RESTRICTED USE PESTICIDE

Due to Acute Toxicity

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Guthion® Solupak

50% WETTABLE POWDER CROP INSECTICIDE

IN WATER SOLUBLE PACKETS

For effective economical insect control.

ACTIVE INGREDIENT:

O,O-Dimethyl *S*-[(4-oxo-1,2,3-benzotriazin-3(4*H*)-yl)methyl]phosphorodithioate	50%
INERT INGREDIENTS:	50%
	100%

Keep water soluble packets in this container and store in a cool dry place, but not below freezing (32F). Protect from heat. Keep away from open flame. Do not heat. Entire inner packets dissolve in water. After opening outer bag, drop the required unopened inner packets into spray tank as directed. Do not excessively handle water soluble packet or expose it to moisture, since this may cause breakage.

DEALERS SHOULD SELL IN ORIGINAL PACKETS ONLY

CONTAINS 5 ONE-POUND WATER SOLUBLE PACKETS

EPA Reg. No. 3125-301
TOTAL NET CONTENTS: 5 Pounds

STOP - Read the label before use.
Keep out of reach of children.

POISON

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

ACCEPTED
MAR 1 2000
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under Reg. No. 3125-301

STATEMENTS OF PRACTICAL TREATMENT

Organophosphate

In case of poisoning, call a physician immediately. Have patient lie down and keep quiet. **If swallowed:** Vomiting should be induced. Administer water freely and induce vomiting by giving one dose (½ oz. or 15 mL) of syrup of ipecac. If vomiting does not occur within 10 to 20 minutes, administer second dose. If syrup of ipecac is not available, induce vomiting by sticking finger down throat. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Professional medical assistance should be secured immediately. **If on skin:** Remove contaminated clothing and wash skin immediately with soap and warm water. **If eyes are contaminated:** Wash with flowing water for at least 15 minutes.

To Physician: ANTIDOTE - Administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. 2-PAM is also antidotal and may be administered in conjunction with atropine.

Compound inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 12 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated symptomatically.

SYMPTOMS OF POISONING: A sense of "tightness" in the chest. Sweating. Contracted pupils. Stomach pains. Vomiting and diarrhea.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Fatal if swallowed, inhaled, or absorbed through the skin. Do not get in eyes or on skin. Do not breathe spray mist. Spray operator should work to windward to stay out of drift or mist. Do not contaminate feed or foodstuffs. Keep out of reach of children and domestic animals.

Personal Protective Equipment

Airblast applicators must be in fully enclosed cabs or if not in fully enclosed cabs, applicators must wear:

- Chemical resistant suit over long-sleeved shirt and long-legged pants
- Chemical-resistant hood

- Full-face respirator or half-faced respirator with a face shield
- Chemical-resistant footwear plus socks

Applicators (other than airblast) and other handlers (other than mixers and loaders) must wear:

- Coveralls over long-sleeved shirt and long-legged pants
- Water-proof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)

Mixers and loaders must wear:

- Coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant apron when mixing or loading
- For exposures in enclosed areas, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides(MSHA/NIOSH) approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)
- For exposures outdoors, dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering controls statements:

Human flagging is prohibited.

- When handlers use enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Water-soluble packets, when used correctly, qualify as a closed loading system under the WPS.
- The enclosed cabs must be used 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:

User should:

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

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and wildlife.

For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of wastes. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Protective information may be obtained from your Cooperative Agricultural Extension Service.

RESTRICTIONS

Do not use on other crops used for food or forage. Use only according to label directions. Application at rates above those shown may result in illegal crop residues. Do not graze livestock in treated orchards or groves for 21 days after treatment.

ROTATIONAL CROPS

Do not plant root crops other than those with registered azinphos-methyl uses in azinphos-methyl treated soil sooner than 6 months after the last application. Do not plant any other crop other than those with registered azinphos-methyl uses in treated soil sooner than 30 days after last application.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) listed in the chart below.

CROP	ACTIVITY	REI
Tree Crops	*Hand Thinning*	*14 days*
(except citrus)	Hand Harvesting	14 days
	Propping	48 hours
	Mowing	48 hours
	Irrigating	48 hours
	Scouting	48 hours
	Other activities	48 hours
Citrus	Hand Thinning	30 days
	Hand Harvesting	30 days
	Propping	48 hours
	Mowing	48 hours
	Irrigating	48 hours
	Scouting	48 hours
	Other activities	48 hours
Grapes	Girdling	21 days
	Cane throwing	21 days
	Leaf pulling	21 days
	Cane cutting	21 days
	Bunch thinning	21 days
	Hand harvesting	21 days
	Other activities	48 hours
All other crops	*Mowing*	*48 hours*
	Irrigating	48 hours
	Scouting	48 hours
	All other activities	*4 days*

Any REI listed as 48 hours is increased to 72 hours in outdoor areas where average rainfall is less than 25 inches a year.

Any REI listed as 4 days is increased to 5 days in outdoor areas where average rainfall is less than 25 inches a year.

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 over long-sleeved shirt and long pants*
- Waterproof gloves
- *Chemical-resistant footwear plus socks*
- Protective eyewear
- *Chemical-resistant headgear for overhead exposure*

IMPORTANT: Read these entire Directions and Conditions of Sale before using GUTHION SOLUPAK 50% Wettable Powder crop insecticide.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE THE DIRECTIONS FOR CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED FOR A RANGE OF WEATHER CONDITIONS SIMILAR TO THOSE WEATHER CONDITIONS THAT ARE ORDINARY AND CUSTOMARY IN THE GEOGRAPHIC AREA WHERE THE PRODUCT IS USED. 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, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO OTHER CROPS, ANIMALS, MAN, OR THE ENVIRONMENT. BAYER OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL WEATHER, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF BAYER AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

This product may not be reformulated or used under State Special Local Need Registrations for use on sugarcane, ornamentals, Christmas trees, shade trees, or forest trees.

MIXING: *The enclosed packets containing* GUTHION SOLUPAK *insecticide are* **water soluble**. *Do not allow* packet to become wet prior to adding to the spray tank. Do not handle with wet hands. Reseal outer bag to protect remaining packets.

To prepare the spray mixture, drop the required number of unopened packets, as determined under "Recommended Application", into the spray tank while filling with water to the desired level. Operate the agitator while mixing. Depending on the water temperature and the degree of agitation, the packets should be completely dissolved within approximately 5 minutes from the time they were added to the water.

COMPATIBILITY: GUTHION SOLUPAK is physically compatible with many registered pesticides and liquid fertilizers. Do not use PVA packets in a tank mix with products that contain boron or release free chlorine. The *resultant reaction of PVA and boron or free chlorine is a plastic which is not soluble in water or solvents.* When considering mixing GUTHION SOLUPAK with other pesticides or with liquid fertilizer, first contact your supplier. For further information, contact your local Bayer representative. If your supplier and Bayer representative have no experience with the combination you are considering, you should conduct tests to determine physical compatibility.

To determine physical compatibility, pour the recommended proportions of each chemical with the same proportion of water as will be present in the chemical supply tank into a suitable container, mix thoroughly and allow to stand for five minutes. If the combination remains mixed, or can be remixed readily, the mixture is considered physically compatible. When mixing wettable powder or dry flowable formulations, add and disperse these first, then add liquid pesticides. Conduct another compatibility test at concentrations which will be present in the irrigation lines. If there is any separation which cannot be remixed readily, Bayer recommends that the combination not be used.

Combination should be kept agitated and should be applied immediately. Do not allow combination to sit for prolonged periods in the chemical supply tank or irrigation lines.

4/12

DOSAGE: Use specified dosage of GUTHION SOLUPAK in the amount of water necessary to give complete coverage of foliage. Determine the **total amount** of wettable powder to be added to the spray tank based on the rates under "Recommended Application". For each **one pound** of wettable powder to be added to the spray tank use one 1 pound packet. For example, if it is determined that 2 pounds of GUTHION SOLUPAK should be added to the spray tank, add two 1-pound packets. The type of equipment used will determine the concentration required; however, use of these packets is not recommended for making highly concentrated mixtures such as used in aircraft spraying.

SPRAYING: Backpack or hand wand spraying is prohibited. Work to windward. When low volumes of spray are applied complete coverage and thorough application are essential for most effective results. Schedule applications in accordance with local conditions. Consult your State Agricultural Experiment Station or Extension Service for specific use information in your area.

USE OF THIS PRODUCT IN GREENHOUSES OR ENCLOSED AREAS IS PROHIBITED.

CLOSED COCKPITS ARE REQUIRED FOR ALL AERIAL APPLICATIONS.

CHEMIGATION

GUTHION SOLUPAK may be applied through recommended types of irrigation systems to many crops. The REMARKS section for each crop lists the types of applications allowed. If application through irrigation systems is not listed in the REMARKS section for a crop, GUTHION SOLUPAK may not be applied to that crop through irrigation systems.

Type of Irrigation Systems: Apply GUTHION SOLUPAK only through sprinkler, including center pivot, lateral move, side roll, overhead solid set, or low pressure sprinkler irrigation systems. **For control of foliage-feeding pests, use GUTHION only in systems which provide uniform wetting of the foliage.** Do not apply GUTHION SOLUPAK through any other type of irrigation system **or systems which wet only the soil.**

GENERAL DIRECTIONS FOR ALL RECOMMENDED TYPES OF IRRIGATION SYSTEMS

Uniform Water Distribution and System Calibration: The irrigation system must provide uniform distribution of treated water. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

The system must be calibrated to uniformly apply the rates specified for chemigation application for specific crops. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Chemigation Monitoring: A person knowledgeable of the chemigation system and responsible for its operations, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Drift: Do not apply when wind speed favors drift beyond the area intended for treatment.

Required System Safety Devices: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point when pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Using Water from Public Water Systems: DO NOT APPLY GUTHION SOLUPAK THROUGH ANY IRRIGATION SYSTEM **PHYSICALLY CONNECTED** TO A PUBLIC WATER SYSTEM. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly services an average of at least 25 individuals daily at least 60 days out of the year.

GUTHION SOLUPAK may be applied through any of the recommended types of irrigation systems which may be **supplied** by a public water system **only if** the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Posting Requirements: This sign is in addition to any sign posted to comply with the Worker Protection Standard. Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to the following requirements: Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive areas. The signs shall be printed in English.

Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2-1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

Posting required for chemigation does not replace other posting and reentry interval requirements for farm worker safety.

Compatibility: When mixing with other chemicals refer to Compatibility section elsewhere on this label.

Agitation: For application of GUTHION SOLUPAK alone, a chemical supply tank is necessary for pre- mixing. For application of GUTHION SOLUPAK alone or in combination with liquid fertilizer or other chemicals, constant strong mechanical or hydraulic agitation must be maintained in the chemical supply tank during the entire period of application.

Chemical Supply Tank Dilution: When a chemical supply tank is used, you must determine the required amounts of GUTHION SOLUPAK to mix in the tank.

The amount of GUTHION SOLUPAK needed equals the number of pounds of GUTHION SOLUPAK to be applied per acre multiplied by the number of acres to be chemigated.

The amount of solution needed equals the gallons of solution delivered per hour by the injection pump multiplied by the number of hours chemigation will take place.

For example, if you want to apply 2 pounds of GUTHION SOLUPAK per acre to 130 acres in 20 hours and your injection pump delivers 15 gallons per hour, you need: 2 pounds GUTHION SOLUPAK per acre X 130 acres = 260 pounds of GUTHION SOLUPAK. And, you need: 15 gallons per hour X 20 hours = 300 gallons of suspension = 300 gallons of water.

Cleaning the Chemical Injection System: In order to accurately apply pesticides, the chemical injection system must be kept clean; free of chemical or fertilizer residues and sediments. Refer to your owners manual or ask your equipment supplier for cleaning procedure for your injection system.

Flushing the Irrigation System: At the end of the application period, allow time for all lines to flush the pesticide through all nozzles or emitters before turning off irrigation water. To ensure the lines are flushed and free of pesticides, a dye indicator may be injected into the lines to mark the end of the application period.

SPRINKLER IRRIGATION SYSTEMS

All directions and requirements under the GENERAL DIRECTIONS AND REQUIREMENTS FOR ALL RECOMMENDED TYPES OF IRRIGATION SYSTEMS section of this label must be followed for sprinkler irrigation systems.

In addition, the following directions apply to sprinkler irrigation systems:

Do not apply when wind speed favors drift beyond the area intended for treatment.

It is recommended that nozzles in the immediate area of control panels, chemical supply tanks, pumps and system safety devices be plugged to prevent chemical contamination of these areas.

Center-Pivot and Automatic-Move Linear Systems: Inject the specified dosage per acre continuously for one complete revolution or move of the system. DO NOT USE END GUNS. For a foliar application, the system should be run at maximum speed. For a soil application, the system should be run at a slower speed with application in at least 1/4 inch of water.

Solid Set and Manually Controlled Linear Systems: For foliar application, injection should be during the last 30 to 60 minutes of regular irrigation period **or** as a separate 30 to 60 minute application not associated with a regular irrigation. For soil treatment, application should be in at least 1/4 inch of water. DO NOT USE END GUNS.

REQUIREMENTS FOR REDUCING SPRAY DRIFT

Do not apply under conditions where possible drift to unprotected persons or to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption can occur.

1. For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or rotor diameter.
2. Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure.
3. For aerial applications, spray should be released at the lowest height consistent with efficacy and flight safety. Applications more than 10 feet above the crop canopy should be avoided.
4. Make aerial or ground applications when the wind velocity favors on-target product deposition (approximately 3 to 10

6/12

mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.

5. Do not make aerial or ground applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
6. Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
7. Avoid spraying under any conditions that may result in drift on an unprotected person(s) or occupied dwelling.
8. All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.

To address Integrated Pest Management Issues: Local integrated management systems are available for controlling the pests on this label. Such systems include the use of biological control agents, alternative chemicals and scouting. Consult your local Extension specialist or other consultant for further details.

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FIELD CROPS	Leafhoppers	1/2 to 1
Alfalfa	Alfalfa weevil	3/4 to 1
Birdsfoot trefoil	Egyptian alfalfa weevil	
(East of the Mississippi River Only)	Alfalfa plant bug Fleahopper Grasshoppers Lygus bugs Spittlebugs	1
Apply specified dosage per acre by air or ground equipment. Use at least 10 gallons of water per acre with ground equipment and at least 1 gallon of water per acre for aerial application. It may be necessary to use 20 to 25 gallons of water per acre on heavy growth for control of alfalfa weevil or Egyptian alfalfa weevil with ground equipment. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the **CHEMIGATION** section of this label. Only one application per cutting may be made regardlessof rate, formulation or method of application used. Not for use on alfalfa grown for seed. Do not apply within 14 days of harvest at the rates of 1/2 to 3/4 pounds per acre or within 16 days of harvest at the rate of 1 pound per acre. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.		

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FRUIT NOTE: It is suggested that when treating fruit during the bloom period, bee keepers should be warned well in advance to remove hives a safe distance from orchards to be treated.		
FRUIT **Apples** **Crab apples** **Pears** **Quince**	Aphids* Apple maggot Codling moth European apple sawfly Eye-spotted bud moth Forbes scale Fruittree leaf roller Green fruitworm* Leafhoppers* Mealybug* Orange tortrix Pear midge Plum curculio Putnam scale Red-banded leaf roller San Jose scale* Stink bug Tarnished plant bug*	2 to 3 [1/2 to 3/4 lb per 100 gallons]
Apply specified dosage per acre by air or ground equipment in sufficient water for good coverage. Up to 9 pounds GUTHION SOLUPAK may be applied per crop season. Allow at least 7 days between applications and 14 days between last application and harvest. For apples, if last application is greater than 2 pounds per acre (1/2 pound per 100 gallons), allow 21 days between last application and harvest. Applications made at rates above 2 pounds per acre can only be made in conjunction with an Integrated Pest Management (IPM) program. GUTHION SOLUPAK is compatible with dormant and summer oils which may be added to apple and pear sprays in accordance with local recommendations. Application by chemigation or "fixed-wing" aircraft is prohibited. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.		
Cherries	Eye-spotted bud moth Forbes scale Fruit flies Fruittree leaf roller Lesser peach tree borer Plum curculio San Jose scale* Cherry leaf miner Mineola moth	1-1/2 [1/2 pound per 100 gallons]
Apply specified dosage per acre as a full coverage spray. Up to 6 pounds of GUTHION SOLUPAK may be applied per acre per crop season. Allow at least 14 days between applications and 15 days between last application and harvest. California: Apply post-harvest only. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.		

7/12

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FRUIT continued **Nectarines** **Peaches** (Eastern U.S.)	Aphids* Cottony peach scale European fruit lecanium scale Forbes scale Lesser peach tree borer Oriental fruit moth Peach twig borer Peach tree borer *Platynota flavidana* leaf roller Plum curculio Redbanded leaf roller San Jose scale* Stink bug Thrips Tarnished plant bug Terrapin scale *Walnut scale* White peach scale	1-3/4 to 2-1/4 [1/2 to 5/8 lb per 100 gallons]

Apply specified dosage per acre as a full coverage spray. Allow at least 14 days between applications.

A total of 6-3/4 pounds per acre per crop season may be applied to nectarines, or peaches.

Allow at least 21 days between last application and harvest.

For control of peach tree borer, apply 2 or 3 sprays to trunk from ground to scaffold limbs, timed with moth flight.

For control of scale, apply when crawlers are present.

GUTHION SOLUPAK is compatible with dormant and summer oils which may be added to peach sprays in accordance with local recommendations.

Application by chemigation or "fixed-wing" aircraft is prohibited.

Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

Nectarines **Peaches** (West of the Rocky Mountains)	Lesser peach tree borer Oriental fruit moth Peach twig borer Peach tree borer *Platynota flavidana* leaf roller Plum curculio Redbanded leaf roller Stink bug Thrips Tarnished plant bug	3 to 4

Apply specified dosage per acre. Allow at least 14 days between applications. A total of 6-3/4 pounds per acre per crop season may be applied to nectarines, or peaches.

Allow at least 21 days between last application and harvest.

For control of peach tree borer, apply 2 sprays to trunk from ground to scaffold limbs, timed with moth flight.

Application by chemigation or "fixed-wing" aircraft is prohibited

Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FRUIT continued **Plums** **Prunes** (Eastern U.S.)	Aphids* Codling moth Eye-spotted bud moth Forbes scale Fruittree leaf roller Lesser peach tree borer Orange tortrix Peach tree borer Peach twig borer Plum curculio Redbanded leaf roller San Jose scale* Stink bug Tarnished plant bug* Tussock moth	1-3/4 to 2-1/2 [1/2 to 5/8 lb per 100 gallons]
	American plum borer	3

Apply specified dosage per acre as a full coverage spray. A total of 6-3/4 pounds per acre per crop season may be applied to plums and prunes.

Allow at least 10 days between applications. Allow at least 15 days between last application and harvest.

For control of scale, apply when crawlers are present.

GUTHION SOLUPAK is compatible with dormant and summer oils which may be added to prune sprays in accordance with local recommendations.

Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

Plums **Prunes** (West of the Rocky Mountains)	Codling moth Eye-spotted bud moth Fruittree leaf roller Lesser peach tree borer Orange tortrix Peach tree borer Peach twig borer Plum curculio Redbanded leaf roller Stink bug Tarnished plant bug* Tussock moth	2 to 4
	American plum borer	3 to 4

Apply specified dosage per acre. A total of 6-3/4 pounds per acre per crop season may be applied to plums and prunes.

Allow at least 10 days between applications. Allow at least 15 days between last application and harvest.

Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

8/12

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FRUIT ***continued*** **Blackberries Boysenberries Loganberries Raspberries**	Leafhoppers Leaf rollers	1/2
	Leaf miners	5/8
	Aphids*	5/8 to 1
	Apply specified dosage per acre to foliage using approximately 200 gallons of water for good coverage. Do not apply more than twice per season, nor within 14 days of harvest. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
	Obscure root weevil	1
	For control of root weevil prior to harvest apply specified dosage per acre to lower portion of canes and to the soil beneath the plants using approximately 200 gallons of water. Do not apply more than twice per season. Do not make applications within 4 days of harvest. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Blueberries (Eastern and North Central States only)	Blueberry maggot Fruitworms Lecanium scale Plum curculio	1 to 1-1/2
	Apply specified dosage per acre with aerial or ground equipment using sufficient water for good coverage. A total of 3 applications may be made per crop season regardless of rate or formulation used. Allow at least 10 days between applications and at least 7 days between last application and harvest. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Cranberries	Cranberry fruitworm Sparganothis sulfureana Tipworm	1 to 2
	Fireworms	2
	Apply specified dosage per acre by air using sufficient water for good coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 3 applications may be made per crop season regardless of rate or formulation used. Allow at least 14 days between applications and at least 21 days between last application and harvest. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
FRUIT ***continued*** **Citrus fruits**	Aphids* Black scale Brown soft scale Chaff scale Citricola scale Citrus mealybug Citrus root weevil complex Citrus thrips Cottony-cushion scale European brown snail Florida red scale Fruittree leaf roller Fuller rose beetle Glover scale Orange tortrix Purple scale Snow scale Western tussock moth Whiteflies	2-1/2 to 4
	California red scale Yellow scale	4
	Apply specified dosage per acre as a full coverage spray. Allow 30 days between last application and harvest. A total of 2 applications may be applied per fruit year regardless of rate or formulation used. The citrus root weevil complex includes sugarcane rootstalk borer (apopka weevil), fuller rose beetle, little leaf notcher, and two species of blue green citrus root weevil. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Grapes	Grape berry moth Grape can girdlers Grape mealybug Leafhoppers* Redbanded leaf roller Thrips Grape leaf skeletonizer	1-1/2 to 2
	Apply specified dosage per acre as a full coverage spray. A total of 3 applications may be made per crop season regardless of rate or formulation used. Allow at least 14 days between applications. Allow at least 21 days between last application and harvest. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Strawberries	Aphids* Meadow spittlebug Oblique-banded leaf roller Obscure root weevil Omnivorous leaf tier Pea leaf weevil Small black (grass) weevil Strawberry leaf roller Whitefly	1
	Apply specified dosage per acre as a full coverage spray using sufficient water for good coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 4 applications may be made per crop season regardless of rate or formulation used. Allow at least 5 days between applications and at least 5 days between last application and harvest. Restricted-entry interval – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
NUTS **Almonds**	Peach twig borer Navel orangeworm	3 to 4
	Apply specified dosage per acre as an aerial, ground concentrate or dilute application. Use at least 20 gallons per acre by aircraft and up to 400 gallons per acre by ground equipment. Applications are limited to two post-bloom sprays per season. **Alternate Row Spraying**: Alternate rows may be sprayed. However, due to the presence of untreated areas, satisfactory control may not be obtained. For reduction of pest numbers to occur, all rows must be treated within 10 days or less. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
	Peach twig borer Navel orangeworm	2 + 2
	Split Application: On large trees where coverage is difficult to obtain, an aerial application followed by a ground application may be made. In order to achieve control at this rate, two applications must be made within 10 days. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
All Applications: Allow at least 28 days between post-bloom sprays at 3 to 4 lbs per acre or the first spray of a split application. The last application may be made up to 28 days before harvest. Do not graze livestock in treated groves for 21 days after treatment. Applications may not be made within 25 feet of an aquatic site (lakes, reservoirs, rivers, permanent streams, marshes, estuaries, natural ponds, or ponds used for commercial fishing).		
Filberts (Pacific Northwest only)	Apple mealybug Filbert worm Filbert aphid Filbert leaf roller	3 to 4
	Apply specified dosage per acre as a full coverage spray. A total of 3 applications may be made per crop season regardless of rate or formulation used. Allow at least 14 days between applications and at least 45 days between last application and harvest. Do not graze livestock in treated groves for 21 days after treatment. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table *in the Agricultural Use Requirements.*	

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
NUTS **continued** **Pecans**	Aphids* Fall webworm Hickory shuckworm Leaf miners May beetles Pecan casebearer Southern green stinkbug Spittlebugs Twig girdlers Walnut caterpillars	3 to 4
	Apply specified dosage per acre as a full coverage spray. A total of 3 applications may be made per crop season regardless of rate or formulation used. Allow at least 7 days between applications. Allow at least 45 days between last application and harvest. Livestock may be grazed in treated groves after a 21-day post-treatment interval. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Pistachios (CA & AZ only)	Navel orangeworm	5
	Apply specified dosage per acre as a full coverage spray using not more than 500 gallons of finished spray per acre by ground rig or in less than 20 gallons of water per acre by aircraft. Do not apply through any type of irrigation system. Make one application at the onset of hull splitting but prior to 10% hull split. Do not treat within 21 days of harvest. Do not graze livestock in treated groves for 21 days after treatment. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Walnuts	Codling moth Filbertworm Navel orangeworm Walnut husk fly Red-humped caterpillar	3 to 4
	Apply specified dosage per acre as a full coverage spray by air or ground. A total of 3 applications may be made per crop season regardless of dosage or formulation used. Allow at least 14 days between applications except in the case of split application described below. Allow at least 21 days between last application and harvest. Do not graze livestock in treated groves for 21 days after treatment. Restricted-entry interval (REI) – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

(continued on next page)

10/12

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
NUTS continued **Walnuts**	Codling moth Filbertworm Navel orangeworm Walnut husk fly Red-humped caterpillar	2 + 2
	Split Application: On large trees where coverage is difficult to obtain, an aerial application followed by a ground application may be made. In order to achieve control at this rate, the two applications must be made within 10 days. Allow 21 days from the last application until harvest. *Restricted-entry interval (REI) – The REI is* specific by crop and activity, see the Table *in the Agricultural Use Requirements.*	

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
VEGETABLES **Broccoli** **Brussels sprouts** **Cabbage (Includes tight-heading varieties of Chinese cabbage)** **Cauliflower**	Aphids* Cabbage looper Diamondback moth Imported cabbageworm	1 to 1-1/2
	Apply specified dosage per acre in sufficient water for complete coverage. Do not apply within 7 days of harvest for Brussels sprouts, 15 days of harvest for broccoli and cauliflower, nor within 21 days of harvest for cabbage. Do not exceed more than 3 applications per season. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
	Cabbage maggot	1/4 to 3/8
	Mix specified dosage in 50 gallons of water. Apply 4 to 6 ounces of this emulsion per plant at or immediately after transplanting. Restricted-entry interval – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
	Cabbage maggot (Direct seeded fields in California only)	1-1/2
	Apply specified dosage per acre in sufficient water for uniform distribution. Mix in upper 2 inches of soil prior to seeding or spray in the seed row at planting time. Usually 2 additional sprays are necessary during the growing season, depending on time of year and maggot populations. Do not apply within 21 days of harvest. Do not exceed more than 3 applications per season. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

(continued in next column)

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
VEGETABLES continued **Broccoli** **Brussels sprouts** **Cabbage (Includes tight-heading varieties of Chinese cabbage)** **Cauliflower**	Cabbage maggot (Transplant fields in California only)	1-1/2
	Apply specified dosage in 300 to 400 gallons of water per acre as a soil drench in rows when damage first appears. Additional applications may be necessary. Do not apply within 21 days of harvest. Do not exceed more than 3 applications per season. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Celery	Aphids* Leaf miners Leafhoppers Spittlebugs Tarnished plant bug	1
	Apply specified dosage in 100 gallons of water as a full coverage spray using not more than 200 gallons of finished spray per acre. (This concentration is calculated for conventional hydraulic-type sprayers. When lower volumes of spray are applied per acre with concentrate sprayers, increase the concentration of GUTHION SOLUPAK insecticide in the spray mixture in order to apply amount of GUTHION SOLUPAK Insecticide per acre equivalent to a full coverage spray.) Do not apply within 14 days of harvest. Do not exceed more than 3 applications per season. Restricted-entry interval – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Cucumbers	Spotted cucumber beetle Striped cucumber beetle Western-striped cucumber beetle	1
	Apply specified dosage per acre in sufficient water for complete coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 3 applications may be made per crop season regardless of rate, formulation or method of application used. Allow at least 7 days between applications and at least 4 days between last application and harvest. Restricted-entry interval – The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	
Onions (Green and Dry)	Thrips	1 to 1-1/2
	Apply specified dosage per acre by air or ground equipment in sufficient water for complete coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 3 applications may be made per crop season regardless of rate, formulation or method of application used. Allow at least 7 days between applications for dry bulb onions. Allow at least 10 days between applications for green onions. For dry onions, allow at least 28 days between last application and harvest. For green onions, allow at least 14 days between last application and harvest. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
VEGETABLES continued	Colorado potato beetle	3/4
Potatoes	Banded cucumber beetle Leaf miners	3/4 to 1
	European corn borer Flea beetle Leafhoppers Spittlebugs Tarnished plant bug	1 to 1-1/2
	Tuberworm	1-1/8 to 1-1/2

Apply specified dosage per acre in sufficient water for complete coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 3 applications may be made per crop season regardless of rate, formulation or method of application used. Allow at least 7 days between applications and 7 days between last application and harvest.

Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

NOTE: Resistance of Colorado potato beetle has occurred in some areas. Consult your local Extension Service or Bayer Sales Representative for details.

Tomatoes	Colorado potato beetle	3/4
	Banded cucumber beetle *Drosophila* Green stink bug Leaf miners Whitefly	3/4 to 1
	Aphids* European corn borer Flea beetles Grasshoppers Leafhoppers Thrips	1 to 1-1/2
	Tuberworm	1-1/8 to 1-1/2
	Fruitworm Hornworm Pinworm Yellow-striped armyworm	1-1/2 to 3

Apply specified dosage per acre by air or ground equipment in sufficient water for complete coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 4 applications may be made per crop season regardless of rate, formulation or method of application used. The high rates should be used where heavy infestations of late instar lepidopterous larvae (large worms) and pinworms are present.

Allow at least 7 days between applications. Rate of 1-1/2 pounds per acre or less may be applied up to 4 days prior to harvest. Rates above 1-1/2 pounds require an interval of 14 days between last application and harvest.

Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

NOTE: Resistance of Colorado potato beetle has occurred in some areas. Consult your local Extension Service or Bayer Sales Representative for details.

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
MELONS	Leafhoppers Leaf miners	3/4 to 1
Honeydew Melons **Muskmelon (Cantaloupe)** **Watermelons** **Other Melons**	Rindworms Spotted cucumber beetle Striped cucumber beetle Western-striped cucumber beetle	1

Apply specified dosage per acre in sufficient water to give complete coverage. For application by irrigation systems: Apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label. A total of 3 applications may be made per crop season regardless of rate, formulation or method of application used. Allow at least 5 days between applications and at least 7 days between last application and harvest.

Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
Nursery Stock	Aphids Cerococcus scale Euonymus scale Juniper scale Lace bugs Leafhoppers Mites Olive scale Oystershell scale Pulvinaria scale Thrips	3/4 to 1
	European elm scale Black pine leaf scale	1-1/2 to 2
	Brown soft scale Putnam scale	2
	Apply specified dosage per 100 gallons of water. Spray all foliage surfaces including underside of leaves for complete coverage. For control of black pine leaf, brown soft, European elm and Putnam scales, use the higher rate.	
	European pine shoot moth Nantucket pine tip moth	3/4 to 1-1/2
	Apple Ermine moth Black Vine weevil	2
	Cone midge Cone moth	4
	Apply specified dosage per 100 gallons of water. Time applications to coincide with moth flight when cones are open for pollination. Thorough coverage is necessary for maximum control.	

Under normal conditions, a maximum of 4 applications of GUTHION SOLUPAK may be made. In plants under quarantine, a maximum of 6 applications may be made.

Applications may be made by aircraft, airblast, ground-boom or hydraulic-type sprayers. Application by hand-held equipment or backpack sprayers is prohibited.

Injury to hawthorn or American linden may occur under some conditions.

Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.

12/12

RECOMMENDED APPLICATIONS		
CROP	INSECT	LB GUTHION SOLUPAK
Southern Pine Seed Orchards	Coneworm Seed worm	See Remarks
	Apply by aerial application only; apply specified dosage in not less than one gallon of water per acre. A maximum of 3 applications at a maximum rate of 3 pounds product per acre per application can be made per year. The total product use can not exceed 9 pounds (4.5 pounds a.i.) per acre annually. Thorough coverage of cones is necessary for maximum control. Restricted-entry interval -- The REI is specific by crop and activity, see the Table in the Agricultural Use Requirements.	

* In some areas, these species may have developed resistance to organophosphate insecticides. GUTHION insecticide used alone may not provide satisfactory control in those areas. Consult your local agricultural advisor or cooperative extension service for recommendations.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food and feed. Do not store below freezing (32F). Exposure to moisture or excessive handling of water soluble packets may cause breakage. Store packets in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response Telephone No. is 800-414-0244 or contact Chemtrec at 800-424-9300.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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: Do not use container in connection with food, feed, or drinking water. Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

D - 9447 - 020800

Bayer Corporation
Crop Protection Products
Box 4913
Kansas City, MO 64120-0013
(800) 842-6020
http://uscrop.bayer.com

LABELING FOR ONE POUND PACKET

Guthion Solupak

50% Wettable Powder

Crop Insecticide

ACTIVE INGREDIENT:

O,O-Dimethyl *S*-[(4-oxo-1,2,3-benzotriazin-3(4*H*)-yl)methyl]phosphorodithioate 50%

EPA Reg. No. 3125-301

Keep out of reach of children.

DANGER POISON

(See Outer Package for Complete Use and Handling Directions and Precautions Including Antidote Statement)

SPECIAL LABELING REQUIRED FOR BAGS CONTAINING WATER SOLUBLE PACKETS

Bayer