



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Registration Division (7505P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

**EPA Reg. Number:**

34704-1142

**Date of Issuance:**

7/13/20

**NOTICE OF PESTICIDE:**

Registration  
 Reregistration  
 (under FIFRA, as amended)

**Term of Issuance:**

Unconditional

**Name of Pesticide Product:**

Arterio XL

**Name and Address of Registrant (include ZIP Code):**

Robert Avalos  
 Manager of Registrations  
 Loveland Products, Inc.  
 P.O. Box 1286  
 Greeley, CO 80632-1286

**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 under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

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 section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. Submit one copy of the revised final printed label for the record before you release the product for shipment.

*Continued on page 2*

**Signature of Approving Official:**

Mindy Ondish, Product Manager 23  
 Herbicide Branch, Registration Division (7505P)

**Date:**

7/13/20

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSF:

- Basic CSF dated 02/20/2020

If you have any questions, please contact Curtis Hildebrandt at 703-347-8198 or by email at [hildebrandt.curtis@epa.gov](mailto:hildebrandt.curtis@epa.gov).

Enclosure

[Note to reviewer: [Text] in brackets denotes optional or explanatory language]

Sulfentrazone	GROUP	14	HERBICIDE
Clorimuron-ethyl	GROUP	2	HERBICIDE

## Arterio XL

**ACTIVE INGREDIENTS:**

Sulfentrazone ..... 62.2%  
 Chlorimuron Ethyl ..... 7.8%

**OTHER INGREDIENTS:** ..... 30.0%  
**TOTAL** 100.00%

Equivalent to 0.7 pounds of active ingredient per pound product (0.62 lb ai/lb of sulfentrazone and 0.08 lb ai/lb of chlorimuron ethyl)

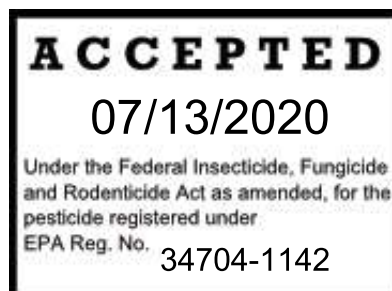
### KEEP OUT OF REACH OF CHILDREN CAUTION

See label booklet for additional Precautionary Statements and Directions for Use.

FIRST AID	
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.</b>	

EPA Reg. No. 34704-1142  
 EPA Est. No.  
 Net Weight:  
 [Print Code to be placed here]

MANUFACTURED FOR:  
 LOVELAND PRODUCTS, INC.  
 P.O. BOX 1286  
 GREELEY, COLORADO 80632-1286



## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

Harmful if swallowed. Causes moderate eye irritation. Do not get into eyes, on skin, or on clothing.

#### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and other handlers must wear:

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do Not Reuse Clothing. Follow manufacturer's label instructions for cleaning/maintaining PPE. In the event there are no instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **ENGINEERING CONTROL STATEMENTS**

Handlers using enclosed cabs or closed systems in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], may reduce or modify the handler PPE requirements as specified in the WPS.

#### **PHYSICAL/CHEMICAL HAZARDS**

Do not mix or allow coming in contact with oxidizing agents. Hazardous chemical reaction may occur.

#### **USER SAFETY RECOMMENDATIONS**

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

#### **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

#### **Non-target Organism Advisory**

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

#### **Windblown Soil Particles Advisory**

**WINDBLOWN SOIL PARTICLES:** Arterio XL has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying Arterio XL if prevailing local conditions may be expected to result in off-site movement.

**Surface Water Advisory:**

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of chlorimuron-methyl from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

**Ground Water Advisory:** Sulfentrazone and chlorimuron-methyl are known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Do not use on coarse soils classified as sand which have less than 1% organic matter.

**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 at the time of application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

**AGRICULTURAL USE REQUIREMENTS**

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

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

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

- coveralls
- protective eyewear
- waterproof gloves
- shoes plus socks

**Prior to using Arterio XL, consideration should be given to crop rotation plans.** Crops other than soybeans may be extremely sensitive to low concentrations of ARTERIO XL remaining in the soil the next planting season. Choice of rotation crop is restricted following application of ARTERIO XL. (See "ROTATIONAL CROP GUIDELINES" for your geographical region.)

**IMPORTANT TO OBSERVE THE FOLLOWING**

Do not apply or 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. Injury or loss of desirable trees or vegetation may result. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Keep from contact with fertilizers, insecticides, fungicides and seeds during storage. Do not contaminate any body of water.

Thoroughly clean ARTERIO XL from application equipment immediately after use and prior to spraying crops other than soybeans. Injury may result to subsequent crops if failure to remove even small amounts of ARTERIO XL from application equipment.

**Proper Handling Instructions:** Do Not mix or load this product within 50 feet of any well to include abandoned and drainage wells, streams and rivers, lakes and reservoirs. This 50 feet perimeter does not apply to capped or plugged wells. It does not apply to dikes that are properly constructed around mixing or loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Any such pad used for this purpose must be constructed to be able to contain: Product spills – Equipment leaks – equipment rinsate or wash – container leaks – rain water that collects on the pad. This pad must be self-contained. Pads that are constructed with roofs must be able to provide a minimum containment capacity of 100%. Pads without roofs must have a capacity to contain a minimum of 110% capacity of the largest container or application equipment that may be on the pad. The above mentioned minimum containment capacities do not apply to equipment/vehicles that are delivering pesticide shipments to the loading or mixing site. Always check with your state regulatory official since each state may have different or additional well set-backs and or containment operation guidelines.

This product must be used in a way to prevent any back siphoning into wells. It must be used in a manner to prevent spills, improper disposal of pesticide, rinsates and or spray mixtures into wells or any water source.

## **PRODUCT INFORMATION**

ARTERIO XL is a dispersible granule formulated to easily mix with water, to be sprayed for selected preemergent and pre-plant incorporated weed control in soybeans. Control of many broadleaf weeds and partial control of annual grasses will be attained when applied according to label instructions.

Rainfall or sprinkler irrigation is required to activate Pre-emergence and Pre-plant incorporated applications of ARTERIO XL. The control and duration of effect depend on the following: Use rate, growing conditions at and following time of treatment, weed spectrum, soil pH, moisture and precipitation and organic matter. Use information which is applicable to all ARTERIO XL use geography can be found within the label.

## **BIOLOGICAL ACTIVITY**

ARTERIO XL quickly inhibits growth of susceptible weeds. Susceptible weeds may germinate and emerge following an application of pre-plant incorporation or pre-emergence treatment, but leaves become yellow 3-5 days after emergence and growth ceases. Death of growing points and leaf tissue will occur in some species while others will remain green, stunted and non-competitive. ARTERIO XL will provide partial control of some annual grasses applied correctly but an additional product(s) may be warranted to provide best grass control.

Seedling vigor may be impacted if poor growing conditions prevail. If poor growing conditions are present ARTERIO XL (like other soil applied herbicides) may injure soybeans. In the event injury symptoms appear they will disappear rapidly and will not result in reductions of yield. Poor growing conditions, such as cool temperatures, presence of disease pathogens, excessive moisture and soil compaction may cause this temporary injury to soybeans.

## **ROTATIONAL GUIDELINES FOR ALL ARTERIO XL APPLICATIONS**

The table below describes the minimum length in months from the time of ARTERIO XL application until ARTERIO XL treated soil can be replanted to the crops listed in the table. When a recommended tank mix is used, it is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**ROTATIONAL GUIDELINE**

For Full Use Rates (See Rate Table 1)

*Refer to importance of soil pH section on page 8 for additional information*

Crop	Rotation Interval A IN, OH, MO, IL, KS, NE,OK Soil pH less than 7.2, (If soil pH is greater than 7.2 use rotation interval B)	Rotation Interval B AL, AR, GA, KY, LA, MI, MS,MO Bootheef, NC, PA, SC, TN, and TX where soil pH is greater than 6.8 (For those states listed above, if soil pH is less than 6.8 use rotation interval A)
	Recropping Interval in Months	Recropping Interval in Months
Soybeans <sup>3</sup>	Anytime	Anytime
Wheat, Barley, Rye	4	4
Oats	12	18
Alfalfa	12	18
Rice	10	18
Sorghum	18 or 10	18
Tobacco	10	18
Tomato (transplant)	12	18
Field Corn <sup>1</sup>	Anytime	Anytime
Dry Beans	12	18
Clover, Cotton, Cucumber, Flax, Peanuts, Pumpkin, Sunflower, Popcorn, Sweet Corn, Watermelon, Cabbage, Lentils, Mustard	18	18
Canola (rapeseed), Carrot, Onion, Potato, Sugar Beets and any other crop not listed	36	36

**ROTATIONALGUIDELINE****For Reduced Use Rates –(See Rate Table 2)***Refer to Importance of soil pH section on page for additional information*

Crop	Rotation Interval A All States, all pH's except those listed in column B	Rotation Interval B DE, IA, MD, MI, MN, NJ, VA, WI, WV soil pH greater than 6.8
	Recropping Interval in Months <sup>4</sup>	Recropping Interval in Months <sup>4</sup>
Soybeans <sup>3</sup>	Anytime	Anytime
Wheat, Barley, Rye	4	4
Oats	12	18
Alfalfa	12	18
Rice	10	18
Sorghum <sup>5</sup>	18	18
Tobacco	10	18
Tomato (transplant)	12	18
Field Corn <sup>1</sup>	Anytime	Anytime
Dry Beans	12	18
Clover, Cucumber, Flax, Pumpkin, Sunflower, Sweet Corn, Popcorn, Watermelon, Cabbage, Lentils, Mustard	18	18
Canola (rapeseed), Carrot, Onion, Potato, Sugar Beets and any other crop not listed	36	36
Cotton <sup>2</sup>	18 or 12	18 or 12
Peanuts	12	18

Under rotational interval A of the Reduced Rate Table above, a pre-emergent application of a Chlorimuron ethyl product is not allowed in the states of AL, AR, GA, KY, LA, MO, MS, NC, OK, SC, TN and TX where soil pH is greater than 7.0.

Do not use full use rates in the states of DE, IA, MD, MI, MN, NJ, VA, WI and WV.

<sup>1</sup> Field corn includes corn grown for grain, silage, and seed corn.

<sup>2</sup> Cotton may be planted after 12 months where ARTERIO XL was applied at rates of 5 oz/acre or less and meets the following conditions:

- Medium and fine soils
- pH <7.2
- Rainfall or irrigation must exceed 15" after application of ARTERIO XL to rotate to cotton

<sup>3</sup> Do not feed treated soybean forage or soybean hay to livestock.

<sup>4</sup> Crops that have rotational intervals greater than 12 months after an ARTERIO XL application are the result of crop injury concerns. The crops should be planted with a successful bioassay.

<sup>5</sup> Sorghum may be planted after 10 months where ARTERIO XL was applied at rates 6.4 oz/acre or less.



**WEEDS CONTROLLED-PREEMERGE**

When used as directed ARTERIO XL will provide control of the following weed species:

Carpetweed	Russian Thistle
Cocklebur*	Nutsedge, Purple
Copperleaf, Hophornbeam	Nutsedge, Yellow
Copperleaf, Virginia	Pigweed
Florida beggarweed	Palmer amaranth
Jimsonweed	Redroot
Kochia	Smooth
Lambsquarters	Spiny amaranth
Mallow, Venice	Poinsettia, wild
Marestail	Prickly sida (teaweed)
Morningglory	Purslane, common
Annual Ivyleaf	Ragweed, common
Entireleaf	Ragweed, giant*
	Senna, Coffee
	Smartweed (annual)
Pitted	Spurge, Spotted
Smallflower	Sunflower, wild
Tall	
Mustard, wild	Velvetleaf
Nightshade, Black	Waterhemp, common
Nightshade, Eastern Black	Waterhemp, tall
Nightshade, Hairy	Star of Bethlehem

\*Weed species which can germinate deep in the soil such as pitted morningglory, cocklebur, and giant ragweed or other weeds; such as nutsedge, which may emerge at various times during the growing season may require a cultivation or a follow up application of postemergence herbicides for season-long control.

**ARTERIO XL will provide partial control of the following weeds when used as directed:**

Barnyardgrass	Mexicanweed
Burcucumber	PanicumTexas and fall
Crabgrass	Sesbania, Hemp
Foxtail, species	Sicklepod
Goosegrass	Signalgrass, broadleaf
Johnsongrass, seedling	

For additional instructions on weed control, see comments following **Rate Table 1**.

**APPLICATION INFORMATION****PREPARATION OF SPRAY TANK**

Before using ARTERIO XL it is very important the spray equipment is clean and free of any previous pesticide deposits in the tank. Use the previous product's label that was used and follow Tank Cleanout procedures that are on the label. If no procedure is provided use the cleanout procedure on the ARTERIO XL label marked SPRAYER CLEANOUT.

**Mixing Instructions**

1. Fill the tank 1/4 to 1/3 full of water.
2. Add the required amount of ARTERIO XL while agitating.
3. Maintain agitation and continue filling tank with water to insure ARTERIO XL is fully dispersed.
4. Before adding any other material ARTERIO XL should be thoroughly mixed with water in the spray tank. Mixing order should be the following: Fill tank half-full and add ARTERIO XL – while continue filling

with water add other herbicide(s), recommended spray adjuvant and liquid nitrogen fertilizer if recommended.

5. Apply ARTERIO XL spray solution within 24 hours of mixing to avoid product degradation.
6. If spray tank has stopped and the mixture has settled, before using re-agitate thoroughly.
7. When tank mixing with liquid fertilizers always prepare a slurry with water before adding to spray tank.

#### **SPRAYER CLEANOUT**

To avoid injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of ARTERIO XL as follows:

1. Drain tank; thoroughly hose down the interior surfaces of the tank; then flush tank, boom, and hoses with clean water for a minimum of 5 minutes.
2. Fill spray tank half full of water and add one of the cleaning agents listed below. Finish filling the tank with water, and then flush the cleaning solution through the boom, hoses, and nozzles. Add water to completely fill the tank and allow to agitate or recirculate for at least 10 minutes. Again, flush the boom, hoses and nozzles, and drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing water and the cleaning agent.
4. Repeat Step 2.
5. Thoroughly rinse the tank with clean water for a minimum of 5 minutes, flushing water through the boom-nozzles and hoses.

**NOTE:** Carefully read and follow the individual cleaning agent instructions. Use any of the following cleaning agents:

- One gallon of household ammonia (contains 3% active) per 100 gallons of water.
- Commercial spray tank cleaner

Do not drain or flush equipment on or near desirable trees or plants.

Do not contaminate any body of water including irrigation water that may be used on other crops.

Should small quantities of ARTERIO XL remain in inadequately cleaned mixing, loading, and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. Loveland Products, Inc. accepts no liability for any effects due to inadequately cleaned equipment.

## **SPRAY DRIFT MANAGEMENT**

### **Aerial Applications:**

- Aerial application is only allowed when the field is too wet to safely apply pesticides using ground equipment.
- When this product is allowed to be applied by air, applicators must use a minimum finished spray volume of 5 gallons per acre.
- Do not release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to select nozzles and application pressure that delivers a Coarse or coarser droplet size (ASABE S572).
- For all other applications, applicators are required to select nozzles and application pressure that delivers a Medium or coarser droplet size (ASABE S572).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Applicators may spray only when wind speed is between 3 and 10 mph.
- Do not apply during temperature inversions.

### **Ground Boom Applications:**

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When sulfentrazone is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- The maximum release height is 30 inches from the soil.
- For applications prior to the emergence of crops and target weeds, applicators are required to select nozzles and application pressure that delivers a Coarse or coarser droplet size (ASABE S572).
- For all other applications, applicators are required to select nozzles and application pressure that delivers a Medium or coarser droplet size (ASABE S572).
- Applicators may spray only when wind speed is between 3 and 10 mph.
- Do not apply during temperature inversions.

### **Boom-less Ground Applications:**

- Applicators are required to use a medium or coarser droplet size (ASABE S572) for all applications.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

## **SPRAY DRIFT ADVISORIES**

### **Boom-less Ground Applications:**

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

### **Handheld Technology Applications:**

- Take precautions to minimize spray drift.

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

**Controlling Droplet Size – Ground Boom**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.  
Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

**Controlling Droplet Size – Aircraft**

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

**BOOM HEIGHT – Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**RELEASE HEIGHT - Aircraft**

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

**SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

**TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

**TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

**WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

**WEED RESISTANCE MANAGEMENT**

For resistance management, Arterio XL is a Group 14 and Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to Arterio XL and other Group 14 and Group 2 herbicides. Weed species with acquired resistance to Group 14 and Group 2 herbicides may eventually dominate the weed population if Group 14 and Group 2 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Arterio XL or other Group 14 or Group 2 herbicides. Users should scout before and after application.

Suspected herbicide-resistant weeds may be identified by these indicators:

1. Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;

2. A spreading patch of non-controlled plants of a particular weed species; and
3. Surviving plants mixed with controlled individuals of the same species.

To delay herbicide resistance:

- Avoid the consecutive use of Arterio XL or other target site of action Group 14 and Group 2 herbicides that might have a similar target site of action, on the same weed species.
- Use tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern (an herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides)
- Base herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Scout fields prior to application to identify the weed species present and their growth state to determine if the intended application will be effective.
- Scout fields after application to verify that the treatment was effective.
- Contact your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your Loveland Products, Inc. retailer, representative or call **1-888-574-2878**. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemicals means to remove escapes, as practical, with the goal of preventing further seed production.

#### **IMPORTANT PRECAUTIONS**

- All direct or indirect contact (such as spray drift) to other crops or to land scheduled to be planted to crops other than soybeans should be avoided.
- Soybean stunting may occur if excessive rainfall occurs after application but before soybeans emerge. Injury is more prevalent under poor drainage or compacted conditions or when soil is saturated for long periods of time. Soybeans rapidly outgrow stunting once favorable growing conditions return.
- Seedling disease, nematodes, cold weather, deep planting (more than 2"), excessive moisture, high salt concentration, or drought may weaken soybean seedlings and increase the possibility of crop injury.
- Back to back application of ALS or ALS containing herbicides can occasionally result in residual herbicide stacking and potential crop injury. Grower should be aware of previous herbicide use and potential interaction it may have with ARTERIO XL application.
- Thoroughly clean ARTERIO XL from application equipment immediately after use and prior to spraying crops other than soybeans. Failure to remove even small amounts of ARTERIO XL from application equipment may result in injury to subsequently sprayed crops.

#### **IMPORTANCE OF SOIL PH**

Always determine soil pH by laboratory analysis using a 1:1 ratio of soil to water suspension.

Variations of soil pH in the same field can vary as much as 2 pH units is not uncommon. Therefore, it is recommended that subsampling for pH values that may be higher than a field average. Do not depend on composite soil samples taken for analysis of soil fertility since they may not detect areas of high pH.

The following is a non-inclusive list of potential high pH areas where sub-sampling is recommended:

- Where different soil types are evident within a field, sample soil types separately.
- Where conditions vary within a field, sample areas separately, such as:
  - areas bordered by limestone gravel roads,
  - river bottoms subject to flooding,
  - low areas in hardpan soils where evaporative ponds may occur,
  - eroded hillsides,
  - along drain tile lines, and
  - areas where drainage ditch spoil has been spread.

Where lime has not been deeply incorporated, soil may exhibit significantly higher pH values in the upper 3 inches of soil. Composite soil samples taken at a 6-8 inch depth may not reflect the elevated pH near the

surface. In these cases, shallow sampling, the upper 3 inches, is advised.

### USE DIRECTIONS FOR SOYBEANS

Apply ARTERIO XL according to Rate Tables 1 or 2 as directed for specific types of application and geographic areas. Do not use the full use rate (Rate Table 1) in DE, IA, MD, MI, MN, NJ, VA, WI and WV. Refer to Rate Table 2 for reduced rates in these states.

Follow all label restrictions regarding soil type, soil pH, organic matter, rotational crop intervals, geographic location, and weed pressure, in selecting the rate of ARTERIO XL from Rate **Table 1** or **Table 2**.

**Use of ARTERIO XL on soils which exceed pH 6.8 may result in unacceptable injury to the following crop. ARTERIO XL may be used on fields which are generally pH 6.8 or less, but which may contain isolated areas where the pH exceeds 6.8 only if the following rotational crop is soybeans or a Loveland Products, Inc. recommended chlorimuron ethyl resistant corn variety.**

### USE RESTRICTIONS

- Do not use ARTERIO XL in CO, WY, ND, NY or SD at any rate. Do not apply ARTERIO XL in Nebraska west of US Hwy 281 and north of US Hwy 30.
- Do not apply to black belt soil of Alabama or Mississippi with a soil pH >6.8 or history of nutrient deficiency such as iron chlorosis, as injury may occur.
- Do not follow ARTERIO XL with a post-emergence application of another chlorimuron-ethyl containing herbicide in the same cropping season.
- Do not apply this product through any type of irrigation system.
- Do not feed treated soybean forage or soybean hay to livestock.
- **Single application:** Do not apply more than 9.6 ounces of ARTERIO XL (0.366 lb ai sulfentrazone and 0.048 lb ai chlorimuron-ethyl) more than once per season.
- **Split application:** Two applications totaling 9.6 ounces of ARTERIO XL (0.366 lb ai sulfentrazone and 0.048 lb ai chlorimuron-ethyl) may be made per season.
- Do not make more than 2 applications per year.
- Do not apply within 7 days if a second application is necessary.
- Do not apply ARTERIO XL if there are visible signs of cracking due to soybean emergence, or serious crop injury may result.
- Do not apply or 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, or injury to desirable trees and plants may occur.
- Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds during storage.
- Do not tank mix ARTERIO XL with organophosphate insecticides. Do not apply ARTERIO XL within 14 days before or after an application of an organophosphate insecticide, as severe crop injury may occur.

## Full Use Rate

### Rate Table 1:

Fall application, Early Pre-plant, Pre-plant Burndown, Pre-plant Incorporated, and Pre-emergence:  
No-Till, Minimum-till, Conventional tillage

Soil Texture	Organic Matter	
	0.5 – 2%	2 – 4%
Ounces Product Per Acre		
<b>Coarse:</b> Loamy Sand, Sandy Loam	5.0 – 6.0	6.0 – 7.0
<b>Medium:</b> Loam, Silt Loam, Silt, Sandy Clay Loam	6.5 – 7.5	7.0 – 8.0
<b>Fine:</b> Silty Clay Loam, Clay Loam, Clay	7.0 – 8.0	8.0 – 9.6

Apply ARTERIO XL according to Rate Tables for types of application and specific geographic areas.

### Reduced rate for GMO soybean (Roundup Ready, Liberty Link)

#### Rate Table 2:

Use rates in Table 2 are to be used in conjunction with a planned POST herbicide program; ARTERIO XL at these reduced rates will provide early season control or suppression to reduce early season weed competition.

Fall application, Early Pre-plant, Early Pre-plant Burndown, Pre-plant Incorporated, Pre-emergence:  
No-Till, Minimum-till, Conventional Tillage

Soil Texture	Organic Matter	
	0.5 – 2%	2 – 4%
Ounces Product Per Acre		
<b>Coarse:</b> Loamy Sand, Sandy Loam	3.0 – 4.0	3.2 – 4.0
<b>Medium:</b> Loam, Silt Loam, Silt, Sandy Clay Loam	3.2 – 4.0	3.2 – 4.8
<b>Fine:</b> Silty Clay Loam, Clay Loam, Clay	4.0 – 5.0	4.0 – 5.0

## **APPLICATION METHODS**

Do not apply ARTERIO XL after the soybean crop has emerged or severe injury or death of the crop may occur.

ARTERIO XL may be applied by any of the methods listed below.

### **CONSERVATION TILLAGE**

#### **Early Pre-Plant in No-Till, Minimum Till, or Stale Seedbed**

ARTERIO XL applied Early Pre-plant must be applied in combination with the appropriate burndown herbicide such as glyphosate, glufosinate, gramoxone, and/or 2,4-D to achieve acceptable control of existing weeds during application. ARTERIO XL is rainfast after one hour when applied as a burndown treatment. For burndown or control of existing vegetation, an appropriate burndown herbicide, such as glyphosate at labeled rates is recommended. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. For applications of ARTERIO XL made from 30 – 60 days before planting apply the higher rate in the appropriate soil range from tables 1 or 2 depending on the soybean system being grown.

### **PRE-EMERGENCE**

ARTERIO XL may be applied at planting time or within 3 days after planting, but before seed emergence. ARTERIO XL may be applied alone or in tank mix combinations with other registered soybean herbicides. When applied in tank mix combinations, read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. The seed furrow should be completely closed and seed covered before any applications of ARTERIO XL.

### **PRE-PLANT INCORPORATED**

Uniformly incorporate ARTERIO XL or ARTERIO XL tank mixes no deeper than 2" prior to planting soybeans. If tank-mixing ARTERIO XL with a companion herbicide, follow all label instructions for proper incorporation of the companion herbicide in the top 2" of soil. Improper incorporation can result in erratic weed control or potential crop injury.

### **FOR HERBICIDE ACTIVATION RAINFALL REQUIREMENT**

Best results are obtained if ARTERIO XL is followed by rainfall or irrigation before weeds germinate. Several small rainfalls of less than 1/4" each are not as beneficial as one large rainfall of 1/2-1". If moisture is not sufficient to activate the herbicide, a rotary hoeing or shallow cultivation should be made after emergence of the crop while weeds are small enough to be controlled by mechanical means.

### **FALL APPLICATIONS**

ARTERIO XL may be applied as a fall treatment to the stubble of harvested crops for the burndown of existing vegetation and pre-emergence control of labeled weeds the following spring in no-till and conservation tillage production systems. If weeds are emerged at the time of application, utilize a tank mixture with a suitable burndown herbicide such as glyphosate, or glufosinate at labeled rates. Fall applied burndown treatments should be made with a minimum of 15 gallons per acre to achieve adequate coverage of the weeds being treated. Applications volume should be increased to 15-20 gallons per acre or more where weed density is high or heavy crop residue levels are present. When making burndown applications to emerged weeds, the addition of adjuvants such as COC, NIS, or MSO to the spray mixture can be used to enhance the burndown activity of the application. Refer to product labels for use rates and instructions. Refer to rates in Table 1 or Table 2. Use the higher labeled rate in the soil type for longer spring residual.



**FALL APPLICATION AND SPRING PRE-PLANT BURNDOWN OF BROADLEAF WEEDS**

ARTERIO XL may be used as part of burndown program to provide control or suppression of the following broadleaf weeds. For complete control of emerged weeds follow specific directions under the list of weeds below:

Chickweed <sup>1</sup>	Nightshade species
Dandelion	Pennycress
Garlic, wild	Pigweeds
Henbit	Ragweed, common
Lambsquarters	Ragweed, giant
Lettuce, prickly	Shepherd's-purse
Marestail	Smartweeds, annual
Mustard, tansy	Sunflower
Mustard, wild	Waterhemp species

For Burndown control, pick the appropriate rate from **Rate Table 1 or 2** and apply with:

- For complete burndown of emerged annual grasses or broadleaf weeds or for burndown of weeds not listed above, ARTERIO XL must be tank mixed with: glyphosate, glufosinate, paraquat, 2,4-D or other appropriate burndown herbicides.
- Crop Oil Concentrate (COC) or Methylated Seed Oil (MSO) at 1% v/v 1 gallon per 100 gallons of spray solution, or Non-ionic surfactant (NIS) at 1 qt./100 gallon of spray solution.
- In addition to the specific adjuvants above, other adjuvants may be used if they provide the same or similar functions as those previously mentioned. The addition of other adjuvants or fertilizers such as ammonium sulfate (AMS) may aid in control of weeds when used with appropriate companion herbicides. Consult specific companion herbicides for additional adjuvant, and fertilizer recommendations when applying for burndown of existing vegetation.
- Use flat fan nozzles or other appropriate nozzle types and a minimum of 10 gallons of water per acre. Where dense vegetation or heavy crop residues are present, increasing the spray volume to 15-20 gallons per acre or more may improve spray coverage and weed control.
- To select the proper tank mix product, identify the weeds which need to be controlled and consult the product labels to determine which product is needed. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- For instructions on how to prevent spray drift see section on SPRAY DRIFT MANAGEMENT on page 8.

### STORAGE AND DISPOSAL

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

#### **Pesticide Storage**

Store product in original container only. Keep container closed when not in use, away from food or feed, fertilizer and other pesticides. Store in a cool dry place and avoid excess heat. Do not store below 30°F degrees.

#### **Pesticide Disposal**

Wastes resulting from the use of this product that cannot be used must be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures. For more information contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

#### **Container Handling**

**Nonrefillable container** - Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: (For containers 50 lbs or less) Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or by other procedures allowed by state and local authorities.

**Returnable/Refillable Containers** - Refill this container with ARTERIO XL only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.**

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

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. To the extent consistent with applicable law, the buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. 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 when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT

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