



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

OCT 11 2007

Ms. Becky Rhodes  
Arysta LifeScience North America Corporation  
15401 Weston Parkway, Suite 150  
Cary, NC 27513

Subject: Midas 50:50  
EPA Registration Number 66330-57  
Amendment dated October 11, 2007

Dear Ms. Rhodes:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable. One copy of the label stamped "Accepted" is enclosed for your records. Please submit one copy of the final printed label before the product is released for shipment.

If you have any questions, you may contact me at (703) 308-9354 or via email at [waller.mary@epa.gov](mailto:waller.mary@epa.gov).

Sincerely,

A handwritten signature in cursive script that reads "Mary L. Waller".

Mary L. Waller  
Product Manager (21)  
Fungicide Branch  
Registration Division (7505P)

Enclosure

**ACCEPTED**

10/11/2007

**Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 66330-57**

**RESTRICTED USE PESTICIDE  
DUE TO ACUTE TOXICITY**

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.

**MIDAS® 50:50**

**Only For Pre-Plant Fumigations of Fields Intended for Commercial Production of Listed Crops and Field-Grown Ornamentals, for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.**

**ACTIVE INGREDIENTS:**

Iodomethane ..... 49.90%

Chloropicrin ..... 49.75%

OTHER INGREDIENTS: ..... 0.35%

**TOTAL:** ..... 100.00%

One gallon weighs 15.9 pounds (7.93 pounds Iodomethane and 7.91 pounds Chloropicrin).

**KEEP OUT OF REACH OF CHILDREN  
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).

**FIRST AID**

<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything to an unconscious person.</li> </ul>

**HOT LINE NUMBERS**

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

**FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE CALL:  
1-866-303-6952 or 1-651-532-8946**

**NOTE TO PHYSICIAN**

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

**EPA Reg. No. 66330-57**

**EPA Est. No.**

**For Product Information Call: 1-866-761-9397**

**Net Contents:**

Manufactured for  
**Arysta LifeScience North America Corporation**  
15401 Weston Parkway, Suite 150  
Cary, NC 27513

**PRECAUTIONARY STATEMENTS**

**HAZARD TO HUMANS AND DOMESTIC ANIMALS**

**Danger. Corrosive.** Causes irreversible eye damage. Corrosive to skin. Causes skin burns. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**SPECIAL NOTE:** This product contains chloropicrin, a poisonous liquid or vapor. Inhalation of vapors may be fatal. Chloropicrin is readily identified by smell. Exposure to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation is evident or higher concentrations may cause painful irritation to the eyes or temporary blindness. Liquid will cause chemical burns to skin or eyes. Do not get on skin, in eyes, or on clothing. Chloropicrin fumigant has the capacity to cause marked irritation to the upper respiratory tract and is a strong lachrymator (tear producing eye irritant). Low concentrations, below those necessary to cause serious systemic intoxication, are capable of causing severely painful eye irritation, hence will not be voluntarily tolerated. However, the effect may be so powerful that a person may become temporarily blinded and panic-stricken and that in turn may lead to accidents.

**AIR CONCENTRATION LEVEL**

Air concentrations of chloropicrin are measured with direct reading colorimetric detector devices, such as Kitagawa tubes, certified for chloropicrin at 0.1 to 16 ppm. Persons involved in the application of MIDAS® 50:50 or in reentry into treated fields must wear an air-purifying respirator when required by the restrictions given in the AGRICULTURAL USE REQUIREMENTS section below. In case of spills or leaks, additional respiratory protection must be worn as detailed under Spill and Leak Procedures.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers** (to include tractor drivers, co-pilots, shovelers, and tarp monitors) **must wear:**

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- Full face shield or safety glasses with brow, temple and side protection is required. DO NOT wear goggles.
- An air-purifying respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C) For tractor drivers and co-pilots the following can be used in lieu of an air-purifying respirator:
  - A tractor equipped with a working-area air-fan dilution system consisting of a ducted fan/blower which provides air flow to the breathing zone of the tractor driver and co-pilot. The fan/blower must be mounted so that the fan/blower intake is at least 126 inches from the ground, and the fan/blower must be capable of operating at a minimum of 1,600 revolutions per minute and producing a minimum flow rate of 3,000 cubic feet of air per minute.

**Other handlers** (to include planters, hole punchers, tarp cutters, tarp removers, and tarp remover drivers) **must wear:**

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- Full face shield or safety glasses with brow, temple and side protection is required. DO NOT wear goggles.

## ENGINEERING CONTROL REQUIREMENTS

MIDAS 50:50 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges, if applicable, shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all cylinder connections and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.
- Check equipment to ensure good condition and integrity prior to each use.

## User Safety Requirements

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly outdoors prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.

- **Respirator Requirements:** When a respirator is required for use with this product, the following criteria must be met consistent with the Worker Protection Standard: (a) Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner; (b) Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134); (c) Respirator users must be trained using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134); (d) Respirator users must be examined by a qualified medical practitioner to ensure physical ability to safely wear the style of respirator to be worn.
- Follow PPE manufacturer's instructions for cleaning/maintaining protective eyewear and respirators.

#### **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 skin thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

#### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water or to areas where surface water is present or to inter-tidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

#### **PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

#### **DIRECTIONS FOR USE**

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

Read all Directions for Use carefully before applying this product.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only Certified Applicators (certified by both the state and Arysta) trained in the proper handling, worker protection, and application of MIDAS 50:50 soil fumigant and workers under their direct supervision may be present in the treatment area during application. An Arysta and state Certified Applicator must be on site and within the line of sight to observe handlers during the application. Handling tasks to be performed under the direct supervision of a Certified Applicator include, but are not limited to the tractor driver, co-pilot, tarp dispenser and shoveler. All such handlers must have appropriate protective equipment, as described in the **PERSONAL PROTECTIVE EQUIPMENT** section. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

#### **Buffer Zone**

The area adjacent to the treated area is referred to as the buffer zone. The buffer zone shall extend from the edge of the treated area in all directions. See Buffer Zone Table. The minimum buffer zone distance shall be 25 feet.

The Certified Applicator supervising the soil fumigation is responsible for the following:

1. Calculating the appropriate size of the buffer zone that must be maintained during the first 48 hours following the end of the application;

2. Establishing and maintaining the buffer zone during the 48 hours following the end of the application; and
3. Ensuring that unprotected workers and bystanders do not enter the buffer zone during the 48 hours following the end of the application. **Exception:** Unprotected workers and bystanders may travel through (but not engage in any activity in) the buffer zone during the 48-hour period, provided their total exposure time in any 24-hour period is 15 minutes or less. However, travel by unprotected workers or bystanders through the fumigated area itself is prohibited during the entire 5-day Entry-Restricted period. Handlers protected with Personal Protective Equipment (PPE) required for early entry into a treated area may work in buffer zones.
4. Ensuring application site has a distinctive buffer zone. The buffer zone of the field to be treated cannot overlap the buffer zone of another field treated within the last 48 hours.
5. The Certified Applicator supervising the soil fumigation must document how the buffer zone was determined, the location of unoccupied sensitive sites within  $\frac{1}{4}$  mile of the fumigated area, and how persons in occupied structures located within the buffer zone were protected. These records must be maintained by the Certified Applicator and by the owner/operator of the fumigated site for at least two years following the fumigation and must be made available, upon request to Federal, State, Tribal, and local enforcement personnel

#### **Determining Buffer Zone Distance**

- Determine the size of the buffer zone using the following Buffer Zone Table.
- The size of the buffer zone will be dependant on the following three factors:
  - The number of field acres that are being treated with MIDAS 50:50.
  - The pounds of MIDAS 50:50 that are being applied per treated acre.
  - Buffer zone reduction credits

### Buffer Zone Table

MIDAS 50:50 Application Rate (Lbs per Treated Acre) <sup>4</sup>	SIZE OF FIELD IN ACRES (Buffer zone distance in feet) <sup>1, 2</sup>							
	Up to 5 Acres	6 – 10 Acres	11-15 Acres	16- 20 Acres	21-25 Acres	26-30 Acres	31-35 Acres	36-40 <sup>3</sup> Acres
125	25	40	75	110	130	145	165	180
150	25	45	90	130	155	175	195	215
175	25	50	100	150	175	200	225	250
200	30	60	120	175	205	235	265	290
210	30	60	120	180	210	240	270	300
240	35	70	140	210	245	280	315	345
300	45	90	175	260	305	345	390	430
350	50	100	200	300	350	400	450	500

1. For rates not listed on this table, use the buffer zone for the next highest rate, or use the following calculation to determine the exact buffer zone:

$$\text{Buffer Zone for Application Rate Not Listed} = \frac{\text{Known Buffer Zone on Table} \times \text{Application Rate Not Listed}}{\text{Rate of Application for Known Buffer Zone}}$$

2. **Buffer Zone Reduction Credits:**

Reduce buffer zone by 10% for each factor listed below:

- Use of flat fume / broadcast application
- Use of High Barrier films. High Barrier films for which credit can be applied must be on an Arysta approved list. Examples of Arysta approved films are Canslit Brand Metalized 1.3 ml, Pliant Blockade® VIF 1.25 ml, and Pliant Metalized 1.0-1.25.
- Application to soils having >3% organic matter. Refer to the USDA or USGS Soil Survey Maps for the treated area that identify the range of organic matter and / or a documented soil survey report that lists range of % organic matter for the treated area. Collection of samples for analysis of soil in the treated area should follow procedures as per USDA's Natural Resource Conservation Services methods. Information on soil sampling can be found at [www.soil.usda.gov](http://www.soil.usda.gov).

For example, if the Buffer Zone is 50 feet and the application qualifies for a buffer zone reduction credit such as use of Metalized film, then the buffer zone can be reduced by 10%, i.e. reduced by 5 feet based on the following calculation: 50 ft – (50 ft X 10%) = 45 feet.

If the application qualifies for two buffer zone reduction credits such as use of a high barrier film and soil with >3% organic matter, then the buffer zone can be reduced by 20%, i.e. reduced by 10 feet based on the following calculation: 50 ft – (50 ft X 20%) = 40 feet.

3. Applications are limited to 40 contiguous acres or less per day on a single site.
4. For raised bed applications, the treated area is the raised bed not the untreated furrows. As an example, if a raised bed field is 50% raised bed (treated) and 50% furrow (untreated), and 350 lbs of MIDAS 50:50 is applied to the field, then the effective application rate to the treated raised bed is 350 lbs per treated acre; and that is the rate that would determine the buffer zone.

**Note: Minimum allowable buffer zone is 25 feet regardless of buffer zone reduction credits.**

### **Buffer Zone for Pre-Plant Deep Injection Auger**

- 25 feet if the application rate is less than 100 lbs MIDAS 50:50 per acre.
- 50 feet if application rate is 100 to 249 lbs MIDAS 50:50 per acre, and
- 100 feet if the application rate is 250 to 350 lbs MIDAS 50:50 per acre.

### **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), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

#### **Entry Restrictions**

Entry into the treated area (including early entry that would otherwise be permitted under the WPS) by any person, other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling, is PROHIBITED from the start of the application until 5 days after application and the air concentration of chloropicrin is measured to be less than 0.1 ppm. Early entry under the WPS is limited to tarp inspection and repair. Non-handler entry is prohibited while tarps are being removed.

See the Buffer Zone section of the label for additional Entry Restrictions.

#### **Notification at Entrances to Treated Areas**

Notify all workers of the fumigation verbally and by posting warning signs at all likely entrances to the treated area for no less than 5 days after application. The signs must bear the skull and crossbones symbol and state:

- (1) "DANGER/PELIGRO"
- (2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
- (3) Iodomethane and Chloropicrin Fumigants In Use
- (4) Date and time of fumigation
- (5) MIDAS 50:50
- (6) Name, address, and telephone number of the Certified Applicator in charge of the application.

Post these fumigant warning signs for treated areas instead of the WPS signs for these applications but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal.

#### **PPE for Reentry during the Entry-Restricted Period**

The PPE required for reentry during the entry-restricted period are:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- An air-purifying respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C).



## GENERAL INFORMATION AND INSTRUCTIONS

This fumigant is a highly hazardous material. All uses of this fumigant are covered under the Worker Protection Standard, and must be conducted in accordance with all of the requirements of the Worker Protection Standard (40 CFR Part 170). It is a restricted use pesticide that must only be used by or under the direct supervision of individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required air-purifying respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

### GENERAL USE PRECAUTIONS

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs.
- Comply with all local ordinances and regulations.
- Do not apply within ¼ mile of any occupied sensitive site such as schools, day care facilities, nursing homes, hospitals, prisons, and playgrounds.
- Applications are limited to 40 contiguous acres or less per day on a single site. .
- Do not apply this product in the presence of ground fog, inversion layers or when the potential for an inversion layer is likely to occur as this may result in product drift outside the treated area. A smoke generator can be used to indicate the presence of an inversion layer if the smoke column does not rise in a vertical pattern. In addition, consult the local weather forecast in the surrounding region for reports of expected inversion layers the day of application and within the 24 hour period following applications of MIDAS 50:50.
- Never fumigate alone. A minimum of two trained employees must be present during handling and application of soil fumigants.
- Certified Applicators are responsible for providing information to all workers involved with the fumigation about precautions and procedures in the safe handling, worker protection and application of MIDAS 50:50 for soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers positioned "upwind" from the container and/or where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking.
- For broadcast/flat fume applications, keep all pets, livestock and other domestic animals out of the treated areas until tarps have been removed.
- For raised bed applications, keep all pets, livestock and other domestic animals out of the treated areas for 5 days and until the air concentration for chloropicrin is less than 0.1 ppm at the edge of the treated area. Most raised bed applications will not result in tarp removal.
- Tarp removal requires a minimum of two trained employees to be present during the operation. Non-handler personnel are prohibited from being present during tarp removal.
- See AGRICULTURAL USE REQUIREMENTS box for details regarding posting and placement of warning signs.
- Do not allow entry by unprotected persons into the fumigated area until the re-entry signs are removed. Such signs must only be removed when the air concentration of chloropicrin is measured to be less than 0.1 ppm at the edge of the treated area and no sooner than 5 days following

application. Signs must remain legible during entire posting period. Also, do not cut tarps for planting until these conditions have been met.

- To determine whether aeration is complete, each fumigated site must be tested and shown to contain less than 0.1 ppm chloropicrin in the air space around the treated site as determined by 3 consecutive measurements taken at the down wind edge of the treated site at least 15 minutes apart.

### **SPILL AND LEAK PROCEDURES**

- Cease all operations if any leak develops in the fumigation system.
- Evacuate everyone from the immediate areas of the spill or leak.
- Approach the area from the upwind side. Work upwind to repair leak(s), if possible.
- For entry into the area to correct the problem, trained personnel must wear loose fitting or well ventilated long-sleeved shirt and long pants, shoes plus socks and either (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TC-19C) or (b) a self-contained breathing apparatus (SCBA)(MSHA/NIOSH approval number prefix TC-13F).
- Only correctly trained and PPE-equipped handlers are permitted to enter. Do not permit entry into the spill or leak area by any other person until the concentration of chloropicrin is measured to be less than 0.1 ppm as specified in section above.
- Allow spilled fumigant to evaporate or to absorb onto vermiculite, dry sand, earth, or similar absorbent material. Such material should be disposed of on site or at an approved disposal facility.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 200 lbs (12.6 gallons of product) to the National Response Center at 1-800-424-8802.

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## **PROCEDURES PRIOR TO, DURING AND AFTER ALL APPLICATIONS**

**Control of Soil Borne Pests:** MIDAS 50:50 controls soil-borne pests including nematodes, insects, weed seeds, and diseases.

Midas 50:50 will control the following pests when present in soil at the time of treatment:

Weed Seeds, including broadleaf weeds such as nutsedge, pigweed, broomrape and lambsquarters, and grasses such as bermudagrass, and annual bluegrass. Effectiveness against hard seed weeds, such as mallow, dodder, morning glory, and certain leguminous weeds may be variable.

Plant-parasitic Nematodes, such as root-knot, root lesion (meadow), cyst, citrus, burrowing, false root-knot, lance, spiral, ring, sting, stubby root, dagger, awl, sheath and stung (stylet) nematodes.

Soil-borne Insects, such as wireworms, cutworms, grubs, rootworms, ants and garden symphylans.

Soil-borne Diseases, such as *Verticillium*, *Pythium*, *Rhizoctonia*, *Phytophthora*, and *Fusarium*.

MIDAS 50:50 is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To reduce the potential for the re-introduction of pests (nematodes, weed seed and disease); avoid the use of irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

**Soil Preparation:** The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment. Little or no plant refuse should be present on soil surface. Prior to application, the soil must be sufficiently moistened to allow seeds to swell (imbibe) in preparation for germination.

**Prior to All Applications:**

- Ensure that application equipment does not contain components made of natural rubber, aluminum, magnesium or their alloys.
- Soil in the treatment area should be reasonably free of trash and in good tilth prior to treatment.
- Do not apply to wet or cold soils (<55°F at a depth of 8 inches).

**During All Applications:**

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least 4 inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

**Following All Applications:**

- To minimize the potential for crop injury, allow the fumigant to dissipate before planting a crop. Seeds may be used as a bioassay to determine if MIDAS 50:50 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin is detectable. See fumigation tables for planting requirements specific to the different application methods.
- Fumigation of highly acidic soils or those high in organic matter can cause ammonia toxicity to plants and or elevated levels of soluble salts in the soil causing phytotoxicity. Analyze soil following fumigation and fertilize as indicated. Avoid those fertilizers using ammonium salts.

(S)

**MIDAS 50:50 PRE-PLANT FIELD FUMIGATION METHODS**

Fumigation with MIDAS 50:50 shall only be performed in accordance with the following three application techniques: 1) Raised Bed Application, 2) Broadcast/Flat Fume Application, or 3) Deep Injection Auger Probe Application (stone fruit, nut trees, vines, and field-grown ornamentals only). Application methods and rates of application for each of these methods are discussed in detail below

**RAISED BED APPLICATION**

- Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed using either:
  - Closing shoes and compaction roller: The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper: The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper: The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less typically performed with a multiple shank applicator.
- Planting shall not occur for at least 10 days after application (refer to RAISED BED SOIL FUMIGATION TABLE below).

**Application Rates for Raised Bed Fumigation:** Rates in the table below are given in pounds of MIDAS 50:50 per broadcast acre. The amount of product applied will be proportionate to the row spacing and width of the raised bed. To calculate the amount of product to be applied, multiply the application rate in lbs MIDAS 50:50/broadcast acre by the appropriate modifier from the Field Rate Modifier Table provided below.

<b>RAISED BED SOIL FUMIGATION TABLE</b>		
<b>Crop</b>	<b>MIDAS 50:50 Per Broadcast Acre<sup>1</sup></b>	<b>Time Between Application and Planting</b>
Field-Grown Ornamentals Peppers Strawberries Tomatoes	<b>Standard Film</b> 200 - 350 lbs/Broadcast Acre (12.6 – 22 gal/Broadcast Acre)	10 – 14 days <sup>2,3</sup>
	<b>Highly Retentive Film</b> 150-200 lbs/Broadcast Acre (9.4 – 12.6 gal/Broadcast Acre)	14 - 21 days when using highly retentive film <sup>4,5</sup>
<b>NOTE:</b>		
<sup>1</sup> For fields infested with Nutsedge and Malva, apply a minimum of 300 lbs/acre (18.9 gal/acre) of MIDAS 50:50.		
<sup>2</sup> Use the longer planting restriction period under conditions of high soil moisture, heavy soils, or rain or persistence of chloropicrin odor in the soil.		
<sup>3</sup> If standard tarpaulins are NOT removed, planting can occur a minimum of 10 days after application, which includes the minimum 24 hours of aeration once the tarps have been cut. If tarpaulins are not cut or aerated prior to planting, the odor of chloropicrin must not be detectable. If odor of chloropicrin is detectable, wait a minimum of 14 days before planting to avoid possible plant injury.		
<sup>4</sup> Use of highly retentive films (e.g. VIF and approved Metallic) will require a rate reduction of up to 40-50% of the maximum use rate. Contact your Arysta LifeScience representative for film selection and rate reduction recommendations and approved films.		
<sup>5</sup> If highly retentive films are not removed, planting can occur a minimum of 14 days after application, which includes the minimum 24 hours of aeration once the tarps have been cut. If the tarpaulins are not cut or aerated, prior to planting, the odor of chloropicrin must not be detectable. If odor of chloropicrin is detectable, wait a minimum of 21 days before planting to avoid possible plant injury.		

**Field Rate Modifier Table for Raised Bed Applications**

<b>Row Spacing (inches)</b>	<b>Bed Width (inches)</b>	<b>Field Rate Modifier</b>
72	40	0.55
72	36	0.50
72	32	0.44
72	30	0.42
72	28	0.39
66	32	0.48
66	30	0.45
66	28	0.42
66	24	0.36
60	30	0.50
60	28	0.47
48	28	0.58

## **BROADCAST / FLAT FUME APPLICATION**

- Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of 6 to 15 inches below the soil surface.
  - Closing shoes and compaction roller: The treated ground must be sealed using closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- Planting shall not occur for at least 10 days after application (refer to BROADCAST / FLAT FUME APPLICATION TABLE).
- This product may be applied by broadcast/flat fume application with standard polyethylene films or highly retentive films, as they become available. Contact your Arysta LifeScience North America representative for information on film selection and rate reduction recommendations.

### **Application Rates for Broadcast/Flat Fumigation:**

<b>BROADCAST/FLAT FUME APPLICATION TABLE</b>		
<b>Crop</b>	<b>MIDAS 50:50 Per Acre<sup>1</sup></b>	<b>Time Between Application and Planting</b>
Field-Grown Ornamentals Peppers Strawberries Tomatoes Turf	200 – 350 lbs/Acre (12.6 – 22 gal/Acre)	10 – 14 days
Stone Fruits (Apricot, Sweet Cherry, Tart Cherry, Nectarine, Peach, Plum, Chickasaw Plum, Damson Plum, Japanese Plum, Plumcot, Fresh Prune) Tree Nuts (Almond, Beech Nut, Brazil Nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (Hazelnut), Hickory Nut, Macadamia Nut (Bush Nut), Pecan, Pistachio, Black Walnut, English Walnut) Vines (Table, Raisin and Wine Grapes)	240 – 350 lbs/Acre (12.6 – 22 gal/Acre)	10 – 14 days <sup>2</sup>
Nurseries (including strawberries, stone fruits, tree nuts and conifer trees)	350 lbs/Acre (22 gal/Acre)	10 – 14 days <sup>2</sup>
<b>NOTE:</b>		
<sup>1</sup> For fields infested with Nutsedge and Malva apply a minimum of 300 lbs/acre (18.9 gal/acre) of MIDAS 50:50.		
<sup>2</sup> If tarpaulins are removed, planting can occur 10 days after application, which includes the minimum 5-day treatment period before tarps are cut plus the minimum of 24 hours of aeration after tarps are cut and before they are removed. Use the longer planting restriction period under conditions of high soil moisture, heavy soils, or rain or persistence of chloropicrin odor in the soil.		

**Tarpaulin Cutting and Removal for Broadcast / Flat Fume Applications:** Following the completion of the application of MIDAS 50:50, the tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block.

If the tarpaulin is removed from the field, removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed (a task which cannot occur until a minimum of 5 days after application, as stated above).

### **PREPLANT DEEP INJECTION AUGER-PROBE APPLICATION**

For Stone Fruit, Tree Nuts, Vines, and Field Grown Ornamental Trees and Shrubs, use 1 – 1.5 lbs of MIDAS 50:50 per injection site, typically to a depth of between 18 to 36 inches below the soil surface, though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of Stone Fruit, Tree Nuts, Vines, and Field Grown Ornamental Trees and Shrubs may begin 14 days after treatment. DO NOT PLANT if the odor of chloropicrin is detectable.

Do not treat more than 230 trees/shrubs/vines per acre per day.

#### **Buffer Zones**

- 25 feet if the application rate is less than 100 lbs MIDAS 50:50 per acre.
- 50 feet if application rate is 100 to 249 lbs MIDAS 50:50 per acre, and
- 100 feet if the application rate is 250 to 350 lbs MIDAS 50:50 per acre.

### **FOOD CROP ROTATION RESTRICTIONS**

Food crops other than strawberry, tomatoes and peppers require a 4 month plant back rotation restriction from the date of fumigant application. Crop rotation to non-food crops or non-bearing fruit or nut trees is not restricted.

### **STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in a dry, cool, well-ventilated area under lock and key. When appropriate to prevent tipping, store cylinders upright, secured to a rack or wall. Post as a pesticide storage area.

**Handling:** Product cylinders shall not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. When cylinder is not in use, close valve by turning clockwise until hand tight, screw safety cap onto valve outlet, and replace protection bonnet.

**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.

**Return of Containers:** This pesticide container, whether full or partially used, is the property of the manufacturer or distributor where it was purchased and must be returned to the distributor of origin. Do not ship containers without safety caps or valve protection bonnets. Containers shall never be refilled by the consumer or used for any other product or purpose.

**FOR 24-HOUR CHEMICAL EMERGENCY (spill, leak, fire or accident) ASSISTANCE:**

Call CHEMTREC at 1-800-424-9300

### Warranty and Disclaimer Statement

1. The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Such risks may arise from weather conditions, soil factors, off-target movement, unconventional farming techniques, the presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of Arysta LifeScience North America Corporation ("Arysta"), and can cause crop injury, injury to non-target crops or plants, ineffectiveness of the product, or other unintended consequences. To the extent consistent with applicable law, all such risks shall be assumed by the user or buyer.
2. Arysta warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.
3. This warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to Arysta, and is subject to the inherent risks described above. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ARYSTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ARYSTA, MANUFACTURER, AND SELLER DISCLAIM AND SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE, HANDLING, APPLICATION, STORAGE, OR DISPOSAL OF THIS PRODUCT OR FOR DAMAGES IN THE NATURE OF PENALTIES, AND THE USER AND BUYER WAIVE ANY RIGHT THAT THEY MAY HAVE TO SUCH DAMAGES. NO AGENT, REPRESENTATIVE OR EMPLOYEE OF ARYSTA IS AUTHORIZED TO MAKE ANY WARRANTY, GUARANTEE OR REPRESENTATION BEYOND THOSE CONTAINED HEREIN OR TO MODIFY THE WARRANTIES CONTAINED HEREIN.**
4. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE TOTAL LIABILITY OF ARYSTA, MANUFACTURER, AND SELLER, SHALL BE LIMITED TO THE PURCHASE PRICE PAID, OR AT ARYSTA'S ELECTION, THE REPLACEMENT OF THE PRODUCT.**

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