

5905-501

11/3/2003

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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
 Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 5905-501	2. EPA Product Manager J. Miller	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Weed Rhap A-4D	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) Helena Chemical Company 225 Schilling Boulevard, Suite 300 Collierville, Tennessee 38017 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. 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

<input checked="" type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	NOTIFICATION JAN 3 - 2003
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

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

Amended draft labeling by notification per PR Notice 98-10 to correct typographical errors and update warranty statement. Certification attached in correspondence.

Section - III

1. Material This Product Will Be Packaged In:					
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Type of Container <input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> 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 <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

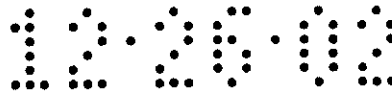
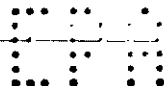
Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Emily Smathers Ratliff	Title Product Registration Supervisor	Telephone No. (Include Area Code) 901/752-4421
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.		C. Date Application Received (Stamped)
2. Signature 	3. Title Product Registration Supervisor	
4. Typed Name Emily Smathers Ratliff	5. Date 12/19/2002	

2816



HELENA CHEMICAL COMPANY
225 Schilling Blvd., Suite 300
Collierville, Tennessee 38017
Telephone: 901/761-0050



VIA FEDERAL EXPRESS

December 19, 2002

Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504C)
U. S. Environmental Protection Agency
1921 Jefferson Davis Highway
Crystal Mall #2; Room 266A
Arlington, VA 22202

RE: AMENDMENT BY NOTIFICATION TO CORRECT TYPOGRAPHICAL/PRINTING ERROR

- | | |
|---|----------|
| 1. 2,4-D AMINE | 5905-72 |
| 2. 2,4-D LV ESTER | 5905-93 |
| 3. 2,4-D LV ESTER 4 | 5905-90 |
| 4. 3 LB. CHLORATE DEFOLIANT-DESICCANT | 5905-118 |
| 5. 3.5 LB. LIQUID COPPER CONCENTRATE | 5905-483 |
| 6. 6 LB. SODIUM CHLORATE DEFOLIANT-DESICCANT | 5905-461 |
| 7. ATRAZINE 4L | 5905-470 |
| 8. ATRAZINE 90DF | 5905-522 |
| 9. BRUSH RHAP LV 4-D HERBICIDE | 5905-98 |
| 10. CITRUSPERSE SULPHUR | 5905-350 |
| 11. COPPER-Z 6/2 GRANULAR | 5905-524 |
| 12. DUSTING SULPHUR | 5905-288 |
| 13. HELENA 3.5 LB LIQUID COPPER CONCENTRATE | 5905-483 |
| 14. LIQUID SULFUR SIX | 5905-437 |
| 15. MSMA PLUS HC | 5905-164 |
| 16. MSMA PLUS | 5905-66 |
| 17. MSMA ARSONATE LIQUID | 5905-67 |
| 18. PAR F 70 SOLUBLE OIL | 5905-520 |
| 19. SOL OIL 97 | 5905-294 |
| 20. WEED RHAP A-4D | 5905-501 |
| 21. WEED RHAP A-6D | 5905-503 |
| 22. WEED RHAP LOW VOLATILE GRANULAR D HERBICIDE | 5905-507 |
| 23. WEED RHAP LV-6D | 5905-508 |
| 24. WEED RHAP LV-4D | 5905-505 |

Dear Sherada:

Attached is draft amended labeling for the above referenced Helena Chemical Company products. All of these products are being amended by notification as allowed by PR Notice 98-10. The change consists only of a correction to the First Aid Statement which had a typographical/printing error caused by copy and paste on all items (except Weed Rhap A-4D 5905-501 – we are also doing a warranty update on

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Letter from Helena Chemical Company to Sherada Hobgood – U. S. EPA December 19, 2002

that label). Per the PM's on this topic, as well as Linda, this type of correction, which would usually be just a non-notification is better done by a notification in this case, therefore:

I hereby certify that these notifications are consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

In support of this action, please find the following enclosed for each of the listed products:

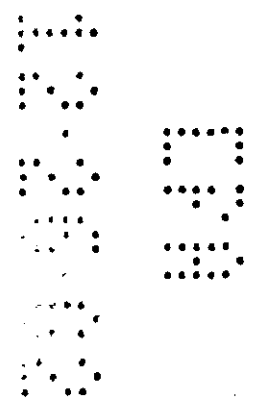
- 1. EPA Form 8570-1 – Application for Registration for Each
- 2. Two (2) Copies of Draft Amended Labeling for Each

If there are any questions about this submission, please contact me at 901-752-4421. Thank you for your attention to and assistance with this matter.

Sincerely,
HELENA CHEMICAL COMPANY



Emily Smathers Ratliff
Product Registration Supervisor



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WEED RHAP A-4D

2,4-D AMINE HERBICIDE

ACTIVE INGREDIENT:	BY WT.
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	46.7%
INERT INGREDIENTS:	53.3%
TOTAL	100.0%

Equivalent to 38.8% of 2,4-Dichlorophenoxyacetic acid or 3.8 lb/gal.
Isomer specific by AOAC Method 6.275, 13th Ed, 1980.

KEEP OUT OF REACH OF CHILDREN
DANGER PELIGRO

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

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling.

FIRST AID

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Have person sip a glass of water if able to swallow.
- Do not give anything to an unconscious person.

IF IN EYES:

- Hold eyelid 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 immediately for treatment advice.

IF ON SKIN OR CLOTHING:

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

IF INHALED:

- Move victim to fresh air.
- If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

SEE INSIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA REG. NO. 5905-501
EPA EST. NO.
U. S. Patent #5,877,112

NET CONTENTS:

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

NOTIFICATION
JAN 3 - 2003

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be re-used until it has been cleaned.

Engineering Controls Statements

If this container contains 5 gallons or more in capacity, do not open pour. A mechanical system (such as probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from target area. Spray equipment used in applying this product should be thoroughly cleaned before using for any other purpose. Use repeated flushing with soap and warm water or suitable chemical cleaner. It is best to use a separate sprayer for application of insecticides and fungicides. Do not contaminate water by cleaning of equipment or disposal of washwaters. This product will kill or seriously injure many desirable forms of vegetation. Do not apply directly to flowers, fruits, vegetables, grapes, ornamentals, cotton or other desirable plants. Do not use when there is hazard from drifting mists. (Coarse sprays are less likely to drift.) Avoid contamination of water used for domestic purposes and irrigation purposes. Excessive amounts of this product in the soil may temporarily inhibit seed germination and plant growth.

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water except as specified on this label. Do not contaminate water when disposing of equipment washwaters.

GROUNDWATER CONTAMINATION

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the

probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

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

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR, Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment areas until spray has dried.

CHEMIGATION PROHIBITION

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

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Protect from freezing. If stored below 32°F and crystals form, warm to 72°F for 24 hours, periodically rolling drum to reconstitute.

PESTICIDE DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate, is a violation of Federal Law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact

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your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Metal Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Plastic Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

RETURNABLE - REFILLABLE CONTAINER (Drum):

After use, return the container to the point of purchase or designated locations. This container must only be filled with **WEED RHAP A-4D. DO NOT RE-USE THIS CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. If the container is not being refilled, return to the point of purchase.

GENERAL INFORMATION

Performance of this product may be affected by local condition, crop varieties, and application method. User should consult local extension service, agricultural experiment, or university weed specialists, and state regulatory agencies for recommendations in your area.

Best results are obtained when product is applied to young succulent weeds that are actively growing. Application rates lower than recommended will be satisfactory on susceptible annual weeds. For perennial weeds and conditions such as the very dry areas of the western states, where control is difficult, the higher recommended rates should be used.

When product is used for weed control in crops, the growth stage of the crop must be considered.

Some plants and weeds, especially woody varieties, are difficult to control and may require repeat applications. Application rates should be 1 to 5 gallons of total spray by air or 5 to 25 gallons by ground equipment unless otherwise directed. In either case, use the same amount of 2,4-D recommended per acre. For crop uses, do not mix with oil, surfactants, or other adjuvants unless specifically recommended on label. To do so may reduce herbicides selectivity and could result in crop damage.

Aerial application should be used only when there is no danger of drift to susceptible crops. Many states have regulations concerning aerial application of 2,4-D formulations. Consult local regulatory authorities before making applications. This product contains the Dimethylamine salt of 2,4-D, one of the least volatile forms of 2,4-D.

Because coarse sprays are less likely to drift than fine, do not use equipment (such as hollow cone small orifice nozzles) or conditions (such as high pressure) that produce such sprays.

Product should not be allowed to come into contact with desirable, susceptible plants such as beans, cotton, fruit trees, grapes, legumes, ornamentals, peas, tomatoes, and other vegetables. Product should not be used in greenhouses. Excessive amounts of this product in the soil may temporarily inhibit seed germination and all plant growth.

Users should note that herbicide treatment of public water requires a permit from appropriate state agencies in most states. Your state Conservation Department, or Game and Fish Commission will aid you in securing a permit in your state.

If stored below freezing, it may be necessary to warm product to 70°F and agitate before using. This does not affect the efficiency of the product.

Spray equipment used to apply 2,4-D should not be used for any other purpose until thoroughly cleaned with a suitable chemical cleaner containing ammonia.

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Spray Preparation: Add the recommended amount of Weed Rhap A-4D to approximately one-half the volume of water to be used for spraying. Agitate well, then add the remainder of the water. Continue agitation during application until spray tank is empty.

Use in Liquid Nitrogen Fertilizer: Weed Rhap A-4D may be combined with liquid nitrogen fertilizer suitable for foliar application of corn, grass, pastures, or small grains in one operation. Use Weed Rhap A-4D according to directions on this label for those crops. Use liquid nitrogen fertilizer at rates recommended by supplier or extension service specialist. Mix the product and fertilizer according to the following instructions:

Fill the spray tank approximately $\frac{1}{2}$ full with the liquid nitrogen fertilizer. In a separate container, mix the amount of Weed Rhap A-4D to be used with an equal amount of water. Add Weed Rhap

A-4D mixture to the spray tank while agitating. Add the remainder of the fertilizer while continuing to agitate. Apply immediately, maintaining agitation during application until tank is empty. **DO NOT APPLY DURING COLD (NEAR FREEZING) WEATHER.** Spray mixture must be used immediately and may not be stored.

NOTE Pre-mixing the product with an equal amount of water is important.

WHERE TO USE

This product is used to control broadleaf weeds in cereal crops, corn, sorghum, weeds and brush in rangeland, pastures, rights-of-way, and similar noncrop uses, tree injection, and for aquatic weed control.

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**RECOMMENDED RATE OF
WEED RHAP A-4D PER ACRE**
By Air or Ground**

Crop	Normal Rates (usually safe to crop)	Higher rates for Special Situations* (more likely to injure crop)
Small Grains		
Spring Postemergent (not underseeded with legumes)		
wheat, barley, rye	2/3 to 1-1/3 pints	2 to 3 pints
oats	1/2 to 1 pint	1 1/2 to 2 pints
Spring Post emergent (underseeded with legumes)		
wheat, barley, oats, rye	1/4 to 1/2 pints	
Preharvest (dough stage)		
wheat, barley, oats	1 to 2 pints	2 to 3 pints
Corn (Field & Sweet)		
Preplant	1 to 2 pints	
Preemergent	2 to 4 pints	
Emergent	1 pint	1 1/2 pints
Postemergent-		
up to 8 inches tall	1/2 to 1 pint	
8 inches to tasseling (use only directed spray)	1 pint	1 1/2 to 2 1/2 pints
Preharvest	1 to 2 pints	
Sorghum		
Postemergent		
6 to 8 inches tall	2/3 to 1 pint	
8 to 15 inches tall (use only directed spray)	1 pint	1 1/2 to 2 pints
Rice		
	1 to 2 1/2 pints	2 to 3 pints
Sugarcane (Postemergent or Preemergent)		
	2 to 4 pints	

Note: The higher rates as recommended above may be necessary to control difficult weed problems, such as dry conditions in the Western States. They should not be used, however, unless possible crop injury is acceptable. User should consult local Extension Service or Agriculture Experiment Station Weed Specialist for recommendations on special conditions.

*Arizona, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming.

**If band treatment is used, base the dosage rate on the actual area sprayed.

WEEDS CONTROLLED

ALDERS	GUMWEED	SHEPHERDSPURSE
ALLIGATOR WEED	*GROUND IVY	SICKLEPOD
AMERICAN LOTUS	HEALALL	*SMARTWEEDS
ARROWHEAD	HEMP	SNEEZEWEED
ASTER	HENBIT	SOUTHERN WILD ROSE
ARTICHOKE	*HOARY CRESS	SOW THISTLE
AUSTRIAN FIELDCRESS	HORSETAIL	SPANISH NEEDLES
*BEGGARTICKS	HONEYSUCKLE	SPATTERDOCK
BIDEN	INDIGO	ST. JOHN SWORT
*BINDWEED	INDIAN MALLOW	STINGING NETTLES
BITTERSWEET	*IRONWEED	STINKWEED
BITTERWEED	JERUSALEM ARTICHOKE	SUMAC
BITTER WINTERCRESS	JEWELWEED	SUNFLOWER
BLACKEYED SUSAN	JIMSONWEED	SWEET CLOVER
BLESSED THISTLE	*KNOTWEED	TANWEED
BLUE LETTUCE		TARWEED
BOX ELDER	LAMBSQUARTERS	THISTLES
BROOMWEED	LOCOWEED	TOADFLAX
BUCKHORN	LUPINES	TUMBLEWEED
BULLTHISTLE	*MALLOW	VELVETLEAF
BULRUSH	MARIJUANA	VENICEMALLOW
BURDOCK	MARSHELDER	*VERVAINS
BUR RAGWEED	MEXICAN WEED	VETCHES
BUTTERCUP	MORNINGGLORY	VIRGINIA CREEPER
*CANADA THISTLE	***MUSKTHISTLE	WATER HYACINTH
CARPETWEED	MUSTARDS	WATER LILY
CATNIP	*NETTLES	WATER PLANTAIN
CHICKWEED	NUTGRASS	WATER PRIMROSE
CHICKORY	*ORANGE HAWKWEED	WATER SHIELD
CINQUEFOIL	PARROT FEATHER	WILD CARROT
COCKLE	PARSNIP	*WILD GARLIC
COCKLEBUR	PENNYCRESS	WILD LETTUCE
COFFEEBEAN	PENNYWORT	*WILD ONION
COFFEEWEED	PEPPERGRASS	WILD PARSNIP
CREEPING JENNY	PEPPERWEED	WILD RADISH
CROTON	**PIGWEEDS	WILD RAPE
CURLY INDIGO	PLANTAINS	WILD STRAWBERRY
DANDELION	POISON HEMLOCK	WILD SWEET POTATO
DEVIL'S CLAW	POISON IVY	WILLOW
*DOCKS	POKEWEED	WITCHWEED
*DOGBANE	POORJOE	WOODWORM
DUCKWEED	POVERTYWEED	WORMSEED
ELDERBERRY	PRICKLY LETTUCE	YELLOW ROCKET
FLEABANE	PRIMROSE	
FIXWEED	PUNCTURE VINE	
FLORIDA PUSLEY	PURSLANE	
FRENCHWEED	RADISH	
GALINSOGA	RAGWEED	
GOATSBEARD	RUSH	
*GOLDENROD	*RUSSIAN THISTLE	
GOOSEFOOT	SAGEBRUSH	
	SALSIFY	

*These species may require repeated applications and/or use of the higher rate recommended on this product label even under ideal conditions.

**Control of pigweeds in the High Plains area of Texas and Oklahoma may not be satisfactory with this product.

***Not registered for control of muskthistle in CA.

CROPS

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SMALL GRAINS NOT UNDERSEEDED WITH A LEGUME (BARLEY, OATS, WHEAT, RYE): See table for recommended use rates.

Spray when weeds are small after grain begins tillering but before boot stage (usually 4 to 8 inches tall). Do not apply before the tiller stage nor from early boot through milk stage. To control large weeds that will interfere with harvest or to suppress perennial weeds, preharvest treatment can be applied when the grain is in the dough stage. Best results will be obtained when soil moisture is adequate for plant growth and weeds are growing well.

Spring Planted Oats: Apply in sufficient water to give good coverage. Apply after the fully tillered stage, except during the boot to dough stage.

Fall Planted Oats: Apply after full tillering but before early boot stage. Some difficult weeds may require higher rates of 1 to 1 ½ pints per acre for maximum control, but injury may result. Do not spray during or immediately following cold weather.

Note: Oats are less tolerant to 2,4-D than wheat or barley and more likely to be injured. Do not forage or graze treated grain fields within 2 weeks after treatment with 2,4-D. Do not feed treated straw to livestock.

Spring Wheat and Durum: Weed Rhap A-4D may be used when the crop is in the three leaf stage but before the booting stage.

Emergency Weed Control in Wheat: For control of perennial broadleaf weeds, apply 3 pints per acre when weeds are approaching bud stage. Do not spray grain in the boot to dough stage. The 3 pint per acre application can produce injury to wheat. Balance the severity of your weed problem against the possibility of crop damage. Where perennial weeds are scattered, spot treatment is suggested to minimize the extent of crop injury. Use lower rate if small annual and biennial weeds are the major problem. Use the higher rate if perennial weeds or annual and biennial weeds are present which are in the hard-to-kill categories as determined by local experience. The higher rates increase the risk of grain injury and should be used only where the weed control problem justifies the grain damage risk. Do not apply to grain in the seedling stage. For aerial application, apply 1-5 gallons of water per acre; for ground application, use a minimum of 5 gallons of water per acre

CORN: See table for recommended use rates.

Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Do not use on light, sandy soil or where soil moisture is inadequate for normal weed growth. Use the higher rate for less susceptible weeds or cover crops such as alfalfa.

Preemergence: Apply Weed Rhap A-4D from 3 to 5 days after planting but before corn emerges. Do not use on very light, sandy soils. Use the higher rates on heavy soils. Plant corn as deep as practical.

Post Emergence: Best results are usually obtained when weeds are small and corn is 5 to 18 inches tall. When corn is over 8 inches tall, use drop nozzles. Do not apply from tasseling to dough stage. If corn is growing rapidly and temperature and soil moisture content is high, use ½ pint per acre rate to reduce possibility of crop damage. Delay cultivation for 8 to 10 days to prevent stalk breakage due to temporary brittleness caused by 2,4-D. Application rates of up to 1 pint/acre may be used to control some hard to control weeds. However, the possibility of injury to the corn is increased.

If corn is over 8 inches tall, use drop nozzles to keep spray off corn foliage as much as possible. Do not use with oil, atrazine, or other adjuvants. Since the tolerance to 2,4-D of individual hybrids varies, consult your local Extension Service, Agricultural Experiment Station, or University Weed Specialist for information.

Pre-Harvest: After the hard dough or denting stage, apply 1 to 2 pints of Weed Rhap A-4D per acre by air or ground equipment to suppress perennial weeds, decrease weed seed production, and control tall weeds such as bindweed, cocklebur, dogbane, jimsonweed, ragweed, sunflower, velvetleaf, and vines that interfere with harvesting. Do not forage or feed corn fodder to livestock for 7 days following application.

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SORGHUM (Milo): See table for recommended rate. Apply to sorghum when crop is 4 to 12 inches high with secondary roots well established. Use drop nozzles when crop is over 10 inches high. Do not apply from flowering to dough stage. Rates of up to 1 pint per acre may be used to control some hard to control weeds. However, the chance of crop injury is increased with the higher rates. Do not use with oil. Use lower rate if conditions of high temperature and high soil moisture exists.

Note: Corn & Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Spray only varieties known to be tolerant. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.

RICE: See table for recommended rate.

Apply in the late tillering stage of development, at the time of first joint development (first to second green ring), usually 6 to 9 weeks after emergence. Do not apply after panicle initiation, after rice internodes exceed $\frac{1}{2}$ inch, at early seedling, early panicle, boot, flowering, or early heading growth stages. **Note:** 2,4-D can injure some rice varieties. Before spraying, consult local Extension Service or University specialists for appropriate rates and timing of sprays.

SUGARCANE: See table for recommended rate.

Apply as a pre- or post-emergent spray in the spring after canes merge and through lay-by. Consult local Agricultural Experiment or Extension Service Weed Specialists on specific use of this product.

ORNAMENTAL TURF: Use 1 to 4 pints in enough water to give good coverage to one acre of weeds when weeds are young and actively growing. Perennial weeds should be near the bud stage, but not flowering at application. Do not use on susceptible Southern grasses such as St. Augustine. Do not apply to newly seeded areas until grass is well established. Bentgrass, clover, legumes, and dichondra may be injured by this treatment.

NOTES FOR ALL TURF SITES (excluding sod farms): The maximum number of broadcast applications per treatment site is 2 per year.

GRASSES IN CONSERVATION RESERVE PROGRAM AREAS: To control actively growing annual broadleaf weeds, use $\frac{1}{2}$ -1 pint per acre when weeds are small; use higher rate on older weeds. Excessive injury may result if applied to young grasses with fewer than 6 leaves or prior to grasses being well established. To control biennial and perennial broadleaf weeds in established grasses, apply to actively growing weeds at a rate of 2-4 pints per acre. Treat when biennial weeds are in the seedling to rosette stage and before flower stalks are apparent. Treat perennial weeds in the bud to bloom stage. **Note:** Use at least 2 gallons of water per acre by air and 5 gallons of water per acre by ground. Do not harvest or graze treated Conservation Reserve Program areas. Do not apply to grasses in the boot to dough stage if grass seed production is desired.

GRASS SEED CROPS: Apply 1 to 4 pints of Weed Rhap A-4D per acre in the Spring or Fall to control broadleaf weeds in grass being grown for seed. Do not apply from early boot to milk stage. Spray seedling grass only after the five leaf stage, using $\frac{3}{4}$ to 1 pint per acre to control small seedling weeds. After the grass is well established, higher rates of up to 4 pints per acre can be used to control hard-to-kill annual or perennial weeds. For best results, apply when soil moisture is adequate for good growth. Do not use on Bent unless injury can be tolerated. Keep dairy animals off treated areas for 7 days. Do not cut grass for hay for 30 days after treatment. Remove meat animals from treated areas 3 days prior to slaughter.

CROP STUBBLE AND FALLOW LAND: To control annual broadleaf weeds, apply 1-2 pints per acre. Use the lower rate when weeds are small (2-3" tall) and actively growing. Use the higher rate on older and drought-stressed plants. To control biennial broadleaf weeds, apply 2-4 pints per acre. Spray while musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks become apparent. The lower rate can be used in the spring during rosette stage. Use the highest rate in the fall or after flower stalks have developed. To control perennial broadleaf (including cotton

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regrowth) weeds such as Canada thistle and field bindweed, apply 2-6 pints per acre. Spray weeds in bud to bloom stage or while in good vegetative growth. Do not disturb treated areas for at least 2 weeks after treatment or until weed tops are dead. To control wild garlic and onion, apply 4-6 pints per acre to prevent regrowth in the fall following harvest. **Note:** Do not plant any crop for 3 months after treatment or until chemical has disappeared from the soil.

ESTABLISHED PASTURES AND RANGELANDS: Use 1 to 4 pints of Weed Rhap A-4D in sufficient water to give good coverage to one acre. Use the light rate on more easily injured grasses. For small areas, use 3/4-1 fluid ounce (1 1/2-2 tablespoons) per 1,000 square feet; mix 1-3 gallons of water and apply uniformly over the area. Preferably apply when weeds are small and actively growing before bud stage. Fall or spring is the best time to treat. Repeated treatments may be needed for less susceptible weeds. Treatment will kill or injure alfalfa, sweet clover and other legumes. White clover (including Ladino) may be injured by light application, but recovers; repeated applications will kill it. Some dichondra, bentgrass, carpet, buffalo, and St. Augustine grasses may be injured. Usually colonial bents are more tolerant than creeping types; velvets are most easily injured. Where bentgrass predominates, make 2 applications of 1 pint per acre at 3 week intervals. Keep dairy animals off treated areas for 7 days. Do not cut grass for hay for 30 days after treatment. Remove meat animals from treated areas 3 days prior to slaughter.

CONTROL OF SOUTHERN WILD ROSE: On rangelands, roadsides, and fencerows, use 1 gallon of product plus 4-8 fluid ounces of an agricultural surfactant per 100 gallons of water and spray thoroughly as soon as foliage is well developed. Two or more treatments may be required. On rangeland, apply a maximum of 4.2 pints of product per acre per application. Do not graze dairy animals on treated areas within 7 days of application.

GENERAL WEED CONTROL: (Airfields, roadsides, vacant lots, drainage ditch banks, fence rows, industrial sites and similar areas): Use 1 to 3 quarts of Weed Rhap A-4D per acre. Usually 2 quarts per acre will give adequate control. Do not use on herbaceous ground covers or creeping grass such as Bent. Legumes will usually be damaged or killed. Deep-rooted perennials may require repeat applications. Do not use on freshly seeded turf until grass is well established. Delay reseeding for 3 months or until 2,4-D has disappeared from soil.

SPOT TREATMENT IN NON-CROP AREAS: To control broadleaf weeds in a small area with a handsprayer, use 1/2 pint of product in 3 gallons of water and spray to thoroughly wet all foliage.

RIGHTS-OF-WAY: Apply up to 2 gallons of product per acre for the control of perennial broadleaf weeds and susceptible woody species. For less susceptible perennial broadleaf weeds and difficult to control woody species, use a combination of 2 gallons of product plus 1-4 quarts of Garlon®3A herbicide per acre. For ground application, apply in 20-400 gallons of water, depending on the height of the weeds and brush. Use the higher volumes of up to 400 gallons per acre for dense brush 6 feet tall or higher. For aerial application, use 10-30 gallons per acre total spray volume. Garlon® is a registered trademark of DowElanco.

APPLES, PEARS, STONE FRUIT AND NUT ORCHARDS (DO NOT USE IN CA): To control annual broadleaf weeds on the orchard floor, apply 3 pints per acre using coarse sprays and low pressure in sufficient volume of water to obtain thorough wetting of weeds. Treat when weeds are small and actively growing. Do not use on light, sandy soil.

Note: Do not apply to bare ground as injury may result. Do not apply immediately before irrigation and withhold irrigation for 2 days before and for 3 days after treatment. Do not allow spray to drift onto or contact foliage, fruit, stems, trunks of trees or exposed roots since injury may result. Do not apply to newly established or young orchards; trees must be at least 1 year old and in vigorous condition. Do not apply during bloom. Do not graze or feed cover crops from treated orchards. Do not make more than 2 applications per year. Do not harvest stone fruit within 40 days and nuts within 60 days of application.

WOODY PLANT CONTROL: To control woody plants susceptible to 2,4-D, such as alder, buckbrush, elderberry, sumac, and willow on non-crop areas, use 2 to 3 quarts of Weed Rhap A-4D per acre in 100 gallons of water. Wet all parts of the plants thoroughly, including stem and foliage, to the point of run off. Higher volumes of up to 400 gallons per acre are necessary where the brush is very dense and over 6 to 8 feet high. Applications are more effective when made on actively

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growing plants. Treatment should not be made during time of severe drought or in early Fall when leaves lose their green color. Hard to control species may require re-treatment next season.

TREE INJECTION: For the control of unwanted hardwoods such as elm, oak, hickory, and sweetgum in forest and other non-crop areas, apply undiluted Weed Rhap A-4D by injecting 1 ml through the bark, using one injection per inch of trunk diameter measured at breast height (4 ½ feet). For harder to control species (ash, maple, dogwood), use 2 ml of undiluted Weed Rhap A-4D per injection. All injections should be as near the root collar as possible and should be evenly spaced around the trunk. Injections may be made at any time of the year but are most effective during the growing season. Maples should not be treated during the spring sap rise. For dilute injections, mix 1 gallon of product in 19 gallons of water.

Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

WEED AND BRUSH ON IRRIGATION CANAL DITCHBANKS - *Seventeen Western States:*

Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming.

For control of annual and perennial broadleaf weeds, apply 1 to 2 quarts of Weed Rhap A-4D per acre in approximately 20 to 100 gallons of total spray. Treat when weeds are young and actively growing before the bud or early bloom stage. For harder to control weeds, a repeat spray may be needed after 3 to 4 weeks for maximum results, using the same rates.

Apply no more than 2 treatments per season. For woody brush and patches of perennial broadleaf weeds, mix one gallon of Weed Rhap A-4D in 150 gallons of water. Wet foliage thoroughly, using approximately 1 gallon of spray solution per square rod.

Spraying Instructions: Low pressure (10 to 40 psi) power spray equipment should be used and mounted on a truck, tractor, or boat. Apply while traveling upstream to avoid accidental concentration of chemical into water. Spray when the air is calm, 5 mph or less. Do not use on small canals (less than 10 CFS) where water will be used for drinking purposes.

Boom spraying onto water surface must be held to a minimum and no cross-stream spraying to opposite banks should be permitted. When spraying shoreline weeds, allow no more than 2-foot overspray onto water with an average of less than one-foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Do not allow dairy animals to graze on treated areas for at least 7 days after spraying. Water within treated banks should not be fished.

AQUATIC WEED CONTROL

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Fish breathe oxygen in the water and a water/oxygen ratio must be maintained. Decaying weeds use up oxygen. To avoid fish kill from decaying plant material, do not treat more than one half the lake or pond at one time. For large bodies of weed infested waters, leave buffer strips of at least 100 feet wide and delay treatment of these strips for 4 to 5 weeks or until the dead vegetation has decomposed.

Ground or Surface Application: Do not apply when wind speeds are at or above 10 mph.

Air Application: Do not apply when wind speeds are at or above 5 mph. The restrictions do not apply to subsurface applications used in weed control programs.

Delay the use of treated waters for irrigation for three weeks after treatment unless an approved assay shows that the water does not contain more than 0.1 ppm 2,4-D acid. Do not treat irrigation ditches in areas where water will be used to overhead sprinkler irrigate susceptible crops especially grapes, tomatoes and cotton.

Delay the use of treated water for domestic purposes for a period of three weeks or until such time as an approved assay shows that the water contains no more than 0.1 ppm 2,4-D acid.

FOR AQUATIC WEEDS IN LAKES, PONDS, RESERVOIRS, MARSHES, BAYOUS, DRAINAGE DITCHES, CANALS, AND RIVERS AND STREAMS THAT ARE QUIESCENT OR SLOW MOVING: Use 2 ½ to 4 ½ pints of Weed Rhap A-4D in 50 to 100 gallons of water per acre. Spray to wet foliage thoroughly. Application should be made when leaves are fully developed above water line and plants are actively growing. Your State Conservation Department or Game and Fish Commission will assist you in determining the best time and rate for application under local conditions. Perennial and other hard to control weeds may require a repeat application to give adequate control.

WATER HYACINTH (*Eichornia crassipe*): For control of actively growing plants with surface and air applications, use 4 to 8 pints per acre. **Spray the weed mass only.** Use 8 pints when plants are matured or when the weed mass is dense. Repeat as necessary to kill regrowth and hyacinth plants missed in the previous application.

Surface Application: Use power sprayers operated with a boom or spray gun mounted on a boat, tractor, or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gal/A of spray mixture. Special precautions such as the use of low pressure, large nozzles and thickening agents should be taken to avoid spray drift in areas of sensitive crops. For DIRECTASPRA™ operation, use with 1 pint of drift control agent in 50 to 100 gallons of water. For other applications, follow the drift control agent label for mixing directions. **Air Application:** Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 1.0 gallon per acre through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems, apply in 12 to 15 gallons spray mix per acre.

WATER MILFOIL (*Myriophyllum spicatum*): For Eurasian Water Milfoil in programs conducted by the Tennessee Valley Authority in dams and reservoirs of the TVA system, Weed Rhap A-4D will control Water Milfoil with surface, subsurface and air applications.

To control water milfoil when less than 5 gallons of concentrate per acre is recommended, dilute the concentrate with water to apply a minimum of 5 gallons of spray mix per acre. Do not treat within ½ mile of potable water intakes. Shoreline areas should be treated by sub-surface injection applied by boat to avoid aerial drift. Do not apply when weather conditions favor drift from target area.

Open Water Areas: To reduce contamination and prevent undue exposure to fish and other aquatic organisms, do not treat water areas that are not infested with aquatic weeds. Apply 2.5 to 10 gallons per acre. The higher rate is used in areas of greater water exchange. These areas may require a repeat application. For best results, apply in spring or early summer when milfoil starts to grow. The timing can be checked by sampling the lake bottom in areas heavily infested with weeds the year before.

Subsurface Application: Apply 2.5 to 10 gallons per acre as a concentrate directly into the water through boat mounted distribution systems.

Surface Application: Apply 2.5 to 10 gallons per acre in a minimum spray volume of 5 gallons mix per acre.

Air Application: Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 2.5 to 10 gallons per acre through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems, apply in 12 to 15 gallons spray mix per acre.

**CONDITIONS OF SALE - LIMITED WARRANTY
AND LIMITATIONS OF LIABILITY AND REMEDIES**

Read the Conditions of Sale - Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

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The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

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