

84930-17

10-27-2010

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:

84930-17

Date of Issuance:

OCT 27 2010

NOTICE OF PESTICIDE:

X Registration
Reregistration
(under FIFRA, as amended)

Term of Issuance: Unconditional

Name of Pesticide Product:

ARC CHLORMET Herbicide

Name and Address of Registrant (include ZIP Code):

Arcana LLC c/o Lighthouse Product Services
P.O. Box 26 3937 Cedarwood Lane
Timnath, CO 80547 Johnstown, CO 80534

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 unconditionally registered in accordance with FIFRA provided that you:

- 1. Submit and/or cite all data required for registration review/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Make the following label changes:
a. Change the EPA Reg. No. to "84930-17".
b. Add a "Net Contents" section to the label.
c. Under SPRING WHEAT, correct the typo in the heading to "Postemergence".
d. Under Rotational Intervals for Non Cereal Crops in Wyoming, Field corn, Millets, correct the typo from "02/10 to 4/10" to "2/10 to 4/10".
e. Under SPRAY DRIFT MANAGEMENT, remove the phrase "(>150-200 microns)" as it is an improper description of large droplet size according to the ASABE S572.1 standard.
f. Under Application Height, correct the typo from "10ft" to "10 ft above the crop canopy".

Continued on Page 2

Signature of Approving Official:

Handwritten signature of Jim Tompkins

Jim Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505P)

Date:

OCT 27 2010

- g. Under INTEGRATED PEST MANAGEMENT, correct both instances of the acronym from "IPM" to "**IPM**".
- h. Change the heading from "PRECAUTIONS" to "**RESTRICTIONS AND PRECAUTIONS**".
- i. Make the following changes to the WARRANTY AND LIABILITY section:
  - i. "The Directions for Use of this product **must** be followed carefully."
  - ii. "**To the extent consistent with applicable law**, all such risks shall be assumed by Buyer and User...for any claims relating to such factors."
  - iii. "**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW**, ARCANA LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS..."
  - iv. "**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW**, THE EXCLUSIVE REMEDY OF THE USER OR BUYER...THE REPLACEMENT OF THE PRODUCT."

The basic confidential statement of formula (CSF) dated August 12, 2010 is acceptable.

A stamped copy of the label is enclosed for your records. Submit one (1) copy of the revised final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this notice or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Enclosure

# ARC CHLORMET Herbicide

For Use on Wheat, Barley, and Fallow  
Dry Flowable

**ACTIVE INGREDIENTS:**

Chlorosulfuron: 2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl] benzenesulfonamide.....	62.5%
Metsulfuron-methyl: Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sufonyl]benzoate .....	12.5%
Other Ingredients: .....	25.0%
Total: .....	100.0%

EPA Reg. No. 84930-XXXXX

EPA EST NO.:

**KEEP OUT OF REACH OF CHILDREN  
CAUTION CAUCION**

*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 A MEDICAL EMERGENCY INVOLVING THIS PRODUCT, CALL TOLL FREE,  
DAY OR NIGHT, 1-866-303-6950**

Read the entire label before using this product.

Use only according to label instructions.

Read the WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF  
REMEDIES before buying or using.

If terms are not acceptable, return product unopened without delay.

**SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND USE DIRECTIONS**

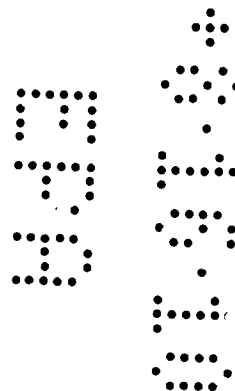
Manufactured for:  
ARCANA LLC  
P.O. Box 26  
Timnath, CO 80547

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

OCT 27 2010

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

84930-17



### ARC CHLORMET HIGHLIGHTS

- For preplant/preemergence weed control in winter and spring wheat (except durum wheat and Wampum variety of spring wheat).
- For postemergence broadleaf weed control in both winter and spring wheat and barley.
- For land primarily dedicated to long-term production of wheat or barley (see CROP ROTATION section for information).
- Preplant, preemergence, or postemergence : Use 2/10 to 5/10 oz per acre depending on growing area, application method, and weeds to be controlled.
- Apply postemergence to wheat and barley any time after the crop is in the 1-leaf stage, but before boot stage.
- No grazing restrictions.
- May be applied by ground or by air.
- Use in tank mixtures with other registered herbicides for broader spectrum weed control (see TANK MIXTURES).
- For fallow, use in combinations with other herbicides. Apply in the spring or fall when the majority of weeds have emerged and are actively growing.
- Consult label text for complete instructions. Always read and follow label DIRECTIONS FOR USE.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes or clothing. Avoid contact with skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

**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 resistance category selection chart.

**Applicators and other handlers must wear:** Long-sleeved shirt and long pants, Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all 14 mils. Shoes plus socks

Follow manufacturers instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### FIRST AID

<b>IF IN EYES:</b>	-Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. -Call a poison control center or doctor for treatment advice.
<b>IF ON SKIN OR CLOTHING:</b>	-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.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency call toll free 1-866-303-6950.	

#### User Safety Recommendations

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

#### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas

below the mean high water mark. Do not contaminate water 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.**

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

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: • Coveralls • Chemical Resistant Gloves Category A, (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all 14 mils • Shoes plus socks

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store product in original container only.

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

**CONTAINER HANDLING:** For container sizes up to 5 lbs. Nonrefillable container. Do not reuse or refill container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

**NOTICE TO BUYER:** Purchase of this material does not confer any rights under patents of countries outside of the United States.

ARC CHLORMET must be used only in accordance with the directions on this label or in separate published ARCANA directions.

ARCANA will not be responsible for losses or damages resulting from the use of this product in any manner not specifically directed by ARCANA.

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

**PRODUCT INFORMATION**

**ARC CHLORMET herbicide** is for use on land primarily dedicated to the long-term production of wheat and barley.

ARC CHLORMET is a dry-flowable granule that controls weeds in wheat (including **durum**), barley and fallow.

ARC CHLORMET is for use in all states it is registered (except in Alamosa, Conejos, Costilla, Rio Grande, and Saguache counties of Colorado - unless directed otherwise by supplemental labeling).

ARC CHLORMET is mixed in water or may be slurried in water then added directly into liquid nitrogen fertilizer solutions and applied as a uniform broadcast spray. A surfactant should be used in the spray mix unless otherwise specified on this label. ARC CHLORMET is noncorrosive, nonflammable, nonvolatile, and does not freeze.

ARC CHLORMET controls weeds by both preemergence and postemergence activity. For best preemergence results, apply ARC CHLORMET before weed seeds germinate. Use sprinkler irrigation or allow rainfall to move ARC CHLORMET 2 to 3 inches deep into the soil profile.

For best postemergence results, apply ARC CHLORMET to young, actively growing weeds. The use rate depends upon the weed spectrum and size of weeds at the time of application. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment

#### **Environmental Conditions and Biological Activity**

ARC CHLORMET is absorbed through the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. For preplant and preemergence weed control, rainfall is needed to move ARC CHLORMET into the soil. Weeds will generally not emerge from preplant and preemergence applications. In some cases, susceptible weeds may germinate and emerge a few days after application, but growth then ceases and leaves become chlorotic three to five days after emergence. Death of leaf tissue and growing point will follow in some species, while others will remain green but stunted and noncompetitive.

One to three weeks after postemergence application to weeds, leaves of susceptible plants appear chlorotic, and the growing point subsequently dies. In *warm*, moist conditions, the expression of herbicide symptoms is accelerated; in cold, dry conditions, expression of herbicide

symptoms is delayed. Death of leaf tissue will follow in some species, while others will remain green but stunted and noncompetitive. Postemergence weed control may be reduced if rainfall occurs within 6 hours after application.

ARC CHLORMET provides the best control of weeds in vigorously growing crops that shade competitive weeds. Weed control in areas of thin crop stand or seeding skips may not provide satisfactory control. However, a crop canopy that is too dense at application can intercept spray and reduce weed control.

The herbicidal action of ARC CHLORMET may be less effective on weeds stressed from adverse environmental conditions (such as extreme temperatures or moisture, drought stress), abnormal soil conditions, or cultural practices that increase weed stress. In these cases, tank mix ARC CHLORMET with other registered herbicides (such as 2,4-D or MCPA) to aid in control.

#### **USE RATES AND APPLICATION TIMING**

##### **WHEAT AND BARLEY**

###### **Preplant and Preemergence**

Preplant/Preemergence applications are for winter and spring wheat only. ARC CHLORMET can be tank mixed with other products registered for preplant/preemergence use in wheat (such as CZAR™ or "Roundup").

Crop injury may result if ARC CHLORMET is used where an organophosphate insecticide (such as "Di-Syston") has been applied or is intended for use as an in-furrow treatment.

##### **WINTER WHEAT**

Preplant: ARC CHLORMET may be applied at 2/10 to 4/10 oz per acre (before winter wheat is planted).

Preemergence: ARC CHLORMET may be applied at 2/10 to 5/10 oz per acre (after planting but before winter wheat emerges).

- In WY, MT, ND, SD, and MN, do not exceed 3/10 oz per acre preemergence.
- The 5/10 oz per acre rate applied preemergence is only for suppressing bromus species (cheat, downy brome, Japanese brome), and annual ryegrass.

**SPRING WHEAT**

ARC CHLORMET may be applied preplant or preemergence at 2/10 to 4/10 oz per acre in spring wheat (except Durum wheat and Wampum variety of Spring Wheat).

- In WY, MT, ND, SD, and MN, do not exceed 3/10 oz per acre preplant or preemergence.

Durum Wheat and Wampum Variety of Spring Wheat - Make applications of ARC

CHLORMET postemergence only.

Do not apply preemergence to late fall plantings when cold and/or dry weather can cause delayed seedling emergence and/or stress to seedling plants. Under these conditions, wait until crop has emerged and is showing good vigor before making a postemergence treatment. Crop injury may result when preemergence applications of ARC CHLORMET are made to wheat seeded less than 1 inch deep.

**Postemergence**

ARC CHLORMET can be tank mixed with other products registered for postemergence use in wheat and barley.

ARC CHLORMET should not be used within 60 days of crop emergence if an organophosphate insecticide (such as "Di- Syston") was used as an in-furrow treatment, or crop injury may result. Use 2/10 to 4/10 oz per acre.

PostemerQence: Apply ARC CHLORMET to wheat or barley any time after the crop is in the 1-leaf stage, but before boot stage.

In areas where late fall or winter cold weather conditions are unpredictable and can be severe (such as the Pacific Northwest and Northern plains), to avoid crop injury due to cold weather, do not make applications during the 1 to 4-leaf stage of wheat or barley. The combined effects of herbicide stress plus cold weather stress can result in greater crop injury than either stress factor alone.

Do not apply ARC CHLORMET during the boot stage or early heading stage, as crop injury may result.

**FALLOW**

ARC CHLORMET may be used as a fallow treatment, and may be tank mixed with other herbicides that are registered for use in fallow. Apply ARC CHLORMET at 2/10 - 4/10 oz per acre in the spring or fall when the majority of weeds have emerged and are actively growing. Read and follow all manufacturer's label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with ARC CHLORMET.

**WEEDS CONTROLLED—ARC CHLORMET Use Rates**

ARC CHLORMET effectively controls the following weeds when applied at the rates shown:

**2/10 to 3/10 oz per acre**

Blue mustard	Broadleaf dock	Bur beakchervil	Bur buttercup (testiculate)
Carolina geranium	Chickweed (common, jagged, mouseear)	Conical catchfly	
Corn spurry	Cow cockle	Curly dock	Cutleaf eveningprimrose
False chamomile	Field pennycress	Flixweed*†	Groundsel
Hempnettle	Henbit	Lady's thumb	Lambsquarters
Mayweed chamomile	Miners lettuce	Pineappleweed	Prickly lettuce ††
Prostrate pigweed	Plains coreopsis	Purslane	Redstem filaree
Redroot pigweed	Shepherd's purse	Smallseed falseflax	Smooth pigweed

Tansymustard*†	Treacle mustard (Bushy wallflower)	Tumble mustard (Jim Hill)
Virginia pepperweed	White cockle	Wild mustard
		Wild carrot

**3/10 to 4/10 oz per acre**

Annual bluegrass*†	Annual ryegrass*†	Annual sowthistle	Bedstraw*†
Bromus species (cheat, downy brome, Japanese brome) *†			Canada thistle*†
Coast fiddleneck (tarweed)		Corn gromwell*†	Dove foot geranium
Green foxtail (pigeongrass)*		Knotweed (prostrate)*†	
Kochia*†‡	Pennsylvania smartweed*		Prickly poppy (pinnate)
Russian thistle*†	Speedwell (common, ivyleaf)*		Sunflower†
Vetch†	Wild buckwheat†	Wild radish†	

**5/10 oz per acre**

Bromus species (cheat, downy brome, Japanese brome)\* †  
 Annual ryegrass\*†

\* When used as directed, weeds are suppressed and/or controlled. Weed suppression is a visible reduction in weed competition (reduced population and/or vigor) as compared to an untreated area. Degree of suppression will vary with rate used, size of weeds, and environmental conditions following treatment.

† See the Specific Weed Problems section for more information regarding controlling and suppressing these weeds.

‡ Naturally occurring resistant biotypes of kochia, prickly lettuce and Russian thistle are known to occur. See the Tank Mixtures and Specific Weed Problems sections of this label for additional details.

**APPLICATION INFORMATION**

**PRODUCT MEASUREMENT**

ARC CHLORMET is measured using the ARC CHLORMET volumetric measuring cylinder. The degree of accuracy of this cylinder varies by ± 7.5%. For more precise measurement, use scales calibrated in ounces.

**PESTICIDE HANDLING**

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Ensure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid overfilling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

**MIXING INSTRUCTIONS**

1. Fill the tank 1/4 to 1/3 full of water (If using liquid nitrogen fertilizer solution in place of water, see TANK MIXTURES sections for additional details).
2. While agitating, add the required amount of ARC CHLORMET.
3. Continue agitation until the ARC CHLORMET is fully dispersed, at least 5 minutes.
4. Once the ARC CHLORMET is fully dispersed, maintain agitation and continue filling tank with



water. ARC CHLORMET should be thoroughly mixed with water before adding any other material.

5. As the tank is filling, add tank mix partners (if desired) then add the necessary volume of nonionic surfactant. Always add surfactant last.

6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.

7. Apply ARC CHLORMET spray mixture within 24 hours of mixing to avoid product degradation.

8. If ARC CHLORMET and a tank mix partner are to be applied in multiple loads, pre-slurry the ARC CHLORMET in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the ARC CHLORMET.

Do not use ARC CHLORMET with spray additives that reduce the pH of the spray solution to below 3.0.

### GROUND APPLICATION

To obtain optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.:

When using flat-fan nozzles, use a spray volume of at least 3 GPA. When using flood nozzles on 30" spacings, use at least 10 GPA, flood nozzles no larger than TK10 (or the equivalent), and a pressure of at least 30 psi. For 40" nozzle spacings, use at least 13 CPA; for 60" spacings, use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.

With "Raindrop" RA nozzles, do not use less than 20 GPA and overlap nozzles 100%.

Use screens that are 50-mesh or larger.

### AERIAL APPLICATION

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage at 1 to 5 GPA. Use at least 3 GPA in Idaho, Oregon and Washington.

When applying ARC CHLORMET by air in areas near sensitive crops, use solid-stream nozzles oriented straight back. Adjust swath to avoid spray drift damage to downwind sensitive crops and/or use ground equipment to treat border edge of field. See the Spray Drift Management section of this label.

### SURFACTANTS

Unless otherwise specified, add a nonionic surfactant having at least 80% active ingredient at 0.125 to 0.5% v/v (0.5 to 2 qt per 100 gal of spray solution).

The higher rate of surfactant is particularly effective with spray volumes of 5 gallons per acre (GPA) or less and when using low rates of ARC CHLORMET. Consult your agricultural dealer, applicator, or ARCANA representative for a listing of useable surfactants. Antifoaming agents may be used if needed.

**Do not use low rates of liquid nitrogen fertilizer solution as a substitute for surfactant.**

### TANK MIXTURES

ARC CHLORMET may be tank mixed with other registered herbicides for use on wheat, barley, and fallow to control weeds listed as suppressed, weeds resistant to ARC CHLORMET or weeds not listed under Weeds Controlled. Read and follow all manufacturer's label directions for the companion herbicide. If those directions conflict with this label, do not tank mix the herbicide with ARC CHLORMET.

ARC CHLORMET can also be mixed with registered fungicides, insecticides, or liquid fertilizer for use on wheat or barley.

Since tank-mix partners can interfere with ARC CHLORMET dispersion in the spray solution, make an ARC CHLORMET slurry in a separate container before adding it to the tank mix. ARC CHLORMET must be in suspension in the spray tank before adding companion products.

### **With Other Herbicides**

For postemergence applications to broadleaf weeds, ARC CHLORMET may be tank mixed or used sequentially with one or more registered broadleaf or grass herbicides, such as:

2,4-D (amine or ester) 1/4 to 1/2 lb active ingredient per acre

MCPA (amine or ester) 1/4 to 1/2 lb active ingredient per acre

Bromoxynil: such as

“Buctril” 4EC 1/4 to 1 pt per acre;

“Bronate” 1/2 to 2 pt per acre;

“Curtail” & “Curtail” M 1 to 2 pt per acre

Metribuzin: such as

“Sencor” DF 1.5 to 8 oz active per acre

Dicamba: such as

“Banvel” 1/8 to 1/4 pt per acre;

“Banvel” SGF\* 1/4 to 1/2 pt per acre;

“Clarity” 1/8 to 1/4 pt per acre

Diuron: such as

“Karmex” DF or “Direx” 80DF 1 to 1 1/2 lb per acre;

“Direx” 4L 0.8 to 1.2 qt per acre

\* Tank mixes with Dicamba (such as “Banvel”, “Banvel” SGF and “Clarity”) may result in reduced weed control of some broadleaf weeds.

When tank mixing ARC CHLORMET and “Assert”, ALWAYS include another broadleaf herbicide with a different mode of action (such as: 2,4-D ester, or MCPA ester). Follow the surfactant directions on the companion herbicide label. Tank-mix applications of ARC CHLORMET plus “Assert” may cause temporary crop discoloration/stunting or injury when heavy rainfall occurs shortly after application.

Tank mixtures with “Hoelon” 3EC may result in reduced wild oat control.

See directions for several of these tank mixtures given below and in the Specific Weed Problems section of this label.

### **With 2,4-D (amine or ester) or MCPA (amine or ester)**

ARC CHLORMET can be used as a tank-mix treatment with 2,4-D or MCPA (ester formulations provide best results) herbicides after weeds have emerged. For best results, use 2/10 to 4/10 oz of ARC CHLORMET per acre; add 2,4-D or MCPA herbicides to the tank at 1/4 to 1/2 lb active ingredient. Surfactant may be added to the mixture at 1/2 to 1 qt per 100 gal of spray solution; however, adding surfactant may increase the potential for crop injury. Do not add a surfactant when ARC CHLORMET plus 2,4-D or MCPA is applied with liquid fertilizer.

Apply ARC CHLORMET plus MCPA after the 3 to 5-leaf stage but before boot stage. Apply ARC CHLORMET plus 2,4-D after tillering but before boot stage (refer to the appropriate 2,4-D manufacturer’s label). Applying a tank mixture of ARC CHLORMET, 2,4-D, or MCPA and liquid fertilizer when temperatures are below freezing or when the crop is stressed from cold weather just prior to winter dormancy can result in foliar burn and/or crop injury.

### **With Diuron (such as “Karmex” DF or Diuron DF)**

In areas where annual bluegrass, annual ryegrass, corn growwell, green foxtail (pigeongrass) and wild buckwheat are the main weed problems, apply 1 to 1 1/2 lb per acre of "Karmex" DF or Diuron DF plus 3/10 to 4/10 oz per acre ARC CHLORMET preemergence. For best results between 1/2" and 1 inch of rainfall is needed within 1 to 2 weeks after application. Follow all restrictions on the diuron labels.

### **With Insecticides**

ARC CHLORMET may be tank mixed with insecticides registered for use on wheat, barley, and fallow. However, under certain conditions (drought or cold stress while crop is in the 2- to 4-leaf stage), tank mixtures or sequential treatments of ARC CHLORMET and organophosphate insecticides (such as methyl parathion or "Di-Syston") may produce temporary crop yellowing or, in severe cases, crop injury. The potential for crop injury is greatest when there are wide fluctuations in day/night temperatures just prior to or soon after treatment. Read and follow directions on companion product labels and limit first use to a small area. If no symptoms of crop injury appear, larger acreage can be treated.

Do not apply ARC CHLORMET within 60 days of crop emergence where an organophosphate insecticide (such as "Di-Syston") has been applied as an in-furrow treatment, as crop injury may result.

**Do not use ARC CHLORMET plus malathion, as crop injury may result.**

In the Pacific Northwest, do not use ARC CHLORMET with NUFOS or "Lorsban", as crop injury may result.

### **With Fungicides**

ARC CHLORMET may be tank mixed with BENLATE® fungicide or "Manzate" 200DF fungicide or other fungicides whenever the proper timing for herbicide and fungicide treatments coincide.

### **With Liquid Nitrogen Fertilizer Solution**

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing ARC CHLORMET in fertilizer solution. If 2,4-D or MCPA is included with ARC CHLORMET and fertilizer mixture, ester formulations tend to be more compatible (See manufacturer's label).

Do not add surfactant when using ARC CHLORMET in tank mix with 2,4-D ester or MCPA ester and liquid nitrogen fertilizer solutions.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

Do not use low rates of liquid fertilizer solution as a substitute for surfactant.

If using low rates of liquid nitrogen fertilizer in the spray solution (less than 50% of the spray solution volume), the addition of surfactant is necessary. When using high rates of liquid nitrogen fertilizer in the spray solution, adding surfactant increases the risk of crop injury. Consult local guidance for details on surfactant addition.

**SPECIFIC WEED PROBLEMS**

**Annual bluegrass/annual ryegrass**

**ARC CHLORMET Preemergence**

Apply ARC CHLORMET at 5/10 oz per acre preemergence after planting winter wheat but before wheat emerges.

OR

Apply ARC CHLORMET at 5/10 oz per acre preemergence after planting winter wheat but before wheat emerges followed by a sequential application of metribuzin (such as "Sencor" DF) at 2.25 to 4.5 oz active per acre in the fall once the wheat has reached the 4 to 5-leaf stage of growth and the annual grass weeds are in the 1 to 3-leaf stage of growth.

OR

For improved control in the Pacific Northwest, apply a tank mix of ARC CHLORMET at 3/10 to 4/10 oz per acre plus "Karmex" DF or Diuron DF at 1 1/2 lb per acre preemergence to bluegrass or ryegrass. One-half to 1 inch of rainfall is needed to move the herbicides into the weed root zone prior to bluegrass or ryegrass emergence.

**ARC CHLORMET Postemergence**

Apply a tank mix of ARC CHLORMET at 2/10 to 4/10oz per acre and metribuzin (such as "Sencor" DF) at 2.25 to 3 oz active per acre postemergence to the crop and grass weeds when wheat has reached the 4 to 5-leaf stage of growth and the grass weeds have reached the 1 to 3-leaf stage of growth.

Note : See Bromus species (cheat, downy brome, Japanese brome) section for additional information on the use of metribuzin (such as "Sencor" DF).

**Bedstraw**

Apply ARC CHLORMET at 4/10 oz per acre. For postemergence treatments, apply before bedstraw is over 2 inches long; use 2 qt of surfactant per 100 gal of spray solution.

**Bromus species (cheat, downy brome, Japanese brome)**

Best suppression of these grasses is achieved by applications of ARC CHLORMET with metribuzin (such as "Sencor" DF) either in tank mixtures or as sequential treatments. Additional information may be available in a metribuzin supplemental label for winter wheat, barley, and fallow.

Allow for adequate rainfall (1/2 to 1 inch) to move ARC CHLORMET and metribuzin (such as "Sencor" DF) into the weed root zone before weeds germinate and develop an established root system. Lack of adequate rainfall following application will result in reduced performance. To avoid the risk of cold weather-related crop injury and lack of performance, apply metribuzin (such as "Sencor" DF) before winter dormancy of the crop and grass weeds. Excessive rainfall immediately after application may result in crop injury. Do not tank mix ARC CHLORMET plus metribuzin with any other pesticide other than surfactants specified on either the ARC CHLORMET or metribuzin labels. Apply only to metribuzin-approved varieties, see label for listing of sensitive wheat and barley varieties.

**Preemergence/Sequential Applications**

Apply ARC CHLORMET at 5/10 oz per acre preemergence after planting winter wheat but before wheat emerges. A sequential application of metribuzin (such as "Sencor" DF) may be applied at 2.25 to 3 oz active per acre in the fall once the wheat has reached the 4 to 5-leaf stage of growth and the annual grass weeds are in the 1 to 3-leaf stage of growth.

**Idaho, Oregon, and Washington** - Apply ARC CHLORMET at 4/10 to 5/10 oz per acre after planting winter wheat but before wheat emerges.

If suppression of brome grass is not satisfactory following the preemergence application of ARC CHLORMET, apply a sequential treatment of metribuzin (such as "Sencor" DF) at 1.5 to 3 oz active per acre in the fall when the crop is in the 2-leaf to 3 tiller stage or 3.75 to 6 oz active per acre after winter wheat has at least 4 tillers, 2 inches of secondary root systems throughout the field and actively growing.

**Postemergence Tank-Mix Applications**

Apply a tank mix of ARC CHLORMET at 2/10 to 4/10 oz per acre and metribuzin (such as "Sencor" DF) at 2.25 to 3 oz active per acre postemergence to the crop and grass weeds when wheat has reached the 4 to 5-leaf stage of growth and the grass weeds have reached the 1 to 3-leaf stage of growth.

**Idaho, Oregon, and Washington** - Where broadleaf weeds and brome grass are the problem, apply a tank mix of ARC CHLORMET at 3/10 to 4/10 oz per acre and metribuzin (such as "Sencor" DF) at 1.5 to 3 oz active per acre in the fall when wheat or barley is in the 2-leaf to 3-tiller stage or use ARC CHLORMET at 3/10 to 4/10 oz and metribuzin at 3.75 to 6 oz active per acre when wheat or barley has at least 4 tillers, 2 inches of secondary root systems throughout the field and actively growing. For best results, make application before brome grass is in the 2 to 3 leaf stage. Consult precautions and directions on the metribuzin labeling before making this application.

**Canada thistle:** Apply ARC CHLORMET with surfactant after the majority of thistles have emerged and while they are small (rosette stage to 4 — 6 inches tall) and actively growing. For maximum long-term effect, yearly treatment may be required.

**Corn groomwell:** Apply ARC CHLORMET at 4/10 oz per acre or tank mix ARC CHLORMET with Bromoxynil (such as "Buctril" or "Bronate"), and apply postemergence to the crop when weeds are small and actively growing.

**Flixweed, Tansymustard:** For best results, tank mix ARC CHLORMET with 2,4-D or MCPA (esters or amines) and apply postemergence when weeds are actively growing.

**Kochia, Russian thistle, Prickly lettuce:** Naturally occurring resistant biotypes of these weeds are known to occur. For best results, ARC CHLORMET should be applied postemergence in the spring. Apply when kochia, Russian thistle, and prickly lettuce are less than 2 inches tall or 2 inches across and are actively growing. Use ARC CHLORMET in a tank mix with Dicamba (such as "Banvel"/"Banvel" SGF/"Clarity") and/or 2,4-D and 2 qt surfactant per 100 gal of spray solution.

**Prostrate knotweed:** For best results, apply ARC CHLORMET preemergence at 3/10 to 4/10 oz per acre to knotweed in the fall.

For postemergence treatments, tank mix ARC CHLORMET at 3/10 to 4/10 oz per acre with 2,4-D, MCPA, dicamba (such as "Banvel"/"Banvel" SGF/"Clarity") and/or bromoxynil (such as "Buctril" or "Bronate") and surfactant. Apply to small, actively growing plants (no more than 4 true leaves). For maximum postemergence control, knotweed plants should remain actively growing for 3 to 4 days following application.

**Sunflower:** For best results, apply ARC CHLORMET after the majority of sunflowers have emerged and are small (not more than 2 inches tall) and are actively growing. Add surfactant at 2 qt per 100 gal of spray solution. If ARC CHLORMET is applied preemergence, make application in early spring to allow for timely and adequate rainfall to move ARC CHLORMET into the weed root zone before weeds germinate and develop an established root system.

**Note:** In areas of high rainfall, fall applications may not provide adequate residual control of sunflowers.

Deep-germinating sunflowers that emerge after a spring treatment may not be controlled.

**Vetch:** For best results, apply ARC CHLORMET postemergence at 4/10 oz per acre plus 1/4 lb active ingredient per acre of 2,4-D or MCPA (amine or ester) and surfactant.

**Wild buckwheat:** For best results, apply ARC CHLORMET preemergence at 4/10 oz per acre to wild buckwheat in the fall or early spring.

For postemergence applications, tank mix ARC CHLORMET at 4/10 oz per acre with 2,4-D, MCPA, Dicamba (such as "Banvel"/"Banvel" SGF/"Clarity") and/or Bromoxynil (such as "Buctril" or "Bronate") and surfactant. Apply after the majority of seedlings have emerged and are actively growing.

Note: In certain situations 3/10 oz of ARC CHLORMET may provide acceptable control of Wild buckwheat. Consult local personnel for additional information.

**Wild radish:** For best results, apply ARC CHLORMET at 3/10 to 4/10 oz per acre postemergence.

### CROP ROTATION

Before using ARC CHLORMET, carefully consider your crop rotation plans and options. For rotational flexibility, do not treat all of your wheat, barley, or fallow acres at the same time.

#### Minimum Rotation Intervals

Minimum rotation intervals\* are determined by the rate of breakdown of ARC CHLORMET applied. ARC CHLORMET breakdown in the soil is affected by soil pH, soil temperature, soil microorganisms, and soil moisture. Low soil pH, high soil temperature, and high soil moisture increase ARC CHLORMET breakdown in soil, while high soil pH, low soil temperature, and low soil moisture slow ARC CHLORMET breakdown.

Of these three factors, only soil pH remains relatively constant. Soil temperature, and to a greater extent, soil moisture, can vary significantly from year to year and from area to area. For this reason, soil temperatures and soil moisture should be monitored regularly when considering rotating to other crops.

\* The minimum rotation interval represents the period of time from the last ARC CHLORMET application to the anticipated date of the next planting.

#### Soil pH Limitations

ARC CHLORMET should not be used on fields having a soil pH above 7.9, as extended soil residual activity could extend crop rotation intervals beyond those specified in the rotation table, and under certain conditions, could injure wheat or barley. In addition, other crops planted in high-pH soils can be extremely sensitive to low concentrations of ARC CHLORMET. ARC CHLORMET should not be used on soils with a pH below 5.0, as additional crop stress from low pH and aluminum toxicity may result in crop injury.

#### Checking Soil pH

Before using ARC CHLORMET, determine the soil pH of the field. To obtain a representative pH value, take several samples from different areas of the field between 0 and 4 inches deep and analyze them separately. Consult local extension publications for additional information on soil sampling procedures.

Location	Soil pH*	Application Rate (oz/A)	Minimum Rotation Interval (Months)		
			Wheat/Rye/Triticale**	Oat	Barley
NE, KS, OK, TX	7.9 or lower	2/10 to 4/10	0	10	10
	7.9 or lower	5/10	4	10	16
CO, NE(Panhandle), Southeastern WY	7.9 or lower	2/10 to 4/10	0	10	10
IDOR, WA, MT, ND, SD, and WY(except Southeastern WY)	6.5 or lower	2/10 to 4/10	0	10	10
	6.6 to 7.9	2/10 to 4/10	0	10	16

• See the Maximum Use Rates and Soil pH Limitations sections of this label.

\*\* For Durum wheat and Wampum variety of Spring Wheat, follow the rotation intervals listed under Barley

Non Cereal Crops—Rotation Intervals—Non Irrigated Land

Location State	County or Area	Crop	Soil pH	Application Rate (oz/A)	Cumulative Precipitation (Inches)	Rotation Interval (Months)
Colorado	E. of Continental Divide	Field corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 2/10 to 4/10	20 45	11 36
		Grain sorghum	7.5 or lower 7.6 to 7.9	2/10 to 4/10 2/10 to 4/10	45 60	36 48
Idaho*	Northern (Benewah, Bonner, Boundary, Clearwater, Idaho, Koontenai, Latah, Lewis, and Nez Perce counties)	Pea (dry)	6.5 or lower	2/10 to 4/10	35	24
		Lentils	6.5 or lower	2/10 to 4/10	50	36
Kansas	All areas	Field Corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 2/10 to 4/10	20 45	11 36
		Grain sorghum Soybeans	7.9 or lower	2/10 to 5/10	25	14
	W. Central and	Grain	7.5 or	2/10 to	21	14

	Western (generally W. of Highway 183 to the western edge of Grant, Kearny, Logan, Rawlings, Stevens, Thomas, and Wichita counties)	sorghum	lower 7.6 to 7.9	4/10 2/10 to 4/10	42	26
		Soybeans	7.5 or lower 7.6 to 7.9	2/10 to 4/10 2/10 to 4/10	40 60	24 36
	Far Western (In the last tier of counties along the KS/CO border: Cheyenne, Greeley, Hamilton, Morton, Sherman, Stanton, and Wallace)	Grain sorghum	7.5 or lower 7.6 to 7.9	2/10 to 4/10 2/10 to 4/10	36 60	26 48
		Soybeans				
Nebraska	All areas	Field Corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 2/10 to 4/10	20 45	11 36
	S. Central (Franklin, Nuckolls, Thayer, and Webster counties)	Grain sorghum Soybeans	7.9 or lower	2/10 to 5/10	25	14
	Western counties (Chase, Dundy, Frontier, Furnas, Gosper, Harlan, Hayes, Hitchcock, Perkins, Phelps, and Red Willow)	Grain sorghum, Soybeans	7.5 or lower 7.6 to 7.9	2/10 to 4/10 2/10 to 4/10	40 60	24 36
	Panhandle (Deuel, Garden, and Sheridan counties and all counties W. to the WY border)	Grain sorghum	7.5 or lower	2/10 to 4/10	45	24



Oklahoma	All areas	Field Corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 2/10 to 4/10	20 45	11 36
	East of Panhandle	Grain sorghum, Cotton, Mung beans, Soybeans	7.9 or lower	2/10 to 5/10	25	14
	Panhandle	Grain sorghum	7.9 or lower	2/10 to 4/10	30	25
Oregon*	Northeastern counties (Baker, Umatilla, Union, Wahlowa)	Pea (dry)	6.5 or lower	2/10 to 4/10	35	24
		Lentils	6.5 or lower	2/10 to 4/10	50	36
	West of the Cascades	Ryegrass (annual and perennial) Crimson Clover	6.5 or less	2/10 to 4/10	20	9
		Red Clover Snap Beans	6.5 or less	2/10 to 4/10	40	15
		Field Corn	6.5 or less	2/10 to 4/10	60	22
Texas	All areas	Field Corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 2/10 to 4/10	20 45	11 36
	Eastern counties †	Grain Sorghum, Cotton, Mung Beans, Soybeans	7.9 or lower	2/10 to 5/10	25	14
	† The Eastern counties are: Archer, Bell, Bosque, Bowie, Camp, Cass, Clay, Cohn, Cooke, Coryell, Dallas, Delta, Denton, Ellis, Falls, Fannin, Franklin, Grayson, Hill, Hood, Hopkins, Hunt, Jack, Johnson, Kaufman, Lamar, Limestone, McLennan, Milam, Montague, Morris, Navarro, Palo Pinto, Parker, Rains, Red River, Robertson, Rockwall, Somervell, Tarrant, Titus, Upshur, Van Zandt, Wichita, Williamson, Wise, Wood, Young					
	Central counties	Cotton, Grain Sorghum	7.9 or lower	2/10 to 4/10	25	14
			7.9 or lower	5/10	46	26
The Central counties are: Baylor, Callahan, Eastland, Foard, Hardeman, Haskell, Knox, Shackelford, Stephens, Throckmorton, Wilbarger						
	Panhandle	Grain sorghum	7.9 or lower	2/10 to 4/10	30	25
Washington*	Eastern (Asotin, Columbia, Garfield, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman)	Pea (dry)	6.5 or lower	2/10 to 4/10	35	24
		Lentils	6.5 or lower	2/10 to 4/10	50	36

Wyoming	Southeastern counties (Platte, Goshen, and Laramie)	Field corn, Millets	7.4 or lower 7.5 to 7.9	2/10 to 4/10 02/10 to 4/10	20 45	11 36
		Grain sorghum	7.5 or lower 7.6 to 7.9	2/10 to 4/10 2/10 to 4/10	45 60	36 48

Note: Do not plant sorghum grown for hybrid seed production.

\* In Idaho, Oregon & Washington for peas and lentils, a field bioassay is required if soil pH is above 6.5

### BIOASSAY

A field bioassay must be completed before rotating to any crop not listed (See the Rotation Intervals table), or if the soil pH is not in the specified range, or if the use rate applied is not specified in the table, or if the minimum cumulative precipitation has not occurred since application.

#### Field Bioassay

To conduct a field bioassay, grow test strips of the crop or crops you plan to grow the following year in fields previously treated with ARC CHLORMET. Crop response to the bioassay will indicate whether or not to rotate to the crop(s) grown in the test strips.

If a field bioassay is planned, check with your local ARCANA representative for information detailing the field bioassay procedure.

### GRAZING

There are no grazing restrictions on ARC CHLORMET.

### SPRAY EQUIPMENT

For specific application equipment, refer to the manufacturer's directions for additional information on GPA, pressure, speed, nozzle types and arrangements, nozzle heights above the target canopy.

Be sure to calibrate air or ground equipment properly before application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern with minimum drift. Use higher spray volumes to obtain better coverage when crop canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, turning, slowing, or stopping, to avoid injury to the crop.

Do not make applications using equipment and/or spray volumes or under weather conditions that might cause spray to drift onto non target sites. For additional information on spray drift, refer to the Spray Drift Management section of the label.

Continuous agitation is required to keep ARC CHLORMET in suspension.

### SPRAYER CLEANUP

Spray equipment must be cleaned before ARC CHLORMET is **sprayed**. Follow the cleanup procedures specified on the labels of previously applied products. **If no directions are provided, follow the 6 steps outlined in the After Spraying ARC CHLORMET and before Spraying Crops Other Than Wheat or Barley section.**

At the End of the Day

When multiple loads of ARC CHLORMET herbicide are applied, it is recommended that during periods at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses be flushed. This will prevent the buildup of dried pesticide deposits from accumulating in the application equipment.

**After Spraying ARC CHLORMET and before Spraying Crops Other Than Wheat or Barley**

**To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of ARC CHLORMET as follows:**

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia\* (contains at least 3% active ingredient) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 minutes. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank. -
3. Remove the nozzles and screens and clean separately in a bucket containing ammonia\* and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. If only ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) listed on this label. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

**\* Equivalent amounts of an alternate-strength ammonia solution or a ARCANA approved spray equipment cleaner can be used in the cleanup procedure. Carefully read and follow the individual cleaner instructions. Consult your agricultural dealer, applicator, or ARCANA representative for a listing of approved spray equipment cleaners.**

**Notes:**

1. **Caution:** Do not use chlorine bleach with ammonia, as dangerous gases will form. **Do not** clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When ARC CHLORMET is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.
4. In addition to this cleanout procedure, all pre-application cleanout guidelines on subsequently applied products should be followed as per the individual labels.
5. Where routine spraying practices include shared equipment frequently being switched between applications of ARC CHLORMET and applications of other pesticides to REPORT EXTRA-sensitive crops during the same spray season, it is recommended that a sprayer be dedicated to ARC CHLORMET to further reduce the chance of crop injury.

**SPRAY DRIFT MANAGEMENT**

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

**AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**

**Importance of Droplet Size**

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

**Controlling Droplet Size - General Techniques**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles.

**Controlling Droplet Size - Aircraft**

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length** - The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- **Application Height** - Application more than 10ft above the canopy increases the potential for spray drift.
- **Boom Height** - Set the boom at the lowest height that provides uniform coverage and reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**Wind** - Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity**

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

**Temperature Inversions**

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

### **Shielded Sprayers**

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### **Air Assisted (air blast)**

#### **Field Crop Sprayers**

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

## **INTEGRATED PEST MANAGEMENT**

**ARCANA** recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which

can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## **WEED RESISTANCE**

Biotypes of certain weeds listed on this label are resistant to ARC CHLORMET and other herbicides with the same mode of action\*, even at exaggerated application rates. Biotypes are naturally occurring individuals of a species that are identical in appearance but have slightly different genetic compositions; the mode of action of an herbicide is the chemical interaction that interrupts a biological process necessary for plant growth and development.

If weed control is unsatisfactory, it may be necessary to retreat problem areas using a product with a different mode of action, such as postemergence broadleaf and/or grass herbicides. If resistant weed biotypes such as kochia, prickly lettuce, and Russian thistle are suspected or known to be present use a tank mix partner with ARC CHLORMET to help control these biotypes, or use a planned herbicide rotation program where other residual broadleaf herbicides having different modes of action are used. To better manage weed resistance when using ARC CHLORMET, use a combination of tillage, and tank-mix partners or sequential herbicide applications that have a different mode of action than ARC CHLORMET, to control escaped weeds. Do not let weed escapes go to seed.

Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative herbicides available in your area. It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes.

\* Naturally occurring weed biotypes that are resistant to "Amber" herbicide, ACCURATE® herbicide, "Ally" herbicide, Glean® FC herbicide, "Express" herbicide, or "Harmony" Extra herbicide will also be resistant to ARC CHLORMET.

## **PRECAUTIONS**

- Wheat and barley varieties may differ in their response to various herbicides. Consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use of ARC CHLORMET to a small area.

- Do not apply to wheat or barley under sown with legumes and grasses, as injury to the forages will result.
- Do not apply to frozen ground where surface runoff may result.
- Do not apply to snow-covered ground.
- Do not apply to irrigated land where tail water will be used to irrigate other cropland.
- Wherever ARC CHLORMET is used on land previously treated with GLEAN® FC, ALLY®, “Amber”, “Assert”, or other longer residual herbicides with the same mode of action, read the rotational guidelines on both labels and follow the one with the longest interval stated for your situation before choosing to rotate to crops other than wheat or barley.
- Do not use less than 2/10 oz per acre of ARC CHLORMET preplant, preemergence, or post-emergence.
- To reduce the potential for movement of treated soil due to wind erosion, do not apply to powdery, dry, or light sandy soils until they have been stabilized by rainfall, trashy mulch, reduced tillage or other cultural practices. Injury to adjacent crops may result when treated soil is blown onto land used to produce crops other than cereal grains.
- For ground applications applied postemergence to weeds when dry, dusty field conditions exist, control of weeds in wheel track areas may be reduced. The addition of 2,4-D or MCPA should improve weed control under these conditions.
- Do not apply ARC CHLORMET preemergence on wheat if the wheat has germinated and has started to emerge above the soil surface.
- Do not use ARC CHLORMET preemergence on wheat that has been planted into dry soil (“dusted in”) or on very coarse, uneven seedbeds.
- Temporary discoloration and/or crop injury may occur if ARC CHLORMET is applied when the crop is stressed by severe weather conditions (such as heavy rainfall, prolonged cold weather, or wide fluctuations in day/night temperatures), disease or insect damage, low fertility, applications to coarse soils, or when applied in combination with surfactant and high rates of liquid nitrogen fertilizer solutions.
- Injury to or loss of desirable trees or vegetation may result from failure to observe the following:
  - Do not apply, 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 chemical may be washed or moved into contact with their roots.
  - Do not use on lawns, walks, driveways, tennis courts, or similar areas.
  - Take all necessary precautions to avoid all direct or indirect contact (such as spray drift) with non-target plants or areas.
  - Carefully observe sprayer cleanup instructions, both prior to and after using this product, as spray tank residue may damage crops other than wheat or barley.

#### **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ARCANA LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ARCANA LLC and Seller harmless for any claims relating to such factors.

ARCANA LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under

conditions not reasonably foreseeable to or beyond the control of Seller or ARCANA LLC, and Buyer and User assume the risk of any such use. ARCANA LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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