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048001	BASF Corporation	Own	
		43423701	BASF Corporation	Own	
830.1700 (62-1)	Preliminary analysis	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	
		43423702	BASF Corporation	Own	
830.1750 (62-2)	Certified limits	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1750 (62-2)	Certified limits	43423702	BASF Corporation	Own	
830.1800 (62-3)	Enforcement analytical method	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048002	BASF Corporation	Own	
		43423702	BASF Corporation	Own	
830.1900 (64-1)	Submittal of samples	00147120	BASF Corporation	Own	
	Physical/Chemical Properties Test Guidelines				
830.6302 (63-2)	Color	00132028	BASF Corporation	Own	
830.6302 (63-2)	Color	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6303 (63-3)	Physical state	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6304 (63-4)	Odor	00132028	BASF Corporation	Own	

Signature	Name and Title	Date
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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6304 (63-4)	Odor	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6313 (63-13)	Stability to normal & elevated temperatures,	00132028	BASF Corporation	Own	
	metals, and metal ions	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		44341401	BASF Corporation	Own	
830.6314 (63-14)	Oxidation/reduction: chemical incompatability				NR[1]
830.6315 (63-15)	Flammability				NR[2]
830.6316 (63-16)	Explodability	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.6317 (63-17)	Storage stability	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		42087301	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6319 (63-19)	Miscibility				NR[2]
830.6320 (63-20)	Corrosion characteristics	00145872	BASF Corporation	Own	
		00132028	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
		42087301	BASF Corporation	Own	
830.6321 (63-21)	Dielectric breakdown voltage				NR[2]
830.7000 (63-12)	pH	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7100 (63-130	Viscosity				NR[2]
830.7200 (63-5)	Melting point/melting range	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7220 (63-6)	Boiling point/boiling range				NR[2]

Signature	Name and Title Jeffrey H. Birk Global Product Regulatory Manager	Date 10/6/03

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Date October 6, 2003	**EPA Reg No./File Symbol** 241-286	**Page 6 of 24**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.7300 (63-7)	Density/relative density/bulk density	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7370 (63-10)	Dissociation constants in water	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7550 (63-11)	Partition coefficient (n-octanol/water), shake flask	00132028	BASF Corporation	Own	
	method	00145872	BASF Corporation	Own	
		00131639	BASF Corporation	Own	
		93048003	BASF Corporation	Own	
830.7840 (63-8)	Water solubility: column elution method; shake	00132028	BASF Corporation	Own	
	flask method	00145872	BASF Corporation	Own	
		41664701	BASF Corporation	Own	
830.7950 (63-9)	Vapor pressure	00145872	BASF Corporation	Own	
		93048003	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	Product ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 835	FATE, TRANSPORT, AND TRANSFORMATION				
	TEST GUIDELINES				
	Degradation Studies - Lab				
(161-1)	Hydrolysis	00132359	BASF Corporation	Own	
		93048034	BASF Corporation	Own	
	Photodegradation				
(161-2)	In water	00131617	BASF Corporation	Own	
		93048035	BASF Corporation	Own	
(161-3)	On soil	40003713	BASF Corporation	Own	
		93048036	BASF Corporation	Own	
	Metabolism Studies - Lab				
(162-1)	Aerobic soil	00131618	BASF Corporation	Own	
		41023201	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
(162-1)	Aerobic soil	93048037	BASF Corporation	Own	
		45119701	BASF Corporation	Own	
(162-2)	Anaerobic soil	00131619	BASF Corporation	Own	
		93048038	BASF Corporation	Own	
(162-3)	Anaerobic aquatic	40003712	BASF Corporation	Own	
		93048039	BASF Corporation	Own	
(162-4)	Aerobic aquatic	41002301	BASF Corporation	Own	
		93048040	BASF Corporation	Own	
		45119702	BASF Corporation	Own	
	Mobility Studies				
(163-1)	Leaching and adsorption/desorption	00131620	BASF Corporation	Own	
		93048041	BASF Corporation	Own	
		43423703	BASF Corporation	Own	
		45119705	BASF Corporation	Own	
	Dissipation Studies- Field				

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Ingredient imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
(164-1)	Soil	00131622	BASF Corporation	Own	
		00131623	BASF Corporation	Own	
		00131624	BASF Corporation	Own	
		42192101	BASF Corporation	Own	
		42192102	BASF Corporation	Own	
		43107101	BASF Corporation	Own	
		43107102	BASF Corporation	Own	
		43107103	BASF Corporation	Own	
	- Methods for soil & pond water	45119703	BASF Corporation	Own	
	- Storage stability: soil, sediment, pond water	45119704	BASF Corporation	Own	
	- Terrestrial dissipation	45119706	BASF Corporation	Own	
(164-2)	Aquatic (sediment)	41691501	BASF Corporation	Own	
	- Methods for soil & pond water	45119703	BASF Corporation	Own	
	- Storage stability: soil, sediment, pond water	45119704	BASF Corporation	Own	
	- Aquatic dissipation (studies)	45119707	BASF Corporation	Own	

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Ingredient Imazapyr; 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	- Aquatic dissipation (modeling)	45119708	BASF Corporation	Own	
[164-3]	Forestry	40003714	BASF Corporation	Own	
		40003704	BASF Corporation	Own	
		93048042	BASF Corporation	Own	
Non-Guideline	Weed and Soil Metabolism	00258899	BASF Corporation	Own	
	SPRAY DRIFT TEST GUIDELINES				
835.1510 (201-1)	Droplet size spectrum	SDTF Data	Member of Spray Drift Task Force	Own	
840.4200 (202-1)	Drift field evaluation	SDTF Data	Member of Spray Drift Task Force	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 850	ECOLOGICAL EFFECTS TEST GUIDELINES				
	Aquatic Fauna Test Guidelines				
850.1010 (72-2)	Aquatic invertebrate acute toxicity test,	00131632	BASF Corporation	Own	
	freshwater daphnids	93048010	BASF Corporation	Own	
		00147117	BASF Corporation	Own	
850.1010 (72-2)	Aquatic invertebrate acute toxicity test,				
	freshwater daphnids (TEP)	00131632	BASF Corporation	Own	
		00258898	BASF Corporation	Own	
		93048010	BASF Corporation	Own	
850.1025 (72-3)	Oyster acute toxicity test (shell deposition)	41315802	BASF Corporation	Own	
		93048012	BASF Corporation	Own	
		45119710	BASF Corporation	Own	
850.1035 (72-3)	Mysid acute toxicity test	41315803	BASF Corporation	Own	
		93048013	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.1075 (72-1,3)	Fish acute toxicity test, freshwater and marine				
	Warmwater species - TGAI Bluegill Sunfish	00131630	BASF Corporation	Own	
		93048008	BASF Corporation	Own	
	Warmwater species - TGAI Channel Catfish	00131631	BASF Corporation	Own	
850.1075 (72-1,3)	Warmwater species - TEP-Bluegill Sunfish	00147116	BASF Corporation	Own	
		00258898	BASF Corporation	Own	
850.1075 (72-1,3)	Coldwater species - TGAI - Rainbow Trout	00131629	BASF Corporation	Own	
		93048009	BASF Corporation	Own	
		45119713	BASF Corporation	Own	
	Marine Fish - TGAI	41315801	BASF Corporation	Own	
		93048011	BASF Corporation	Own	
850.1300 (72-4(b))	Daphnid chronic toxicity test	41315805	BASF Corporation	Own	
		93048015	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.1400 (72-4(a))	Fish early-life stage toxicity test	41315804	BASF Corporation	Own	
		93048014	BASF Corporation	Own	
		45119711	BASF Corporation	Own	
850.1500 (72-5)	Fish life cycle toxicity	45119712	BASF Corporation	Own	
850.1710 (72-6)	Oyster BCF	45119709	BASF Corporation	Own	
850.1730 (72-6/165-4)	Fish bioconcentration factor - fish	00147120	BASF Corporation	Own	
	Grass shrimp	45119709	BASF Corporation	Own	
	Terrestrial Wildlife Test Guidelines				
850.2100 (71-1)	Avian acute oral toxicity test				
	Bobwhite Quail	00131633	BASF Corporation	Own	
850.2100 (71-1)	Bobwhite Quail	93048005	BASF Corporation	Own	
	Mallard Duck	00131634	BASF Corporation	Own	
850.2100 (71-1)	Mallard Duck	93048004	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid	CAS# 081334-34-1	

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.2100 (71-1)	Bobwhite Quail (TEP)	00260405	BASF Corporation	Own	
	Mallard Duck (TEP)	00260405	BASF Corporation	Own	
850.2200 (71-2)	Avian dietary toxicity test				
	Upland Game Bird	00131635	BASF Corporation	Own	
		93048006	BASF Corporation	Own	
	Waterfowl	00131636	BASF Corporation	Own	
		93048007	BASF Corporation	Own	
850.2200 (71-2)	Avian dietary toxicity test				
	Upland Game Bird (TEP)	00260405	BASF Corporation	Own	
	Waterfowl (TEP)	00260405	BASF Corporation	Own	
850.2300 (71-4)	Avian reproduction test				
	Bobwhite Quail	43831401	BASF Corporation	Own	
	Mallard Duck	43831402	BASF Corporation	Own	
		45119714	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Beneficial Insects and Invertebrates Test				
	Guidelines				
850.3020 (141-1)	Honey bee acute contact toxicity	00131637	BASF Corporation	Own	
		93048032	BASF Corporation	Own	
		00251506	BASF Corporation	Own	
850.3030 (141-2)	Honey bee – toxicity of residues on foliage				NR[3]
	Nontarget Plants Test Guidelines				
850.4100 (122-1(a))	Terrestrial plant toxicity, tier I (seedling	40003711	BASF Corporation	Own	
	emergence)	40811801	BASF Corporation	Own	
		93048029	BASF Corporation	Own	
850.4150 (122-1(b))	Terrestrial plant toxicity, tier I (vegetative vigor)	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		93048030	BASF Corporation	Own	
850.4200 (122-1)	Seed germination/root elongation toxicity test	40811801	BASF Corporation	Own	

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Ingredient Imazapyr: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
		93048029	BASF Corporation	Own	
850.4225 (123-1)	Seedling emergence, tier II	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		93048029	BASF Corporation	Own	
850.4250 (123-1)	Vegetative vigor, tier II	40003711	BASF Corporation	Own	
		40811801	BASF Corporation	Own	
		43889101	BASF Corporation	Own	
		93048030	BASF Corporation	Own	
850.4400 (122-2 & 123-2)	Aquatic plant toxicity test using *Lemna spp.*,	40003710	BASF Corporation	Own	
	tiers I and II	40811802	BASF Corporation	Own	
		93048031	BASF Corporation	Own	
		43889102	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Toxicity to Microorganisms Test Guidelines				
850.5400 (122-2 & 123-2)	Algal toxicity, tiers I and II	40003710	BASF Corporation	Own	
		40811802	BASF Corporation	Own	
		43889102	BASF Corporation	Own	
		93048031	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 860	RESIDUE CHEMISTRY TEST GUIDELINES				
860.1100 (171-2)	Chemical identity	00132028	BASF Corporation	Own	
		00145872	BASF Corporation	Own	
		93048043	BASF Corporation	Own	
860.1200 (171-3)	Directions for use	93048044	BASF Corporation	Own	
860.1300 (171-4(a))	Nature of residues in plants – corn	43861503	BASF Corporation	Own	
	- bermudagrass	45119715	BASF Corporation	Own	
	- bermudagrass	45119700	BASF Corporation	PUB	
	- bermudagrass	45119700	BASF Corporation	PUB	
	- bermudagrass	45119700	BASF Corporation	PUB	
860.1300 (171-4(b))	Nature of residues in animals - ruminants	43861504	BASF Corporation	Own	
		45119716	BASF Corporation	Own	
	Nature of residues in animals - poultry	43861505	BASF Corporation	Own	

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Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
860.1340 (171-4(c,d))	Residue analytical methods				
	Palm Oil	40403703	BASF Corporation	Own	
	Corn	43861506	BASF Corporation	Own	
	Corn	43861516	BASF Corporation	Own	
	Grass, meat, milk, fish, shellfish	45119716	BASF Corporation	Own	
		45119718	BASF Corporation	Own	
	Soil and pond water	45119703	BASF Corporation	Own	
	Magnitude of the Residue				
860.1380 (171-4(e))	Storage stability data - corn	43861517	BASF Corporation	Own	
	corn	43861503	BASF Corporation	Own	
	corn	44081901	BASF Corporation	Own	
	corn	44272201	BASF Corporation	Own	
	meat, milk, fish	45119719	BASF Corporation	Own	
	soil, sediment, pond water	45119704	BASF Corporation	Own	

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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
860.1400 (171-4(i, g, h))	Water, fish, and irrigated crops – oysters	45119709	BASF Corporation	Own	
	clam	45119722	BASF Corporation	Own	
	grass shrimp	45119709	BASF Corporation	Own	
	flowing water	45119708	BASF Corporation	Own	
	fish	00147120	BASF Corporation	Own	
860.1460 (171-4(j))	Meat/milk/poultry/eggs	45119721	BASF Corporation	Own	
860.1500 (171-4(k))	Crop field trials – corn	43861518	BASF Corporation	Own	
	Grass	45119720	BASF Corporation	Own	
860.1520 (171-4(l))	Processed food/feed				
	Corn	43861503	BASF Corporation	Own	
	Palm Oil	40403702	BASF Corporation	Own	
	Palm Oil	40403701	BASF Corporation	Own	
	Refined Sugar	40421601	BASF Corporation	Own	
860.1850 (165-1)	Contined accumulation in rotational crops	43861502	BASF Corporation	Own	
		45119717	BASF Corporation	Own	

Signature	Name and Title	Date
	Jeffrey H. Birk Global Product Regulatory Manager	10/6/03

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date October 6, 2003	**EPA Reg No./File Symbol** 241-286	**Page 21 of 24**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
SERIES 870	HEALTH EFFECTS TEST GUIDELINES				
	Acute Toxicity Test				
870.0000	Toxicology summary	41039501	BASF Corporation	Own	
870.1100 (81-1)	Acute oral toxicity - rat	00251502	BASF Corporation	Own	
		41551002	BASF Corporation	Own	
		44735301	BASF Corporation	Own	
		93048016	BASF Corporation	Own	
		45119723	BASF Corporation	Own	
870.1200 (81-2)	Acute dermal toxicity - rabbit	00251502	BASF Corporation	Own	
		41551003	BASF Corporation	Own	
		93048017	BASF Corporation	Own	
870.1300 (81-3)	Acute inhalation toxicity - rat	00132032	BASF Corporation	Own	
		93048018	BASF Corporation	Own	
870.2400 (81-4)	Acute eye irritation - rabbit	00251502	BASF Corporation	Own	
		41551001	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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DATA MATRIX

Date October 6, 2003	**EPA Reg No./File Symbol** 241-286	**Page 22 of 24**
Applicant's/Registrant's Name & Address BASF, 26 Davis Drive, Research Triangle Park, NC 27709	**Product** ARSENAL® Technical herbicide	

Ingredient Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.2400 (81-4)	Acute eye irritation - rabbit	93048019	BASF Corporation	Own	
870.2500 (81-5)	Acute dermal irritation - rabbit	00251502	BASF Corporation	Own	
		41551004	BASF Corporation	Own	
		93048020	BASF Corporation	Own	
870.2600 (81-6)	Skin sensitization - guinea pig	00131607	BASF Corporation	Own	
		93048021	BASF Corporation	Own	
	Subchronic Toxicity Test Guidelines				
870.3100 (82-1(a))	90-day oral toxicity in rodents	42774401	BASF Corporation	Own	
870.3200 (82-2)	21/28-day dermal toxicity - rabbit	00131609	BASF Corporation	Own	
		93048022	BASF Corporation	Own	
	Prenatal developmental toxicity study				
870.3700 (83-3(a))	rat	00131611	BASF Corporation	Own	
		00131812	BASF Corporation	Own	
		93048023	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

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Date October 6, 2003 | **EPA Reg No./File Symbol** 241-286 |

Applicant's/Registrant's Name & Address
BASF, 26 Davis Drive, Research Triangle Park, NC 27709

Product ARSENAL® Technical herbicide

Ingredient Imazapyr: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.3700 (83-3(b))	rabbit	00131613	BASF Corporation	Own	
		00131614	BASF Corporation	Own	
		93048024	BASF Corporation	Own	
870.3800 (83-4)	Reproduction and fertility effects	41039505	BASF Corporation	Own	
	Chronic Toxicity Test Guidelines				
870.4100 (83-1(b))	Chronic toxicity - dog	41039502	BASF Corporation	Own	
870.4200 (83-2(b))	Carcinogenicity - mouse	41039504	BASF Corporation	Own	
		42774401	BASF Corporation	Own	
870.4300 (83-5)	Combined chronic toxicity/carcinogenicity - rat	41039503	BASF Corporation	Own	
		42062401	BASF Corporation	Own	
		42774401	BASF Corporation	Own	
	Genetic Toxicity Test Guidelines				
870.5100 (84-2)	Bacterial reverse mutation assays	00131615	BASF Corporation	Own	
		93048025	BASF Corporation	Own	

Signature

Name and Title
Jeffrey H. Birk
Global Product Regulatory Manager

Date
10/6/03

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Ingredient Imazapyr; 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid CAS# 081334-34-1

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.5300 (84-2)	In vitro mammalian cell gene mutation test	00151641	BASF Corporation	Own	
870.5300 (84-2)	In vitro mammalian cell gene mutation test	93048028	BASF Corporation	Own	
870.5375 (84-2)	In vitro mammalian chromosome aberration test	00151640	BASF Corporation	Own	
		93048026	BASF Corporation	Own	
870.5450 (84-2)	Rodent dominant lethal assay	00151638	BASF Corporation	Own	
870.5550 (84-2)	Unscheduled DNA synthesis in mammalian cells	00151639	BASF Corporation	Own	
	In culture	93048027	BASF Corporation	Own	
	Special Studies Test Guidelines				
870.7485 (85-1)	Metabolism and pharmacokinetics	00131616	BASF Corporation	Own	
		43861501	BASF Corporation	Own	

Signature	**Name and Title** Jeffrey H. Birk, Global Product Regulatory Manager	**Date** 10/6/03

F/T

BASF Corporation

BASF

October 7, 2003

Mr. James A. Tompkins
Product Management (25)
Registration Division (H-7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
Crystal City Mall Building No. 2; Room 266A
1921 Jefferson Davis Highway
Arlington, VA 22202

RE: HABITAT® herbicide (EPA Reg. No. 241-XXX)
Request for a "Me-Too" Registration

Dear Mr. Tompkins:

BASF is requesting a "Me-Too" registration for an imazapyr-based product, to be called HABITAT herbicide. The composition of this new product is identical to that of ARSENAL® NS herbicide (EPA Reg. No. 241-346).

To support this registration request, this submission contains the following exhibits in addition to completed Registration Application, Certificate with Respect to Citation of Data and Data Matrix forms:

Exhibit 1	Proposed label for HABITAT herbicide
Exhibit 2	Proposed Basic Confidential Statement of Formula for HABITAT herbicide
Exhibit 3	Current Basic Confidential Statement of Formula for ARSENAL NS herbicide
Exhibit 4	Data Matrix for HABITAT herbicide (Internal & Public)
Exhibit 5	Data Matrix for ARSENAL herbicide (Internal & Public)
Exhibit 6	Data Matrix for ARSENAL herbicide Technical (Internal & Public)

The Confidential Statement of Formula for HABITAT herbicide (Exhibit 2) is identical to that for ARSENAL herbicide (Exhibit 3) except for amending of the Product Name, the EPA Reg. No., the Product Manager Name, Producer's Name and Address, and the updating of Suppliers Name & Address as needed. An updated version of the ARSENAL NS herbicide CSF is also being submitted under separate cover for consistency.

The data being used to support the registration of HABITAT herbicide (Exhibit 4) are the same as those that support the registration of ARSENAL herbicide (Exhibit 5).

Thank you for your assistance with this matter. If you should have any questions, please feel free to call me at (919) 547-2622.

Regards,

Jeffrey H. Birk, Ph.D.
Global Product Regulatory Manager

® Registered Trademark of BASF

26 Davis Drive, Research Triangle Park, North Carolina 27709-3528 Telephone (919) 547-2622

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BASF Corporation

BASF

October 7, 2003

Mr. James A. Tompkins
Product Management (25)
Registration Division (H-7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
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Global Product Regulatory Manager

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Page _____ is not included in this copy.

Pages 171 through 180 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

_____ Sales or other commercial/financial information.

_____ A draft product label.

__X__ The product confidential statement of formula.

_____ Information about a pending registration action.

_____ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

_____ Proprietary information pertaining to the chemical composition of an inert ingredient provided by the source of the ingredient.

_____ Attorney-Client Privilege.

_____ Claimed Confidential by submitter upon submission to the Agency.

_____ Internal Deliberative Information.

* The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.