



PRECAUTIONARY STATEMENTS  
Hazards to Humans and Domestic Animals

DANGER

Keep out of reach of children. Corrosive. Causes eye damage. Do not get in eyes. Wear goggles or face shield when handling concentrate. Avoid contact with skin, eyes or clothing. Harmful if swallowed or absorbed through the skin.

First Aid: If splashed in eyes, flush thoroughly with water. In case of contact, flush with water.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flames.

DIRECTIONS FOR USE

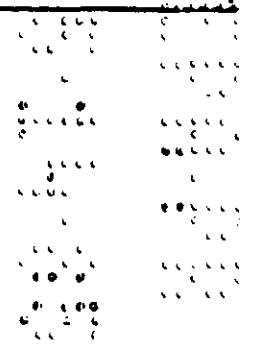
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

STORAGE AND DISPOSAL

Avoid freezing. Store above 40°F. Do not contaminate water, food, or feed by storage or disposal.

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

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



## GENERAL USE PRECAUTIONS

Applied according to directions and under normal growing conditions, **A** will not harm the treated crop. Over application may result in stunting, crop injury or soil residue. Uneven application or improper soil incorporation of **A** can result in erratic weed control or crop injury. Seedling disease, cold weather, deep planting, excessive moisture, high salt concentration or drought may weaken crop seedlings and increase the possibility of damage from **A**. Under these conditions, delayed crop development or reduced yields may result.

In the arid, irrigated areas of the Western United States — Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming — certain crops are susceptible to injury when planted in soil previously treated with **A**. To avoid such injury, do not plant wheat, barley, rye, other grasses, or onion within 10 months following a **A** application. Milo (grain sorghum), corn, oats, spinach, red beet, sugar beet, and other root crops should not be planted within 12 months following a **A** application.

## GENERAL INFORMATION

**A** is a preemergence herbicide which is soil incorporated to provide season long control of many annual grasses and broadleaf weeds throughout the growing season. Incorporation of **A** helps assure effective weed control. **A** controls weeds as they germinate.

## SOIL TEXTURE GUIDE

The amount of **A** applied will vary with the soil texture. A fine textured soil generally requires more **A** than a coarse textured soil. **A** is not recommended for use on muck or other soils high in organic matter content.

Refer to the following table to determine soil classification.

Soil Texture	Soil Classification
Coarse	Sand
	Loamy sand
	Sandy loam
Medium	Loam
	Silty clay loam*
	Silt loam
	Silt
	Sandy clay loam*
Fine	Clay
	Clay loam
	Silty clay loam*
	Silty clay
	Sandy clay
	Sandy clay loam*

\*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loams are predominately sand or silt, they are usually classified as medium textured soils; if predominately clay, they are usually classified as fine textured soils.

## SOIL PREPARATION

Destroy existing weeds before a **A** application. Chop and thoroughly mix crop residues into the soil to a depth of 4 to 6 inches by deep plowing or discing before a **A** application. Use machinery that breaks up large clods before a **A** application.

## GENERAL MIXING DIRECTIONS

Use the following instructions for mixing **A** Liquid Concentrate (L.C.) alone in water and tank mixed in water.

**General Mixing Instructions in Water Alone:** Start with a clean sprayer. Fill the spray tank  $\frac{1}{2}$  to  $\frac{3}{4}$  full with clean water. Start agitation. Add the correct quantity of **A**, continue agitation, and finish filling the tank.

**General Tank Mix Instructions:** Vigorous, continuous agitation is required for all tank mixes. (Sparger pipe agitators generally provide the best agitation in spray tanks). During filling, to prevent foaming, avoid stirring or splashing air into the mixture by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

**Mixing order:** Fill the tank  $\frac{1}{4}$  to  $\frac{1}{2}$  full with clean water. Start the agitation. Add dry flowables (DF), flowables (F), liquids (L), aqueous suspensions (AS), or wettable powders (WP) to the water and agitate until the product(s) are completely dispersed in the water. Allow additional mixing and dispersion time when using DF products. Continue agitation and fill tank to  $\frac{3}{4}$  full. Add the **A**, mix thoroughly, then add any solutions (S), agitate and finish filling. Maintain agitation from filling through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled material than it is to suspend them originally. A sparger agitator is particularly useful for this purpose.

Read and carefully follow all label instructions for each material added to the tank. Premixing dry and flowable formulations with water (slurrying) and pouring the slurry through a 20 or 35 mesh wetting screen in the top of the tank will help assure good initial dispersion in the tank water. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between fillings. Rinse and continue the spraying operation. Clean tank, lines, and screens thoroughly after use.

## APPLICATION DIRECTIONS

Apply **A** anytime after January 1 when the soil can be worked. Add the recommended amount of **A** to clean water in the spray tank during the filling operation. (See General Mixing Instructions). Apply in 5 to 40 gallons of spray volume per acre (broadcast basis). Use any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. As the amount of spray volume decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Apply **A** to the soil surface and incorporate within the recommended time.

**A** should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result.

## INCORPORATION DIRECTIONS

**A** must be incorporated one time within 8 hours after application, except in certain areas of the Western United States (see Special Note below). A second incorporation is required with most equipment (see below). If **A** is applied to a wet, warm soil surface or if the wind velocity is 10 mph or higher, variable weed control may result from delaying the first incorporation beyond 8 hours in the Eastern United States and 4 hours in the Western United States. Incorporation should place the **A** into the top 2 to 3 inches of the final seedbed. Place **A** to a depth of 3 inches for more effective control of Texas panicum. Generally, incorporation equipment will mix **A** approximately half as deep as the equipment is run. For example, a disc running 4 inches deep will incorporate **A** into approximately the top 2 inches.

**SPECIAL NOTE:** In the Western United States, extremely high temperatures and intense sunlight may be present at the time of application. Therefore, **A** must be incorporated into the soil within 4 hours after application to prevent loss of activity.

## INCORPORATION EQUIPMENT

Use machinery that mixes **A** thoroughly with the soil. Shallow incorporation with implements set to mix **A** less than 2 inches deep in the final seedbed may result in erratic weed control. Use of incorporation equipment not listed below may result in poor or erratic weed control and/or crop injury.

**Recommended equipment includes:**

Disc set to cut 4 to 6 inches deep and operated in 2 different directions at 4 to 6 mph. A tandem or double disc operated one time does not provide adequate incorporation.

Power take off driven equipment (tillers, cultivators, hoes) set to incorporate **A** in the top 2 to 3 inches of the final seedbed. P.T.O. driven equipment should be operated one time at a speed not greater than 4 mph.

**PREPARATION:**

Power take off driven equipment used alone as the incorporation implement in coarse soils may cause an uneven distribution of **A**. This occurs when the wheel track depression is below the penetrating depth of the lines on the tiller. This may result in an excessive amount of **A** in the tractor wheel depression area and poor weed control in the diluted areas.

Where this condition exists, a tandem disc should be used on coarse soils for the incorporation of **A**.

**CULTIVATION AFTER PLANTING**

Soil treated with **A** may be shallowly cultivated or rotary hoed without reducing the weed control activity of **A**. Do not cultivate deeper than the **A** treated layer of soil since this may bring untreated soil to the surface and poor weed control may result.

**WEEDS AND GRASSES CONTROLLED BY BALAN**

**A** will not control established weeds.

**GRASSES CONTROLLED**

- Annual blue grass (*Poa annua*)
- Barnyardgrass (*Echinochloa sp.*)
- Watergrass
- Broadleaf signalgrass (*Brachiaria platyphylla*)  
(See Page 3 for special instructions)
- Crabgrasses (*Digitaria spp.*)
  - Large crabgrass
  - Smooth crabgrass
- Crowfootgrass (*Dactyloctenium aegyptium*)
- Fall panicum (*Panicum dichotomiflorum*)
  - Spreading panicgrass  
(See Page 3 for special instructions)
- Foxtails (*Setaria spp.*)
  - Bottlegrass
  - Bristlegrass
  - Giant foxtail
  - Green foxtail
  - Pigeongrass
  - Robust foxtail
  - Yellow foxtail
- Goosegrass (*Eleusine indica*)
  - Silver crabgrass
  - Silvergrass
  - Wiregrass
  - Yardgrass
- Johnsongrass (*Sorghum halapense*)
  - Seedling only
- Junglerice (*Echinochloa colonum*)
- Ryegrass (*Lolium multiflorum*)
  - Annual ryegrass
  - Italian ryegrass
- Sandbur (*Cenchrus incertus*)
  - Burgrass
- Texas panicum (*Panicum texanum*)
  - Buffalograss
  - Colorado grass

**BROADLEAF WEEDS CONTROLLED**

- Carpetweed (*Mollugo verticillata*)
- Chickweed (*Stellaria media*)
- Florida purslane (*Richardia scabra*)
  - Florida pusley
  - Mexican clover
  - Pusley
- Knotweed (*Polygonum aviculare*)
- Lambsquarters (*Chenopodium album*)
- Pigweeds (*Amaranthus spp.*)
  - Carelessweed
  - Prostrate pigweed
  - Redroot
  - Rough pigweed
  - Spiny pigweed
- Purslane (*Portulaca oleracea*)
- Redmaids (*Calandrinia caulescens*)

**CROP RECOMMENDATIONS:**

These recommendations are given as the broadcast rates per acre of **A**. For band application, use proportionately less.

**ALFALA, BIRDSFOOT TREFOIL, CLOVER (Alsike, Ladino, Red)**

Apply and incorporate **A** before seeding at a broadcast rate per acre of 3 quarts on coarse and medium soils and 4 quarts on fine soils. Do not apply after seeding.

**LETTUCE (Direct Seeded)**

Apply and incorporate **A** before seeding at a broadcast rate per acre of 3 quarts on coarse and medium soils and 4 quarts on fine soils. Do not apply after seeding.

**PEANUT- **A** Alone:**

Apply and incorporate **A** before planting at a broadcast rate per acre of 3-4 quarts on coarse and medium soils and 4 quarts on fine soils. Use the higher rate on coarse and medium soils where the weed population may be heavy.

**PEANUT- **A** /Dual<sup>1</sup> Tank Mix:**

The **A** /Dual tank mix controls the annual grasses and broadleaf weeds listed for **A** alone and these additional weeds:

- Foxtail millet
- Prairie cupgrass
- Red rice
- Southwest cupgrass
- Witchgrass
- Yellow nutsedge

Follow recommended procedures for soil preparation, incorporation and cultivation of **A**.

Ground application: Apply **A** /Dual in 10 to 40 gallons of spray volume per acre.

Aerial application: Apply **A** /Dual in a minimum of 5 gallons of spray volume per acre. **A** /Dual may be applied and incorporated up to 14 days prior to planting.

**Broadcast Rates Per Acre:**

Soil Texture	Dual 8E		
	<b>A</b> (Quarts)	Less than 3% O.M. (Pints)	3% O.M. or Greater (Pints)
Coarse	3-4	1½-2	2
Medium	3-4	2-2½	2-2½
Fine	4	2-2½	2½-3

**NOTE:** Follow all cautions and precautions on the Dual label. Dual<sup>1</sup> - metolachlor, Ciba-Geigy

**PEANUT- **A** /Vernam<sup>5</sup> Tank Mix:**

**A** /Vernam controls the annual grasses and broadleaf weeds listed for **A** alone and this additional weed: Nutsedge (Nutgrass)

Follow recommended procedures for soil preparation and cultivation of **A**. Apply **A** /Vernam in 10 to 40 gallons of spray volume per acre. **A** /Vernam can be applied up to 10 days prior to planting. Incorporate immediately to prevent loss of the Vernam. Follow suggested incorporation procedures for **A**.

**Broadcast Rates Per Acre:**

Soil Texture	<b>A</b>		Vernam 7E (Pints)
	(Quarts)	(Pints)	
Coarse	3-4	2½	
Medium	3-4	2½	
Fine	4	3	

**NOTE:** Follow all cautions and precautions on the Vernam label.

Vernam<sup>5</sup> - vernolate, Stauffer Chemical Company

A = 1.5 LB. BENFLURACIN E.C.

**PEANUT-Fall Panicum and Broadleaf Signalgrass Control:**

**Fall panicum control-** *A* Alone: in the states of Alabama, Florida, Georgia, North Carolina, South Carolina and Virginia, apply *A* at a broadcast rate of 4 quarts per acre on both coarse and medium soils.

**Fall panicum control-** *A* /Vernam: For additional weed control, apply a broadcast rate of 4 quarts of *A* and 2½ pints of Vernam 7E on coarse soils and 4 quarts of *A* and 3 pints of Vernam on medium soils. Follow incorporation directions for *A* /Vernam above.

**Broadleaf signalgrass control:** Apply *A* at a broadcast rate of 4 quarts per acre on both coarse and medium soils.

**TOBACCO-(Transplant Burley and Dark Tobacco)**

Apply and incorporate *A* before transplanting at a broadcast rate per acre of 3 quarts on coarse and medium soils and 4 quarts on fine soils. Set plants so that roots extend below the *A* -treated layer of soil.

*A* is usually compatible with Ridomil®. To assure the compatibility of *A* with Ridomil, pour the products into a small container of water in the correct proportions. After thorough mixing, let stand for five minutes. If the combination remains mixed or can be remixed readily, the mixture is compatible.

**NOTE:** Read the Ridomil label carefully before using. Ridomil® - metalaxyl, Ciba-Geigy

**APPLICATION WITH DRY BULK FERTILIZER**

Dry bulk fertilizer may be impregnated or coated with *A*. Application of dry bulk fertilizer impregnated with *A* has provided weed and grass control equal to the same rates of *A* applied in liquid carriers.

Follow *A* label recommendations regarding rates per acre, crops, incorporation directions, special instructions, cautions and special precautions.

Individual state regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

**LIMITATIONS**

Apply a minimum of 200 pounds per acre of dry fertilizer impregnated with *A* at the recommended rate. Most dry fertilizers can be used for *A* impregnation. When coated ammonium nitrate and limestone are used alone, do not impregnate with *A*. These materials will not absorb the herbicide. Blends containing mixtures of these materials can be impregnated.

**IMPREGNATION**

Use any closed drum, belt, ribbon or other commonly used dry bulk fertilizer blender. Nozzles used to spray the *A* onto the fertilizer should be placed to provide uniform spray coverage. If less than 6 pints of *A* are mixed per ton of fertilizer, add water to the *A* to give a total volume of at least 6 pints per ton.

**RATES**

Check the crop section to determine the rate per acre of *A*. Calculate the amount of *A* to be impregnated on a ton of dry bulk fertilizer based on the amount of fertilizer which will be applied per acre.

Quarts of *A* Per Acre  $\times \frac{2000}{\text{lbs. Fertilizer}}$  = Quarts of Fertilizer Per Ton of Fertilizer

**APPLICATION**

Spread the fertilizer/chemical mixture normally with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

**INCORPORATION**

Follow recommended incorporation procedures for *A*.

**APPLICATION WITH LIQUID FERTILIZERS**

*A* may be mixed with most liquid fertilizer materials. Combination of *A* with solutions and suspension type fertilizers has provided weed and grass control equal to the same rates of *A* applied in water. Follow *A* label recommendations regarding rates per acre, crops, incorporation directions, special instructions, cautions and special precautions.

Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

**LIQUID FERTILIZER MIXING INSTRUCTIONS**

**Liquid Concentrate in Liquid Fertilizer:** Liquid concentrates, such as *A*, can be mixed with liquid fertilizers. In all cases, continuous agitation is required to prevent the *A* from rising to the surface as an oily layer. When necessary, (see Liquid Fertilizer Compatibility Test below), a compatibility agent can be used to cause the *A* to emulsify properly (i.e., have a milky appearance rather than oily layer). The use of compatibility agents is especially important when tank mixing liquid concentrates (LC) with dry flowables (DF), wettable powders (WP), flowables (F), liquids (L), aqueous suspensions (AS), or solutions (S) in liquid fertilizer. If the emulsion is not properly formed, and the L.C. rises to the surface of the fertilizer as an oil ("oils out"), the oil may combine with the wettable powder, flowable, or suspension to form oily curds (viscous phase) which is difficult to redisperse. Any one of the compatibility agents listed below is helpful in causing liquid concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as 1½ to 2 pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the liquid concentrate. Read the label on the compatibility agent and follow the directions.

- 1. Sponto 168D (Witco Chemicals Co., Chicago, IL)
- 2. Compat (Farm Chemicals, Inc., Aberdeen, NC)
- 3. Unite (Hopkins Ag Chemical, Madison, WI)
- 4. T-Mutz 734-2 (Thompson-Hayward Chemical Co.)
- 5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
- 6. Amoco Spray Mate™ (Amoco Oil Co., Chicago, IL)
- 7. Kem-Link (Universal Coop, Minneapolis, MN)

Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in plain water.

**Testing for Tank Mix Compatibility in Liquid Fertilizers:** Liquid concentrates alone or in tank mixture with dry flowables (DF), wettable powders (WP), liquids (L), flowables (F), aqueous suspensions (AS), or solutions (S) may not combine properly with some fluid fertilizer materials. Small quantities should always be tested before full-scale mixing. This will determine whether a compatibility agent is needed, and which agent does the best job. The seven agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.

*A* = 1.5 LB. BENFLURACIN E.C.

- 1. Put 1 pint of the liquid fertilizer in a quart jar.
- 2. Add 1 to 4 teaspoons of the DF, WP, L, F or AS formulation (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
- 3. After dispersing the materials (Step 2), add 3 to 4 teaspoons of the *A* to the jar and shake well. Add solution herbicides to the mixture last and agitate. Observe the jar for about 10 minutes. If the materials rise to the surface and form a thick layer (oily curds) which will not redisperse when agitated, a compatibility agent is needed. If the mixture is easily redispersed to its original state with slight agitation, no agent is needed but good agitation must be provided in the fertilizer spray tank.
- 4. If the need for a compatibility agent is shown in Step 3: using a clean quart jar, start at Step 1 above, add 1/2 teaspoon of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one half hour or longer. If slight separation does occur, 2 to 3 inversions of the jar should give a uniform remix. If oily curds form which will not redisperse, more agent or another agent should be tried.

Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be relatively easy to keep mixed with gentle agitation of the jar.

**APPLICATION**

Spread the fertilizer/chemical mixture normally with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

**INCORPORATION**

Follow recommended incorporation procedures for *A*.

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

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, the failure to follow the label directions, or good application practices, all of which are beyond the control of Setre or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. Setre 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 Setre. Setre 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 warrant shall be implied by law.

The exclusive remedy against Setre for any cause of action relating to the handling or use of this product is a claim for damage and in no event shall damages or any other recovery of any kind against Setre exceed the price of the product which causes the alleged loss, damage, injury, or other claim. Setre shall not be liable and any and all claims against Setre are waived, for special, indirect, incidental, or consequential damages or expense, of any nature, including, but not limited to, loss of profits or income, whether or not based on Setre's negligence, breach of warranty, strict liability in tort or any other cause of action.

Setre 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.

*A = 1.5 LB BENFLURALIN E.C.*