FOR AGRICULTURAL OR COMMERCIAL USE ONLY. NOT FOR USE BY HOMEOWNERS.

ASULAM 4F

Herbicide

For Post-emergent Weed Control in Sugarcane, Turf, Ornamentals, Christmas Tree Plantings and Non-Cropland

ACTIVE INGREDIENT:

Sodium salt of asulam (methyl sulfanilylcarbamate)*	36.2%
OTHER INGREDIENTS	63.8%
TOTAL	100.0%

* Equivalent to 33.1% asulam or not less than 3.34 lbs. per gallon.

Keep Out of Reach of Children

CAUTION

FIRST AID	
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information	

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

EPA Reg. No. 70506-139-5905
EPA Est. No. 5905-FL-006
AD 062410

NET CONTENTS: ☐ 2.5 gallons (9.46 L)
☐ 30 gallons (113.55 L)
☐ Bulk _____

Manufactured for:
Helena Chemical Company
225 Schilling Boulevard, Suite 300
Collierville, TN 38017

Manufactured in the United Kingdom

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate), and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL STATEMENTS

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

USER SAFETY RECOMMENDATIONS

Users should leave the treated area, remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should 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 chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. Surface water contamination may occur in areas with poorly draining soils and little or no buffers or in areas where drainage systems flow directly to surface water.

Do not apply to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not clean equipment or dispose of equipment washwater in a manner that will contaminate resources. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

DIRECTIONS FOR USE

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

Read entire label before using this product.

AGRICULTURAL USE REQUIREMENTS

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil or water is coveralls, chemical-resisant gloves, and shoes plus socks.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Store at temperature above 20°F.

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

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container.

[for containers less than 5 gallons] Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse 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, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[for containers greater than 5 gallons] Triple rinse or pressure rinse as follows:

Triple rinse: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Pressure rinse: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after flow begins to drip. 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.

GENERAL INSTRUCTIONS AND INFORMATION

APPLICATION PROCEDURES

Do not apply ASULAM 4F herbicide through any type of irrigation systems.

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 regulations.

SPRAY DRIFT

Sensitive Areas: This herbicide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or the applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

INFORMATION ON DROPLET SIZE: (This section is advisory in nature and does not supersede the mandatory label requirements) The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions below).

CONTROLLING DROPLET SIZE: (This section is advisory in nature and does not supersede the mandatory label requirements)

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

BOOM LENGTH: (This section is advisory in nature and does not supersede the mandatory label requirements) For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT: (This section is advisory in nature and does not supersede the mandatory label requirements) Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT: (This section is advisory in nature and does not supersede the mandatory label requirements) When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops etc.).

WIND: (This section is advisory in nature and does not supersede the mandatory label requirements) Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY: (This section is advisory in nature and does not supersede the mandatory label requirements) When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS: (This section is advisory in nature and does not supersede the mandatory label requirements) Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by

ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and move 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.

SUGARCANE

ASULAM 4F herbicide can be applied to either plant cane or cane grown from stubble. Apply ASULAM 4F as a water mix spray for ground applications. Use 15 to 100 gallons of water per acre, depending on local practice. For aerial application, ASULAM 4F herbicide should be mixed in 3 to 5 gallons of water per acre, except in Hawaii, where 5 to 10 gallons of water per acre should be used.
Addition of an adjuvant cleared for use on growing crops to the ASULAM 4F herbicide water mix spray will improve weed control when environmental conditions are not optional. Use either a non-ionic surfactant containing a minimum of 80% active ingredient at the rate of 1 to 2 quarts per 100 gallons (0/25 to 0/5% V/V) of water mix spray or a crop oil concentrate containing 80 to 85% paraffin based petroleum oil and 15 to 20% non-ionic surfactant at the rate of 4 quarts per 100 gallons (1% V/V) of water mix spray.

The rates of ASULAM 4F herbicide given below are for broadcast applications. For banded application, reduce the rate proportionally to the width of the band according to the following formula:

$$\frac{\text{BAND WIDTH (inches)}}{\text{ROW WIDTH (inches)}} \times \text{Broadcast Rate} = \text{Band Rate/Acre}$$

For spot treatments, use a 5% v/v ASULAM 4F spray (1 gallon per 20 gallons of water). Do not exceed 8 pints of ASULAM 4F per acre per treatment.

Single Application Per Growing Season

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Raoulgrass or Itchgrass (*Rottboellia exaltata*)	Apply when the grass is 8 inches tall or less (addition of surfactant is necessary).	8 pints/acre
Johnsongrass (*Sorghum halepense*)	Apply when the grass is 12 to 18 inches tall. Johnsongrass should be actively growing and the average air temperature should be at lest 60°F or higher.	
Paragrass or Californiagrass (*Brachiaria mutica* or *Panicum purpurascens*)	Apply when the grass is no more than 6 to 8 inches tall.	
Crabgrass (*Digitaria* spp.)	If treatment is made before the grass reaches seed head formation then the lower rate should be used. If the grass is in early seed head formation then the higher rate should be used.	6 to 8 pints/acre
Alexendergrass (*Brachiaria planteginea*) Barnyardgrass (*Echinochloa crusgalli*) (Broadleaf panicum (*Panicum adspersum*) Foxtail (*Setaria* spp.) Goosegrass (*Eleusine indica*)	If treatment is made when the grass is 6 to 8 inches tall or less, then the lower rate should be used. If the grass is greater than 8 inches tall, then the higher rate should be used.	

Two Applications Per Growing Season

This may be required when initial weed infestations are heavy and/or when rhizome Johnsongrass is present. Two applications may also be used when treating weed species which germinate at different times during one growth season.

WEED SPECIES	SPECIAL INSTRUCTIONS	1ST APPLICATION	2ND APPLICATION
Crabgrass (*Digitaria* spp.)	At each application the grass should be treated before seed head formation.	6 to 8 pints/acre	6 to 8 pints/acre
Raoulgrass or Itchgrass (*Rottboellia exaltata*)	At each application the grass should be 8 inches tall or less (Addition of surfactant is necessary).	8 pints/acre	8 pints/acre
Johnsongrass (*Sorghum halepense)*	At each application the grass should be between 12 and 18 inches tall.	8 pints/acre	8 pints/acre

RESTRICTIONS AND PRECAUTIONS: Sugarcane

- ASULAM 4F herbicide should be used when the weeds are actively growing.
- Cover crops may be planted if plowed under and not grazed.
- The following pre-harvest intervals for ASULAM 4F herbicide applications to sugarcane must be observed: 1) Mainland U.S.A. (except Louisiana) – 140 days; 2) Louisiana only – 100 days; 3) Hawaii – 400 days.
- Do not graze or feed sugarcane fodder and forage to livestock.
- Cultivation and/or fertilizer applications or any other cultural practice that disturbs the root system of targeted weed species may result in less than optimum control when applying ASULAM 4F herbicide. These practices are not recommended within 7 days prior to or within 7 days after applications of ASULAM 4F herbicide.
- Differences in crop tolerance to ASULAM 4F among Sugarcane varieties have been reported in Louisiana. Contact your local County Agent or University Extension Specialist for further information.

NON-CROPLAND

ASULAM 4F herbicide may be used as a postemergent treatment to control weeds on non-cropland areas such as:

Boundary fences
Fence rows
Highway and roadside rights-of-way
Lumberyards
Pipeline rights-of-way
Railroad rights-of-way and yards
Storage areas and industrial plant sites
Utility rights-of-way and yards
Warehouse lots

A surfactant may be added to the spray solution at 0.25% by volume. (Use an approved non-ionic surfactant).

Apply ASULAM 4F as a single water-mix spray for ground applications using 20 to 100 gallons of solution per acre, depending on local practice, to control the following weed species. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Crabgrass (*Digitaria* spp.)	Apply before the grass reaches seed head formation.	1 gal/acre
Johnsongrass (*Sorghum halepense)*	Apply when the grass is 18 inches tall. Use the higher rate in well established heavy	

	infestations. For spot treatment in Hawaii, use the higher rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Paragrass or Californiagrass (*Brachiaria mutica* or *Panicum purpurascens*)	Apply before the grass reaches seed head formation. For spot treatment in Hawaii, use the same rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Western bracken (*Pteridium aquilinum var. pubescens*)	Apply when the fern is in full frond.	7 to 8 pints/acre

CHRISTMAS TREES

ASULAM 4F herbicide may be used as a postemergent treatment in Christmas Tree Plantings where Douglas Fir, Grand Fir, Noble Fir or Scotch Pine are grown. Do not graze or feed foliage from treated areas to livestock. ASULAM 4F herbicide should be applied as a water mix spray. For ground application, use a minimum of 20 gallons of solution per acre. Do not use a wetting agent with ASULAM 4F herbicide. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Western bracken (*Pteridium aquilinum var. pubescens*)	Apply after bud break and hardening or firming of new tree growth. Bracken should be in full front prior to treatment.	1 gal/acre

TURF (Sod Farms Only)

ASULAM 4F herbicide can be applied on St. Augustinegrass and Tifway 419 Bermudagrass turf. Apply one application per season postemergence to the weeds listed below. Use 20 to 50 gallons of water per acre in the spray solution.

TURF SPECIES	WEED SPECIES	RATE
St. Augustinegrass	Bullgrass (*Paspalum supinum*), Crabgrass (*Digitaria sp.*), Goosegrass (*Eleusine indica*)	5 pints/acre
Tifway 419 Bermudagrass	Sandbur (*Cenchrus sp.*)	

Do not use a surfactant. Do not apply to turf which is under stress or freshly mowed.

ORNAMENTALS

ASULAM 4F herbicide can be applied as a single, postemergent, broadcast application on the following ornamentals:

JUNIPERS		YEWS
Juniperus andorra	Juniperus horizontalis	Taxus cuspidate
Juniperus chinensis	Juniperus litoralis	Taxus media
Juniperus conferta	Juniperus sabina	Podocarpus macrophyllus

Treatment should be made within a minimum of 20 gallons of water per acre. Do not use a surfactant.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Barnyardgrass (*Echinochloa crusgali*) Crabgrass (*Digitaria sp.*) Fall Panicum (*Panicum dichotomiflorum*) Foxtails	Apply when the weeds are between the stages of early seedling and early seed head formation.	1 gal/acre

(*Setaria sp.*) Goosegrass (*Eleusine indica*) Horseweed (marestail) (*Conyza canadensis*)		

Local conditions may affect the use of this chemical. Consult State Agricultural Extension or Experiment Station weed specialists for specific recommendations for local weed problems and for information on possible lower dosages.

CONDITIONS OF SALE – WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

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

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

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

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

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