

10163-220

06-04-2007

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**RESTRICTED USE PESTICIDE  
Due to Reproductive Effects**

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. Direct supervision for this product is defined as the certified applicator being physically present during mixing, loading, equipment repair and equipment cleaning. Certified applicators must ensure that all persons involved in these activities under their direct supervision are informed of the precautionary statements.

ATTENTION: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**MSR™ SPRAY CONCENTRATE**  
**SYSTEMIC INSECTICIDE**  
**FOR EFFECTIVE SYSTEMIC CROP PROTECTION**

<b>ACTIVE INGREDIENT:</b>	<b>% By Wt.</b>
S-[2-(Ethylsulfanyl)ethyl] O,O-dimethyl phosphorothioate.....	25.0%
<b>OTHER INGREDIENTS.....</b>	<b>75.0%</b>
	<b>TOTAL 100.0%</b>

Contains 2 lbs S-[2-(Ethylsulfanyl)ethyl] O,O-dimethyl phosphorothioate per U.S. gallon

(This product contains aromatic petroleum distillates )

**-STOP-**

**READ THE LABEL BEFORE USE**

**KEEP OUT OF REACH OF CHILDREN**  
**WARNING-AVISO**

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.)

**FLAMMABLE! KEEP AWAY FROM HEAT AND OPEN FLAME**

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**WARNING**

Causes moderate eye irritation. May be fatal if swallowed, inhaled or absorbed through the skin. Prolonged or frequently repeated skin contact causes allergic reactions in some individuals. Avoid contact with eyes. Do not get on skin or clothing. Do not breathe spray mist. Avoid contamination of feed or food. **KEEP OUT OF REACH OF CHILDREN.**

See Side/Back Panel for additional precautionary statements.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical-resistance category selection chart.

**Applicators and other handlers must wear:**

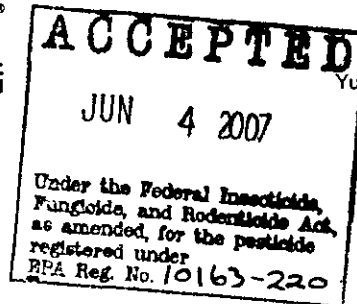
- Coveralls worn over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, 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 product's 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:** 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. Human flaggers must be in enclosed cabs. 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.

**NET CONTENTS 2.5 GALLONS**

EPA Reg. No. 10163-220  
EPA Est. No. 67545-AZ-1



Produced For:  
Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

**USER SAFETY RECOMMENDATIONS**

**Users 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.

**FIRST AID**

**Organophosphate Insecticide**

**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 five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**IF INHALED:** Move the person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**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 further treatment advice.

**Have the product container or label with you when calling a poison control center or doctor or going for treatment.**

**FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT, CALL TOLL FREE: 1-888-478-0798**

**NOTE TO PHYSICIAN:** May cause cholinesterase depression. Atropine sulfate is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine.

**DECLARACIONES DE PRECAUCION  
PELIGROS PARA HUMANOS Y ANIMALES DOMESTICOS  
ADVERTENCIA**

Causa irritación moderada en los ojos. Puede ser fatal si es tragado, inhalado o absorbido a través de la piel. El contacto prolongado y frecuente con la piel puede causar reacciones de alergia en algunos individuos. Evite el contacto con los ojos. Evite el contacto con la piel y la ropa. No inhale los vapores. Evite la contaminación de forrajes y alimentos. **MANTENGASE FUERA DEL ALCANCE DE LOS NIÑOS.**

**EQUIPO DE PROTECCION PERSONAL (EPP)**

Algunos materiales que son químicamente resistentes a éste producto están listados abajo. Si usted quiere mas opciones siga las instrucciones para categoría F de la tabla de EPA sobre categorías de resistencia química.

**Aplicadores y otros manipuladores deben usar:**

- Mameluco (overol) sobre camisa de manga larga y pantalón largo
- Guantes resistentes a productos químicos como lo son de barrera laminada, hule (butilado o nitrilo) o vitón
- Calcetines (medias) y zapatos resistentes a productos químicos
- Protección para los ojos
- Sombrero o gorro resistente a productos químicos para exposiciones o aplicaciones
- Delantal químico-resistente para limpiezas de equipo, mezcla o carga
- Para exposición (aplicación) en áreas cerradas, usar mascarilla (respirador) provista de filtro para vapores orgánicos con un pre-filtro para plaguicidas (aprobado por MSHA/NIOSH con #TC-23C), o un equipo de respiración tipo "canister" aprobado para plaguicidas (aprobado por MSHA/NIOSH con #TC-14G)
- Para exposición (aplicación) en áreas abiertas, usar mascarilla (respirador) con filtros para polvo y niebla (aprobado por MSHA/NIOSH con #TC-21C)

Eliminar la ropa y otros materiales absorbentes que han sido empapados o considerablemente contaminados con el producto concentrado. No reuse estos materiales o ropa. Siga las instrucciones del fabricante para la limpieza y mantenimiento del Equipo de Protección Personal. Si no tiene estas instrucciones, utilice detergente y agua caliente para el lavado. Mantenga y lave el EPP por separado de cualquier otra ropa.

**DECLARACIÓN DE CONTROLES DE INGENIERIA:** Cuando los manipuladores usan sistemas cerrados, cabinas cerradas, o aviones de una manera que reúnan los requerimientos especificados en la Norma de Protección para Trabajadores de plaguicidas agrícolas [40 "CFR" 170.240(d)(4-6)], los requerimientos de EPP para el manejador pueden ser reducidos o modificados conforme a lo especificado en la norma "WPS". Los bandereros deben estar protegidos en cabinas cerradas. Las cabinas cerradas deben ser usadas de una manera que reúnan los requerimientos listados en la Norma de Protección para Trabajadores "WPS" de plaguicidas agrícolas [40 "CFR" 170.240(d)(4-6)]. Los requerimientos de EPP para los manipuladores pueden ser reducidos o modificados como es especificado en los "WPS".

**RECOMENDACIONES DE SEGURIDAD PARA USUARIOS**

- Lavar las manos antes de comer, beber, mascar chicle, fumar, o usar el baño.
- Quitar la ropa inmediatamente si ha habido contacto con el plaguicida. Bañarse bien y ponerse ropa limpia.
- Quitarse el Equipo de Protección Personal inmediatamente después de usar este producto. Lavar los guantes por fuera antes de quitárselos. Tan pronto como sea posible lavarse y cambiar su ropa de trabajo por ropa limpia.

**ENVIRONMENTAL HAZARDS**

This pesticide is 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 adjacent aquatic sites. This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

**PHYSICAL AND CHEMICAL HAZARDS**

Flammable. Keep away from heat and open flame.

**DIRECTIONS FOR USE**

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

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours. The 48 hour REI is increased to 72 hours 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 worn over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or Viton
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure

#### REQUISITOS PARA USO AGRICOLA

Solamente utilice este producto conforme las instrucciones en la etiqueta y conforme a la Norma de Protección del Trabajador, 40 "CFR" Parte 170. Esta norma contiene los requisitos para la protección de trabajadores agrícolas en fincas, bosques, viveros, invernaderos y manipuladores de plaguicidas agrícolas. Contiene los requisitos para capacitación, descontaminación, notificación y ayuda de emergencia. También contiene instrucciones específicas y excepciones pertinentes para lo mencionado en esta etiqueta sobre Equipo de Protección Personal (EPP) e intervalo de entrada restringida. Los requisitos en este cuadro sólo son aplicables a los usos del producto que están contenidos en la Norma de Protección del Trabajador.

No entre ni permita la entrada de trabajadores a las áreas tratadas durante el intervalo de entrada restringida, (IER) de 48 horas. El IER de 48 horas se incrementa a 72 horas en áreas abiertas donde el promedio anual de lluvia es inferior a 25 pulgadas.

Se debe usar el siguiente EPP cuando la Norma de Protección del Trabajador permite entrar a áreas tratadas antes que termine el intervalo de entrada y cuando se necesita tocar lo que ha sido tratado, tal como las plantas, suelo y agua:

- Mameluco (overol) sobre camisa de manga larga y pantalón largo
- Guantes resistentes a productos químicos, así como protector laminado, hule (butilado o nitrilo) o vitón
- Calcetines (medias) y zapatos resistentes a productos químicos
- Sombrero o gorro resistente a productos químicos para exposiciones o aplicaciones

**IMPORTANT:** Read the entire Directions and Conditions of Sale before using MSR Spray Concentrate Systemic Insecticide.

MSR Systemic Insecticide penetrates by absorption and is translocated in the plant. The best time to apply MSR Spray Concentrate is early morning or evening, especially when crops such as alfalfa and cotton are in bloom. This practice will minimize the possibility of beneficial pollinating insects, including honeybees, coming into contact with the spray.

#### MIXING

MSR Spray Concentrate forms an emulsion when diluted with water and is suitable for use in all power-operated ground sprayers and aircraft sprayers. To mix with water, pour the required amount of MSR Spray Concentrate into full amount of water and then agitate. **CLOSED SYSTEMS FOR MIXING AND LOADING MUST BE USED FOR ALL AERIAL APPLICATION AND CHEMIGATION SYSTEMS.** Closed systems for mixing and/or loading this product must be capable of removing the pesticide from the shipping container, rinsing the container and transferring the pesticide and rinsate into mixing tanks and/or application equipment. Protective clothing and equipment specified in the pesticide labeling must also be used when mixing and/or loading this pesticide.

If this product is packaged in WATER-SOLUBLE BAGS, please read and observe the following directions for use:

- To prepare the spray mixture, begin with the spray tank filled at least 1/3 full with water. Turn on spray tank agitation prior to adding water-soluble bags.
- First determine the amount of MSR Spray Concentrate to be added to the spray tank based on the recommended rates. Then determine the number of inner bags necessary to meet that required amount of product. **Note:** Two (2) pints = One (1) quart. *For example: If it is determined that 8 pints should be added to the spray tank, use 4 one-quart inner water soluble-bags.* Where the amount of MSR Spray Concentrate is expressed as a fraction of a bag, prepare the tank mix load to the lower of the nearest whole bag. *For example: If 10 1/2 pints (5 1/4 quarts) are needed, use 5 one-quart bags.* Do not break bags.
- Open the required number of protective outer packages, which must not be added to the spray tank. Only the inner bags containing MSR Spray Concentrate are water-soluble. Avoid exposing inner bags to moisture or allow them to become wet prior to adding to the spray tank. Do not handle inner bag with wet hands.
- Add the required number of intact inner bags of MSR Spray Concentrate to the spray tank while filling with water to the desired level (whenever possible direct the fill water over the top of the packets to increase the rate of solubility).
- Maintain continuous agitation during initial mixing to ensure complete bag dissolution. Depending on the water temperature and the degree of agitation, the packets should be completely dissolved within approximately three to five minutes from the time they were added to the spray tank.
- Once the inner bags have completely dissolved, add other chemicals following conventional mixing order practices.

**IMPORTANT NOTE ABOUT BORON:** Tank-mix solutions containing boron will affect the solubility of the water-soluble film. Thoroughly rinse the spray tank of any boron-containing spray solution prior to adding any water-soluble packets. When preparing tank mixes containing boron, add the correct amount of MSR Spray Concentrate to the spray tank first. Make sure that the water-soluble packets are completely dissolved. Add boron preparations to the spray tank last. High concentrations of boron may cause dissolved water-soluble bag material to precipitate and form insoluble residue in the spray tank system and potentially clog filters and nozzles.

#### DOSAGE

Use specified dosage of MSR Spray Concentrate in the recommended amount of water or the amount of water necessary to give complete coverage of foliage but in no case use less than one gallon of water per acre. The type of equipment used will determine the amount of water required. Use the higher rates of MSR Spray Concentrate per acre under conditions of severe pest pressure.

#### SPRAYING

Work to windward. When low volumes of spray are applied, complete coverage and thorough application are essential for the most effective results. Schedule applications in accordance with local conditions. Consult your State Agricultural Experiment Station or Extension Service for specific use information and for State regulations which may contain additional restrictions or requirements.

**SPRAY DRIFT MANAGEMENT**

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following spray drift management requirements must be followed to avoid off-target movement from aerial applications:

- Do not apply within 150 feet by air or 100 feet by ground of an unprotected person or occupied building.
- All application equipment must be properly maintained and calibrated using appropriate carriers.
- The spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The boom length must not exceed 3/4 of the wing or rotor length (i.e., the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor).
- Nozzles must always point backward and never be pointed downwards more than 45 degrees.
- Do not apply at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
- Make applications when wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when gusts or sustained winds exceed 15 mph.

**RESISTANCE MANAGEMENT**

MSR is an organophosphate insecticide. Based on historical use patterns in some areas, certain pest species listed on this label may have developed resistance to organophosphate insecticides. Consult your local agricultural advisor, State Cooperative Extension Service, or regional Gowan Company representative for recommendations

**USE IN CHEMIGATION SYSTEMS**

**Types of Irrigation Systems:** Apply MSR Spray Concentrate only through sprinkler (including center pivot, lateral move, side roll, overhead solid set or low pressure) irrigation systems. Do not apply MSR Spray Concentrate through any other type of irrigation system. **CLOSED SYSTEMS FOR MIXING AND LOADING MUST BE USED FOR ALL CHEMIGATION SYSTEMS.**

**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 non-uniform 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 operation, 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 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.

**USING WATER FROM PUBLIC WATER SYSTEMS**

**DO NOT APPLY MSR SPRAY CONCENTRATE 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 serves an average of at least 25 individuals daily at least 60 days out of the year.

MSR Spray Concentrate 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 and 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.

**AGITATION**

For application of MSR Spray Concentrate alone, a chemical supply tank is not necessary for premixing since MSR Spray Concentrate mixes well with water in the irrigation line. If a chemical supply tank is used, for application of MSR Spray Concentrate alone or in combination with 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**

If a chemical supply tank is used, you must determine the required amount of MSR Spray Concentrate and water to mix in the tank.

The amount of MSR Spray Concentrate needed equals the number of pints of MSR Spray Concentrate to be applied per acre multiplied by the number of acres to be chemigated.

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

The amount of water needed equals the amount of emulsion needed minus the amount of MSR Spray Concentrate needed.

For example, if you want to apply 1 pint of MSR Spray Concentrate per acre to 130 acres in 20 hours and your injection pump delivers 15 gallons per hour, you need 1 pint MSR Spray Concentrate per acre X 130 acres = 130 pints or 16.25 gallons of MSR Spray Concentrate. And, you need, 15 gallons per hour X 20 hours = 300 gallons of emulsion, minus 16.25 gallons of MSR Spray Concentrate = 283.75 gallons of water.

**Cleaning the Chemical Injection System:** In order to accurately apply pesticides, the chemical injection system must be kept clean, free from chemical or fertilizer residues and sediments. Refer to your owner's manual or ask your equipment supplier for the 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 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 listed 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.** The system should be run at maximum speed.

**Solid Set and Manually Controlled Linear Systems:** Injection should be during the last 30 - 60 minutes of the regular irrigation period or as a separate 30 - 60 minute application not associated with a regular irrigation. **DO NOT USE END GUNS.**

**Low Pressure Irrigation Systems (Mini-sprinkler systems only):** All directions and requirements listed under the **GENERAL DIRECTIONS AND REQUIREMENTS FOR ALL RECOMMENDED TYPES OF IRRIGATION SYSTEMS** section of this label must be followed for low pressure mini-sprinkler systems. In addition, the following directions apply to low pressure irrigation systems.

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

Injection should be during the last 30-60 minutes of a regular irrigation period or as a separate 30 - 60 minute application not associated with a regular irrigation.

For systems which do not wet the entire crop area, apply proportionately less than the specified broadcast rate per acre based on the area wetted. For example, if 50% of the crop area is wetted by the irrigation system, apply one-half of the specified broadcast rate per acre.

**DRIP OR TRICKLE IRRIGATION SYSTEMS**

All directions and requirements listed under the **GENERAL DIRECTIONS AND REQUIREMENTS FOR ALL RECOMMENDED TYPES OF IRRIGATION SYSTEMS** section of this label must be followed for drip or trickle irrigation systems. In addition, the following directions apply to drip or trickle irrigation systems.

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

Injection should generally be during the last 30 to 60 minutes of a regular irrigation period. However, the application interval should be such that at one period of time during the injection, the first and last emitters in the system contain MSR Spray Concentrate treated water. Injection can also be made as a separate application, not associated with a regular irrigation.

When applying MSR through drip or trickle irrigation systems for chemigation, all labeled crops which allow for application by sprinkler irrigation systems will also allow for application by drip and trickle irrigation systems.

**PREHARVEST INTERVAL**

The required days between the last application and harvest are given in

( ) after each crop name.

**RECOMMENDED APPLICATIONS**

**FIELD CROPS**

CROP	PEST	PINTS	COMMENTS
COTTON (14)	Aphids, Thrips, Fleahoppers (Except CA)	½ - 1	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	Mites (Except California)	1½ - 3	
	Aphids, Mites, Lygus Bugs (California only)	1½ - 2	
	<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> <li>Do not graze or feed gin trash to dairy or meat animals.</li> </ul>		
CORN (Sweet only) (See text for PHI)	Aphids, Leafhoppers, Mites, Thrips, Corn Rootworm Beetles	1½ - 2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For control of corn rootworm beetles, apply as needed in accordance with established economic thresholds in your locality. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.

Spanish Onions (bulb) (West of the Mississippi River only) (30)	Thrips (population suppression only)	1 ½ - 2  OR  3 (single application)	Apply specified dosage per acre in sufficient water for complete coverage but not less than 10 gallons per acre. For best results make 2 applications at a minimum of 10-14 day intervals. Use higher rate when pest pressure is high.  For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 1lb ai/acre/season</li> <li>Reentry Interval is 10 days</li> <li>Do not thin mature plants following an application of MSR™ Spray Concentrate</li> <li>Do not hand weed following an application of MSR™ Spray Concentrate</li> <li>Do not harvest by hand following applications of MSR™ Spray Concentrate</li> </ul>		
PEPPERMINT, SPEARMINT (14)	Aphids, Mites	3	Apply specified dosage in at least 20 gals. of water per acre with ground equipment. For established infestations, make 2 applications 10-14 days apart. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
SUGAR BEETS (30)	Aphids, Leafhoppers, Mites	1½ - 3	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
			<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> <li>Do not harvest beets or use beet tops for feed or forage within 30 days of last application.</li> </ul>

**SEED FIELD CROPS**

CROP	PEST	PINTS	COMMENTS
ALFALFA, CLOVER (21)	Aphids, Leafhoppers, Mites, Thrips, Lygus bugs	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. Chaff from seed crop may be used for feed or forage, but do not cut green crop for these purposes. For application by irrigation systems apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> </ul>			

**NON-BEARING FRUITS**

CROP	PEST	PINTS	COMMENTS
APPLES, APRICOTS, CHERRIES, CRAB APPLES, GRAPES, NECTARINES, PEACHES, PLUMS, PRUNES, QUINCES (12 months)	Aphids, Mites	1-1½	As a full coverage spray, apply specified dosage in 100 gals. of water on non-bearing trees; but do not exceed 300 gals. of finished spray per acre per application. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season</li> <li>Do not apply to trees that will bear fruit within the next 12 months.</li> </ul>			

VEGETABLES			
CROP	PEST	PINTS	COMMENTS
BEANS (Lima) (21)	Leafhoppers, Mites Lygus bugs (California Only)	2	Apply specified dosage in at least 4 gals. of water per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not make more than 3 applications per picking season.</li> <li>Do not graze or cut treated vines for feed or forage within 21 days of application.</li> </ul>		
BROCCOLI (7), BROCCOFLOWER (7), BROCCOLINI (7), BRUSSELS SPROUTS (10), CAULIFLOWER (7)	Aphids	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> </ul>		
CABBAGE (Includes tight-heading varieties of Chinese cabbage) (7)	Aphids, Thrips	1½-3	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> </ul>		
CUCUMBERS (3)	Aphids, Mites, Cucumber Beetles	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> </ul>		
EGGPLANT (7)	Aphids, Mites	2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> </ul>		
HEAD LETTUCE (See text for PHI.)	Aphids, Mites	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. The following preharvest intervals based on number of applications apply only to California's spring and summer crops: 1 application—14 days 2 applications—21 days 3 applications—28 days All crops in Arizona and California's fall and winter crops require a 28-day PHI (regardless of the number of applications.) All other states require a 21-day PHI. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> </ul>		
PEPPERS (3)	Aphids	2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> </ul>		
PUMPKINS (14), WINTER SQUASH (14), SUMMER SQUASH (3)	Aphids, Cucumber Beetles	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 1 time per season.</li> </ul>		

MELONS			
CROP	PEST	PINTS	COMMENTS
MUSKMELONS (Cantaloupes) OTHER MELONS (14)	Aphids, Mites, Cucumber Beetles	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 3 times per season.</li> </ul>		
WATERMELONS (7)	Aphids, Mites, Cucumber Beetles	1½-2	Apply specified dosage per acre in sufficient water for complete coverage but not less than one gallon per acre. For application by irrigation systems, apply specified dosage per acre. Follow all directions given under the CHEMIGATION section of this label.
	<ul style="list-style-type: none"> <li>Do not apply more than 2 times per season.</li> </ul>		

NUTS			
CROP	PEST	PINTS	COMMENTS
FILBERTS (Oregon & Washington only) (105)	Aphids	1 pint per 10 trees (average 4 1/2" diameter)	Apply either undiluted or diluted with an equal volume of water. For undiluted application apply 1/3 fluid ounce of product per inch of trunk diameter. For diluted application apply 2/3 fluid ounce of mixture per inch of trunk diameter. One pint of product is sufficient to treat 10 trees averaging 4 1/2 inches in diameter when applied diluted or undiluted. Apply specified dosage with a paintbrush or low pressure sprayer in a band completely around the trunk. On trees with extremely short trunks it may be necessary to treat bases of scaffold limbs in order to apply the correct dosage. Width of the treated band will vary with trunk diameter.
	<ul style="list-style-type: none"> <li>Do not apply more than 1 time per season.</li> <li>Do not use on heavily stressed trees or on young trees with trunk diameters less than 2 inches.</li> </ul>		
WALNUTS (30)	Aphids, Mites	1 1/2	As a full coverage spray, apply specified dosage in 100 gals. of water; but do not exceed 400 gals. of finished spray per acre per application.*
	<ul style="list-style-type: none"> <li>Do not apply more than 1 time per season.</li> </ul>		

TREES			
CROP	PEST	PINTS	COMMENTS
CHRISTMAS TREES AND FIELD GROWN NURSERY STOCK (except California)	Adelgids, Aphids, Leafminers, Gypsy Moths, Mites, Thrips, White Pine Weevil	1 - 2	Apply specified dosage per acre in sufficient water for complete coverage. For aerial application use a minimum of 5 gallons of water per acre.
	Pine Needle Scale	2	
<ul style="list-style-type: none"> <li>Do not make more than 2 applications per season.</li> </ul>			

\*This dosage of MSR Spray Concentrate is calculated for conventional sprayers. When lower volumes of spray are applied per acre, as with low-pressure, low-volume, airplane or mist-type equipment, increase the concentration of MSR Spray Concentrate in the spray mixture in order to apply amount of MSR Spray Concentrate per acre equivalent to a full coverage spray but in no case less than one gallon of water per acre.

**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 treat food crops grown in the greenhouse.

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants in farms, forests, nurseries or greenhouses.

**REENTRY:** Keep unprotected persons out of treated areas until sprays have dried.

**NOTE:** Not for use on plants being grown for sale or other commercial use, for commercial seed production or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior plantscapes, ornamental gardens or parks or on golf courses or lawns and grounds.

**ORNAMENTAL USE BY SOIL INJECTION**

MSR Spray Concentrate is translocated upward in the plant. Due to this method of movement in the plant, non-target or beneficial insects will be unaffected by the use of MSR.

**MIXING**

The preparation of the solution to be used in all soil injection equipment must be done only at a central loading site having all appropriate protective equipment. Mix the recommended amount of MSR Spray Concentrate in the solution to be injected in the soil using adequate agitation to ensure a uniform mixing of the product.

Closed systems for mixing and/or loading this product must be capable of removing the pesticide from the shipping container, rinsing the container and transferring the pesticide and the rinsate into mixing tanks and/or application equipment. Protective clothing and equipment specified in the pesticide labeling must also be used when mixing and/or loading this pesticide.

**DOSAGE**

Use specified dosage of MSR Spray Concentrate in the amount of water necessary to give complete coverage in the area being injected.

**SOIL INJECTION**

When injecting the solution of MSR Spray Concentrate in the soil, splash guards or similar devices should be used. Do not pressurize or turn on the injector unit prior to placing the injector probe in the soil. Inject only the amount of solution which can be absorbed into the soil.

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

**RECOMMENDED APPLICATIONS  
ORNAMENTAL SOIL INJECTION**

CROP	PEST	RATE	COMMENTS
Shade and Ornamental Trees, Shrubs	Aphids, European Elm Scale, Elm Leaf Beetle, Mites, Leafminers	1 - 1.5 fl. oz. per inch of trunk diameter*	Mix product in equal or greater volumes of water as needed for equipment used. Apply using equipment capable of injecting material 6 inches or more below surface and carefully metering volume used to reach recommended dose. Make two times as many probe insertions as inches of diameter at breast height measurement (DBH). (See Note.)

**NOTE:** Applications to non-container trees, shrubs and other ornamentals should be made around the general area of the drip line. Watering of the treated area should follow application to activate and promote uptake of MSR Spray Concentrate. Watering should be sufficient to reach the roots (12 to 24 hours of slow soaking), but should not cause runoff from the treated area. Measurement to determine rate on shrubbery should be obtained by estimating total diameter of individual shrub stems at or near soil level.

\*See MIXING instructions.



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**STORAGE AND DISPOSAL**

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

**PESTICIDE 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:** Non-refillable Plastic: Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities by burning. If burned, stay out of smoke.

**STORAGE:** Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store away from heat and open flame. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle an open container in a manner as to prevent spillage. If container is leaking invert to prevent leakage. If the container is leaking or material spilled for any reason or cause, carefully dam up spilled material to prevent run-off. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type of compounds and dispose of as directed for pesticides above. In spill or leak incidents, keep unauthorized people away.

**FOR 24 HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL CHEMTREC® (800) 424-9300.**

**For other product information, contact Gowan Company or see Material Safety Data Sheet.**

**NOTICE ON CONDITIONS OF SALE**

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

MSR® is a trademark of Gowan Company

**Registrant:**  
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Yuma, AZ 85366

EPA Text Pending: MSR Spray Concentrate (3-07-07)