

19713-298

12/23/2011

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Luz Chan
1700 Channel Avenue
P.O. Box 13327
Memphis, TN 38113-0327

DEC 23 2011

Subject: Drexel Phume Soil Fumigant
EPA Reg. No. 19713-298
Phase 2 RED Mitigation Amendment Label Dated May 26, 2011
EPA Decision Number 459116

Dear Ms. Chan:

The amended label referred to above, submitted in connection with reregistration of metam sodium under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable provided the following label revisions are made and the following conditions are met:

LABEL REVISION

1. Page 10
 - a. Remove the text box around the heading titled "Precautionary Statements."
2. Page 7
 - a. For ease of read, place a line in between the individual crop subgroups under "Use Sites".
3. Page 10
 - a. Under Respirator Fit Testing, Medical Qualification, and Training, add a blank line before the last sentence of the section, starting with "Upon request..."
4. Page 12
 - a. Add a blank line before the beginning of the Soil Conditions, Injection Depth, and Soil Sealing section under the Shank Application GAPs.
5. Page 13
 - a. Delete the following text in the last bullet of the Soil Conditions, Injections Depths, and Soil Sealing section: "(Bedded applications only. Tarps are prohibited for shank broadcast applications of Phume)."
6. Page 20

- a. Under the GAPs for Center Pivot and Later Move Applications, in the first bullet under Wind Speed, add the word "move" after "lateral".
- 7. Page 21
 - a. Under the GAPs for Center Pivot and Later Move Applications, in the second bullet under Soil Conditions, delete "for Sprinkler System" so that the sentence reads as follows: "Except when applying over cover crops as set forth in the Product Instructions, crop residue..."
- 8. Page 24
 - a. Under the GAPs for Solid Set Sprinkler Applications, in the second bullet under Soil Conditions, delete "for Sprinkler System" so that the sentence reads as follows: "Except when applying over cover crops as set forth in the Product Instructions, crop residue..."
- 9. Page 35-36
 - a. In the Calculating the Broadcast Equivalent Application Rate section:
 - i. Make sure all fonts are at least 12pt. All fonts in the entire labeling must be at least 12 pt font size.
 - ii. The images should be black and white, not shaded gray.
- 10. Page 45
 - a. Under Product Information, delete "(plastic, paper, or fabric)" and add an "a" before "tarp" so that the sentence reads as follows: "The activity of this product is increased by the use of a tarp spread loosely over the treated areas and secured to prevent removal by wind."
 - b. Under Chemigation of this Product, delete "traveler, big gun".
- 11. Page 50-60
 - a. Make sure all font sizes in the buffer zone tables are at least 12 pt. All fonts in the entire labeling must be at least 12 pt font size.

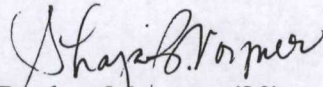
CONDITIONS

- 1. EPA has determined that the risk mitigation measures on the revised label for this product are necessary to adequately protect human health and the environment. Therefore, pursuant to 40 CFR § 152.130(d), EPA has decided that no product bearing previously approved labeling may be sold or distributed (released for shipment) by its registrant after December 1, 2012. Wherever state approval is required for sale or distribution of this product with this new labeling, EPA strongly encourages you to submit an application to the state authority as soon as possible. You should be aware that the Agency does not intend to modify the December 1, 2012, deadline because of any failure to obtain state approvals.
- 2. Submit one copy of the final printed label that incorporates the required changes before the product is released for shipment.

One copy of the label stamped "Accepted with comments" is enclosed for your records. If you have any questions, please contact Jose Gayoso by phone at (703) 347-8652 or via email at gayoso.jose@epa.gov or Shaja Joyner by phone at (703) 308-3194 or email at joyner.shaja@epa.gov.

Sincerely,

Shaja B. Joyner

A handwritten signature in cursive script that reads "Shaja B. Joyner".

Product Manager (20)

Fungicide Branch

Registration Division (7504P)

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RESTRICTED USE PESTICIDE

Due to Acute Inhalation Toxicity to Humans

For retail sale to and use by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification.



Phume

Soil Fumigant

A Soil Fumigant Solution For Crops Listed On This Label.

May be applied by the listed methods of application to suppress and/or control soil borne pests which attack the listed crops. Controls or suppresses weeds such as Bermudagrass, Chickweed, Dandelion, Ragweed, Henbit, Lambsquarter, Pigweed, Watergrass, Amaranths species, Johnsongrass, Nightshade, Wild Morningglory and Purslane; Nematodes and Symphylids; soilborne diseases such as Rhizoctonia, Pythium, Phytophthora, Verticillium, Sclerotinia, Oak root fungus, and Club root of Crucifers.

ACTIVE INGREDIENT:

Sodium methyldithiocarbamate (anhydrous)* 32.7%

OTHER INGREDIENTS: 67.3%

TOTAL: 100.0%

*Contains 3.18 lbs. Metam Sodium per gallon.

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.)

See First Aid on Page 2

EPA Reg. No. 19713-298
EPA Est. No. 19713-XX-XXX

Net Content: _____

MANUFACTURED FOR:
DREXEL CHEMICAL COMPANY
P.O. Box 13327
Memphis, TN 38113-0327

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298SP-1211*P

FIRST AID

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF INHALED:

- Move person to fresh air.
- If 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 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 a poison control center or doctor.
- Do not give anything by mouth to an unconscious or convulsing person.

EMERGENCY INFORMATION

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

FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:

Transportation: Call CHEMTREC at 1-800-424-9300.

Other: Call the National Pesticide Information Center (NPIC) at 1-800-858-7378.

Note to Physician: Possible mucosal damage may contraindicate the use of gastric lavage. This product may pose an aspiration pneumonia hazard.

ACCEPTED
 with COMMENTS
 In EPA Letter Dated
DEC 23 2011
 Under the Federal Insecticide,
 Fungicide, and Rodenticide Act,
 as amended, for the pesticide
 registered under EPA Reg. No.
19713-298

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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes skin damage. May be fatal if absorbed through the skin. Do not get on skin or clothing. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed or inhaled. Irritating to eyes, nose and throat. Avoid breathing vapor or spray mist. Do not get in eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, or viton. For more options, follow the instructions for Category B on the EPA chemical-resistance category selection chart. Handlers applying via weed sprayer (see *Terms Used In This Labeling* section) while irrigation system is operating or handlers who may be exposed to liquid spray while repairing a malfunctioning chemigation system or shutting off equipment must wear:

- chemical-resistant coveralls over long-sleeve shirt and long pants,
- chemical-resistant gloves,
- chemical-resistant footwear plus socks,
- chemical-resistant headgear, and
- respirator of the type specified in the respiratory protection section in the PPE requirements on this label.

Handlers wearing chemical-resistant attire are limited to 30 minutes of exposure in any 60 minute period to prevent heat illness, and, as required by the Worker Protection Standard for Agricultural Pesticides, employers of these handlers must take any necessary steps to avoid heat illness.

Except as required above, handlers transferring or loading liquid formulations, handlers operating motorized ground equipment with open cabs, handlers repairing or inactivating irrigation or chemigation equipment during application, and handlers cleaning up spills or equipment, must wear:

- coveralls over long-sleeve shirt and long pants,
- chemical resistant gloves,
- chemical resistant footwear plus socks,
- chemical-resistant apron if transferring or loading the fumigant or cleaning up spills or equipment,
- protective eyewear, and
- respirator of the type specified in the PPE requirements for respiratory protection section in the PPE requirements on this label if triggered.

All other handlers, including handlers operating motorized ground equipment with closed cabs (except for handlers who set up and calibrate chemigation and irrigation equipment and start the application from inside the application block) as stated in this labeling must wear:

- long-sleeve shirt and long pants,
- shoes plus socks, and
- respirator of the type specified in the respiratory protection section in the PPE requirements on this label if triggered.

All handlers who set-up and calibrate chemigation and irrigation equipment and start the application from inside the application block must wear:

- long-sleeve shirt and long pants,
- shoes plus socks,
- protective eyewear, and
- respirator of the type specified in the respiratory protection section in the PPE requirements on this label if triggered.

PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR RESPIRATORY PROTECTION

When an air-purifying respirator is required under this label's Directions for Use, Protection for Handlers, Respiratory Protection and/or Stop Work Triggers section, handlers must wear at minimum either:

- A NIOSH certified full facepiece air-purifying respirator equipped with an organic vapor (OV, NIOSH approval prefix TC-23C) cartridge and a particulate pre-filter (Type N, R, P, or HE, NIOSH approval number prefix TC-84A), or
- A gas mask with a canister approved for organic vapor (NIOSH approval number prefix TC-14G).

Cartridges or canisters must be replaced when odor or sensory irritation from this product becomes apparent during use, if the measured concentration of MITC is greater than 6000 ppb (6 ppm), or in the absence of any other instructions or indications of service life, at the end of each day's work period, whichever occurs first.

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. DO NOT transport contaminated clothing inside a closed vehicle unless stored in a sealed container. Wash or dispose as specified.

USER SAFETY RECOMMENDATIONS

Users should: 1) Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) 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 toxic to mammals, birds, aquatic invertebrates and fish. 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 when disposing of equipment wash waters or rinsate.

Metam-sodium has certain properties and characteristics in common with chemicals that have been detected in groundwater (highly soluble in water and has low adsorption to soil). For untarped applications, leaching and runoff may occur if there is heavy rainfall after soil fumigation.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

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. Do not apply when wind speed favors drift beyond the area intended for treatment. Only handlers may be in the application block from the start of the application until the entry restricted period ends, and in the buffer zone during the buffer zone period. 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 (WPS), 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. The requirements in this box only apply to uses of this product that are covered by the WPS.

For the entry restricted period and notification requirements, see the *Entry Restricted Period and Notification* sections of this labeling. PPE For Entry During the Entry-Restricted Period: PPE for entry that is permitted by this labeling is listed in the "*Personal Protective Equipment (PPE)*" section of this labeling.

TERMS USED IN THIS LABELING

Soil Fumigant Training Program: Certified applicator training that provides information on (1) how to correctly apply the fumigant, including how to comply with new label requirements; (2) how to protect handlers and bystanders; (3) how to determine buffer zone distances; (4) how to complete an FMP and the post-application summary; (5) how to determine when weather and other site-specific factors are not favorable for fumigant application; (6) how to comply with required GAPs and how to document compliance with GAPs in the FMP; and (7) how to develop and implement emergency response plans.

Fumigant Safe Handling Information: Information that must be provided annually to handlers that must include the following: (1) what fumigants are and how they work, (2) safe application and handling of soil fumigants, (3) air monitoring and respiratory protection requirements for handlers, (4) early signs and symptoms of exposure, (5) appropriate steps to take to mitigate exposures, (6) what to do in case of an emergency, and (7) how to report incidents.

Application Block: Area within the perimeter of the fumigated portion of a field (including furrows, irrigation ditches, roadways). The perimeter of the application block is the border that connects the outermost edges of total area treated with the fumigant product.

Application Rate: The ratio of fumigant mass applied compared to the soil surface area (e.g., lbs of product per acre). The application rate is expressed on this labeling in terms of either the "treated area application rate" or the "broadcast equivalent application rate." The "treated area application rate" relates to only the rate of fumigant applied to the portion of the field that is fumigated (e.g., rate within the bed or strips). The "broadcast equivalent application rate" relates to the rate of fumigant applied within the entire perimeter of the application block. For bedded and strip applications, the "broadcast equivalent application rate" must be calculated to determine the buffer zone distance required by this labeling.

Start of the Application: The time at which the fumigant is first delivered/dispensed into the soil in the application block.

Application is Complete: The time at which the fumigant has stopped being delivered/dispensed into the soil and the soil has been sealed; drip lines have been purged (if applicable). For applications with water seals, the application is complete at the time at which the fumigant has stopped being delivered/dispensed in the soil.

Entry Restricted Period: This period begins at the start of the application and expires depending on the application method and if tarps are used when the tarps are perforated and removed. Entry into the application block during this period is only allowed for appropriately PPE-equipped handlers performing handling tasks. See the "Entry Restricted Period and Notification" section for additional information.

Buffer Zone: An area established around the perimeter of each application block. The buffer zone must extend outward from the edge of the application block perimeter equally in all directions.

Buffer Zone Period: Begins at the start of the application and lasts for a minimum of 48-hours after the application is complete. Non-handlers must be excluded from the buffer zone during the buffer zone period.

Difficult to Evacuate Sites: Pre-K to Grade 12 schools, state licensed daycare centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons.

Owner: Any person who has a present possessory interest (fee, leasehold, rental, or other) in an agricultural establishment. A person who has both leased such agricultural establishment to another person and granted that same person the right and full authority to manage and govern the use of such agricultural establishment is not an owner. See definition of "owner" in WPS (40 CFR §170.3).

Roadway: Portion of a street or highway improved, designed or ordinarily used for vehicular travel, exclusive of the sidewalk or shoulder even if such sidewalk or shoulder is used by persons riding bicycles. In the event a highway includes two or more separated roadways, the term *roadway* shall refer to any such roadway separately.

Representative Handling Task: For air monitoring, the locations and handler activities sampled must represent each handler's exposure occurring within the application block. For example, for an application consisting of a seven-handler crew (1 tractor driver, 1 tractor co-pilot, 4 shovelers, and 1 certified applicator supervising) two breathing zone samples could be collected: one sample for the tractor co-pilot and one sample for a downwind shoveler. Results of previous sampling may indicate which tasks and locations are worst case and therefore representative of all handlers."

Solid Stream: An uninterrupted liquid stream that remains generally as a coarse flow until contacting the intended target. An example of a solid stream application is Smart Drop®, also known as drizzle boom. Any application system that employs sprayheads or nozzles with moving parts that produce a rotating or oscillating spray pattern (e.g., rotators, spinner, nutators, and wobblers) or that otherwise break up the stream into droplets does not qualify as a solid stream nozzle.

High Release Height Center Pivot or Lateral Move Irrigation Applications: (1) Release height OR spray height greater than 8 feet, and (2) there is greater than 30 lbs. PSI at the sprinkler head.

Medium Release Height Center Pivot or Lateral Move Irrigation Applications: (1) Release height AND spray height is less than 8 feet, AND (2) 29 lbs. or less PSI at the sprinkler head, AND (3) there are no end guns.

Low Release Height-Solid Stream Center Pivot or Lateral Move Irrigation Applications: (1) Release height and spray height is less than 4 feet, AND (2) 29 lbs. or less PSI at the sprinkler head, AND (3) application system produces a solid stream, and (4) there are no end guns.

Weed Sprayer: In this labeling, weed sprayer refers to a tank that holds 100-500 gallons combined with an off-set spray boom that creates a swath about 4 feet on each side of an orchard tree row, leaving the untreated grassy middle to grow.

USE SITES

Phume Soil Fumigant is for use only on the following:

Cover crops (i.e., crops planted between periods of regular crop production to prevent soil erosion). The terminated crop must not be used for any food or feed purposes after this product has been applied; Crops grown solely for seed; as well as pre-plant soil uses for: alfalfa; amaranth (including leafy amaranth, Chinese spinach, tampala); anise; apple (including: balsam, crabapple); apricot; artichokes; arugula (roquette); asparagus (nursery production only); barley; basil; beans (including: lima, green, fava, seed beans); beet (including garden); berry (including black satin berry, blackberry, blueberry, boysenberry, chesterberry, lowberry, wild raspberry, youngberry, darrowberry, dewberry, cloudberry, elderberry, Cherokee blackberry, coryberry, European barberry, huckleberry, hullberry, gooseberry, cranberry, highbush cranberry, Himalayaberry, jostaberry, juneberry, saskatoon berry, lingonberry, loganberry, lavacaberry, lucretiaberry, mammoth blackberry, marionberry, bingleberry, mountain pepper berries, mulberry, olallieberry, dirksen thornless berry, nectarberry, Oregon evergreen berry, partridgeberry, phenomenalberry, rangeberry, raspberry (black and red), ravenberry, riberry, rossberry, schisandra berry, serviceberry, Shawnee blackberry, strawberry); bok choy; broccoli; brussels sprouts; cabbage (including Napa); calabaza; calamondin; cardoon; carrot; casaba; cauliflower; celeriac; celery (including: Chinese); celtuce; chayote (fruit); che; cherry (including: sweet and tart, chokecherry, pincherry); chervil; cheyenne; Chilean guava; Chinese greens; Chinese okra; Chinese waxgourd (Chinese preserving melon); chinquapin; chironja; chrysanthemum; cilantro; citrus citron; citrus hybrids; collard; corn salad; corn; cotton; cress (including: upland, yellow rocket, winter cress); cucumber (including: Chinese cucumber); cucuzza; currant, (including: black, red, native and other varieties and hybrids); dandelion; dill; dock (sorrel); eggplant; endive (escarole); fennel, Florence (finocchio); forest seedlings; garland; garlic; gherkin; ginger; gourd; grape; grapefruit; hechima; herbs (all); honey balls; honeysuckle; hyotan; kale; kiwifruit (including: fuzzy and hardy); kohlrabi; kumquat; leek; lemon; lettuce (including: head and leaf); lime; loquat; mandarin (including: tangerine and satsuma); mango; mayhaw; maypop; melon (including: bitter melon, cantaloupe, hybrids and/or cultivars, citron melon, crenshaw melon, golden pershaw melon, mango melon, honeydew melon, muskmelon, Persian melon, pineapple melon, Santa Claus melon, snake melon, watermelon); mint; muntries; mustard; nectarine; nursery stock (fruit seedlings and rose bushes only); nursery tree crops (including crops like maple, ash, dogwood); nut (including: almond, beech nut, cashew, chestnut, hickory nut, Brazil nut, macadamia nut (bush nut), filbert (hazelnut), pecan, pistachio, walnut (black and English/Persian); onion; orach; orange (including: sour and sweet); ornamentals; parsley; peas (including: English and garden); peach; peanut; pear (including: oriental and balsam); pepper; phalsa; plum (including: Chickasaw and Damson); plumcot; potato; prune (fresh); pummelo; pumpkin; purslane (including: garden and winter); quince; radicchio (red chicory); radish (including Oriental); rappini; rhubarb; rye; salal; sea buckthorn; soybean; spinach (including: New Zealand, Malabar, Indian); squash, (including: summer, winter, butternut, straightneck, Acorn, crookneck, hubbard, scallop, spaghetti); sugar beet; sweet potato; swiss chard; tangelo; tangor; tobacco; tomatoes; tree nuts (orchard replant only); turf (including golf courses); turnip; vegetable marrow; wheat; yams; zucchini.

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USE METHOD RESTRICTIONS

The use of this product is restricted to the methods described in this label.

Use in greenhouses or any other enclosed structure or confined area is prohibited. Application with handheld equipment is prohibited. Application with cement grinder and shredder equipment is prohibited. Open pour applications are prohibited. Do not apply this product through traveler or big gun application systems.

CERTIFIED APPLICATOR TRAINING

Any certified applicator supervising a soil fumigant application must have successfully completed one of the soil fumigant training programs listed on the following EPA website <http://www.epa.gov/fumigantraining> for the active ingredient(s) in this product. The training must be completed in the time frames listed on the website. The FMP must document the date and location where the soil fumigant training program was completed.

HANDLERS

The following activities are prohibited from being performed by anyone other than persons who have been appropriately trained and equipped as handlers in accordance with the requirements in WPS (40 CFR Part 170):

- Monitoring fumigant air concentrations;
- Cleaning up fumigant spills (this does not include emergency personnel not associated with the fumigation application);
- Handling or disposing of fumigant containers;
- Cleaning, handling, adjusting, or repairing the parts of fumigation equipment that may contain fumigant residues; and
- Performing any handling tasks as defined by the WPS (40 CFR 170).

The following activities are prohibited from being performed in the application block from the start of the application until the entry restricted period ends and in the buffer zone during the buffer zone period by anyone other than persons who have been appropriately trained and equipped as handlers in accordance with the requirements in WPS (40 CFR Part 170). (NOTE: Persons repairing and monitoring tarps are considered handlers for the duration listed below). Prohibited activities (except for trained and equipped handlers) include:

- Participating in the application as supervisors, loaders, drivers, tractor co-pilots, shovelers, cross ditchers, or as other direct application participants;
- Installing, repairing, operating, or removing irrigation equipment;
- Performing scouting, crop advising, or monitoring tasks;
- Installing, perforating (cutting, punching, slicing, poking), or removing tarps; and
- Repairing or monitoring tarps until 14 days after application is complete if tarps are not perforated and removed during those 14 days. NOTE: See *Tarp Perforation and/or Removal* section on this labeling for requirements about when tarps are allowed to be perforated.

Handlers do not include local, state, or federal officials performing inspection, sampling, or other similar official duties.

PROTECTION FOR HANDLERS

Supervision of Handlers:

For all applications, except water run, from the start of the application until the application is complete, a certified applicator must be at the application block in the line of sight of the application and must directly supervise all persons performing handling activities.

For water-run applications (e.g., sprinkler/chemigation, wheel line, center pivot, lateral move, drip, flood, etc.), a certified applicator must be in the line of sight of the application at the start of the application, including set-up, calibration, and initiation of the application. A certified applicator may leave but must return at least every two hours to visually inspect the equipment to ensure proper functioning, and must directly supervise all WPS-trained handlers until the application is complete. WPS-trained handlers may

perform these monitoring functions in place of a certified applicator but they must be under the supervision of a certified applicator and be able to communicate with a certified applicator at all times during monitoring activities via cell phone or other means.

For handling activities that take place after the application is complete until the entry restricted period expires, the certified applicator is not required to be on-site, but must have communicated in a manner that can be understood by the site owner and handlers responsible for carrying out those activities the information necessary to comply with the label and procedures described in the FMP (e.g., emergency response plans and procedures).

IMPORTANT: This requirement does not override the requirements in the Worker Protection Standard for Agricultural Pesticides for information exchange between operators of agricultural establishments and commercial pesticide applicators.

The certified applicator must provide **Fumigant Safe Handling Information** to each handler or confirm that within the past 12 months, each handler has received **Fumigant Safe Handling Information** in a manner that he/she can understand. **Fumigant Safe Handling Information** will be provided where this product is purchased or at <http://www.epa.gov/fumigantraining>.

Exclusion of Non Handlers from the Application Block and Buffer Zones:

The certified applicator supervising the application and the owner of the establishment where the application is taking place must make sure that all persons who are not trained and PPE-equipped and who are not performing one of the handling tasks as stated in this labeling are:

- excluded from the application block during the entry restricted period, and
- excluded from the buffer zone during the buffer zone period (see buffer zone exemption for transit on roadways in Buffer Zone Requirements section).

Local, state, or federal officials performing inspection, sampling, or other similar official duties are not excluded from the application block or the buffer zone by this labeling. The certified applicator supervising the application and the owner of the establishment where the application is taking place are not authorized to, or responsible for, excluding those officials from the application block or the buffer zone by this labeling. The certified applicator supervising the application and the owner of the establishment where the application is taking place are not authorized to, or responsible for, excluding those officials from the application block or the buffer zone.

Providing, Cleaning and Maintaining PPE:

The employer of any handler (as stated in this label) must make sure that all handlers are provided and correctly wear the required PPE. The PPE must be cleaned and maintained as required by the Worker Protection Standard for Agricultural Pesticides.

Availability of Air-purifying Respirator:

The employer of any handler must confirm that an air-purifying respirator and appropriate cartridges of the type specified in the *PPE* section of this labeling are immediately available for each handler who will wear one. At least one handler must have the appropriate air-purifying respirator and cartridges available (see *Respirator Fit Testing, Medical Qualification, and Training* section for additional requirements).

Exception: Air-purifying respirators do not need to be made available for handlers performing fumigant site monitoring tasks outside of the buffer zone.

Respirator Fit Testing, Medical Qualification and Training:

Using a program that conforms to OSHA's requirements (see 29 CFR Part 1910.134), employers must verify that any handler who uses a respirator is:

- Fit-tested and fit-checked,
- Trained, and
- Examined by a qualified medical practitioner to ensure physical ability to safely wear the style of respirator to be worn. A qualified medical practitioner is a physician or other licensed health care professional who will evaluate the ability of a worker to wear a respirator. The initial evaluation consists of a questionnaire that asks about medical conditions (such as a heart condition) that would be problematic for respirator use. If concerns are identified, then additional evaluations, such as a

physical exam, might be necessary. The initial evaluation must be done before respirator use begins. Handlers must be reexamined by a qualified medical practitioner if their health status or respirator style or use-conditions change.

Upon request by local/state/federal/tribal enforcement personnel, employers must provide documentation demonstrating how they have complied with these requirements.

Respiratory Protection and Stop Work Triggers:

The following procedures must be followed to determine whether an air-purifying respirator is required or if operations must cease for any person performing a handling task (except for fumigant site monitoring outside of the buffer zone) as stated in this label.

- If at any time any handler experiences sensory irritation (tearing, burning of the eyes or nose), then either:
 - An air-purifying respirator must be worn by all handlers who remain in the application block or surrounding buffer zone, or
 - Operations must cease and handlers not wearing an air-purifying respirator must leave the application block and surrounding buffer zone.
- Handlers can remove air-purifying respirators or resume operations if two consecutive breathing-zone samples taken at the handling site at least 15 minutes apart show that levels of MITC have decreased to less than 600 ppb (0.6 ppm), provided that handlers do not experience sensory irritation. During the collection of air samples, an air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced.
- When using monitoring devices to monitor air concentration levels, a direct read detection device, such as an electronic device or a colorimetric device (e.g., Draeger, Sensidyne) must be used. The devices must have sensitivity of at least 600 ppb (0.6 ppm) for MITC. Persons using direct read detection devices must follow the manufacturer's directions.
- When breathing zone samples are required, they must be taken outside respiratory protection equipment and within a 10 inch radius of the handler's nose and mouth.
- When air-purifying respirators are worn, air monitoring samples must be collected at least every 2 hours in the breathing zone of a handler performing a representative handling task.
- If at any time: (1) a handler experiences sensory irritation when wearing an air-purifying respirator, or (2) a MITC air sample is greater than or equal to 6,000 ppb (6 ppm), then all handler activities must cease and handlers must be removed from the application block and surrounding buffer zone.
- Handlers can resume work activities without air-purifying respirators if two consecutive breathing-zone samples taken at the handling site at least 15 minutes apart show levels of MITC have decreased to less than 600 ppb (0.6 ppm), provided that handlers do not experience sensory irritation. During the collection of air samples an air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced or where samples(s) were greater than or equal to 6,000 ppb (6 ppm).
- Handlers can resume work activities if all of the following conditions exist provided that the appropriate air-purifying respirator is worn:
 - two consecutive breathing zone samples for MITC taken at the handling site at least 15 minutes apart must be less than 6,000 ppb (6 ppm),
 - handlers do not experience sensory irritation while wearing an air-purifying, and
 - filter cartridges/canisters have been changed.

During the collection of air samples an air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced or where samples(s) were greater than or equal to 6,000 ppb (6 ppm).

Tarp Perforation and/or Removal

IMPORTANT: Persons perforating, repairing, removing, and/or monitoring tarps are defined, within certain time limitations, as handlers (see *Handlers section*), and they must be provided the PPE and other protections for handlers as required on this labeling and in the Worker Protection Standard for Agricultural Pesticides.

- Tarps must not be perforated until a minimum of 5 days (120 hours) have elapsed after the application is complete, unless a weather condition exists which necessitates early tarp perforation or

removal (see *Early Tarp Removal for Broadcast Applications Only and Early Tarp Perforation during Flood Prevention Activities for Bedded Applications Only* requirements).

- If tarps are perforated within 14 days after the application is complete, tarp removal must not begin until at least 2 hours after tarp perforation is complete.
- If tarps are perforated but not removed within 14 days after the application is complete, planting or transplanting must not begin until at least 48 hours after the tarp perforation is complete.
- If tarps are not perforated or removed within 14 days after the application is complete, planting or transplanting may take place while the tarps are being perforated.
- Each tarp panel used for broadcast fumigation must be perforated.
- Tarps may be perforated manually ONLY for the following situations:
 - At the beginning of each row when a coulter blade (or other device which performs similarly) is used on a motorized vehicle such as an ATV.
 - In fields that are 1 acre or less.
 - During flood prevention activities.
- In all other instances tarps must be perforated (cut, punched, poked, or sliced) only by mechanical methods.
- Tarp perforation for broadcast fumigations must be completed before noon.
- For broadcast fumigations, tarps must not be perforated if rainfall is expected within 12 hours.
- Early Tarp Removal for Broadcast Applications Only:
 - Tarps may be removed before the required 5 days (120 hours) if adverse weather conditions have compromised the integrity of the tarp, provided that the compromised tarp poses a safety hazard. *Adverse weather* includes high wind, hail, or storms that blow tarps off the field and create a hazard, e.g., tarps blowing into power lines and onto roads. A *compromised tarp* is a tarp that due to an adverse weather condition is no longer performing its intended function and is creating a hazard.
- Early Tarp Perforation during Flood Prevention Activities for Bedded Applications Only:
 - Tarp perforation is allowed before the 5 days (120 hours) have elapsed.
 - Tarps must be immediately retucked and packed after soil removal.

Entry Restricted Period and Notification

Entry into the application block (including early entry that would otherwise be permitted under the WPS) by any person – other than a correctly trained and PPE-equipped handler who is performing a handling task listed on this labeling – is PROHIBITED - from the start of the application until:

- 5 days (120 hours) after the application is complete for untarped applications, or
- 5 days (120 hours) after the application is complete if tarps are not perforated and removed for at least 14 days after the application is complete, or
- 48 hours after tarp perforation is complete if tarps will be perforated within 14 days after the application is complete and will not be removed for at least 14 days after the application is complete, or
- tarp removal is completed if tarps are both perforated and removed less than 14 days after the application is complete.

NOTES:

- See *Tarp Perforation and/or Removal* section on this labeling for requirements about when tarps are allowed to be perforated.
- If early tarp removal occurs for a broadcast application the entry restricted period is a minimum of 5 days after the application is complete.
- When listing application information for soil fumigant applications to comply with part 170.122 of the WPS, list the entry restricted period time frame in place of the REI.

NOTIFICATION

Notify workers of the application by warning them orally and by posting Fumigant Treated Area signs. The signs must bear the skull and crossbones symbol and state:

- "DANGER/PELIGRO,"
- "Area under fumigation, DO NOT ENTER/NO ENTRE,"
- "Metam Sodium in USE"

- the date and time of fumigation,
- the date and time entry restricted period is over,
- "Phume Soil Fumigant", and
- Name, address, and telephone number of the certified applicator in charge of the fumigation.

Post the Fumigant Treated Area sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, text size, and sign size (40 CFR §170.120).

Post Fumigant Treated Area signs at all entrances to the application block no sooner than 24 hours prior to application.

Fumigant Treated Area signs must remain posted for no less than the duration of the entry restricted period.

Fumigant Treated Area signs must be removed within 3 days after the end of the entry restricted period.

MANDATORY GOOD AGRICULTURAL PRACTICES (GAPs)

The following GAPs must be followed during all fumigant applications.

SHANK APPLICATIONS

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether an application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist within an hour prior to sunset and continue past sunrise and may persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions, Injection Depth, and Soil Sealing

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.

- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

The injection point for bedded and broadcast shank injection applications shall be a minimum of 3 inches from the final soil/air interface. Chisel traces must be eliminated following an application and the soil surface must be sealed immediately after application using one or more of the following methods:

- Compaction with a bed-shaper, roller, press wheel, coil packer, ring packer, or similar device, OR
- Covering the treated soil with 3-6 inches of untreated soil, OR Applying a minimum of a 1/4-inch of water beginning immediately after application begins and completing the water treatment within four hours, OR
- Covering treated area with a tarp (Bedded applications only. Tarps are prohibited for shank broadcast applications of Phume).

Tarps (when tarps are used in Phume Soil Fumigant applications)

- A written tarp plan must be developed and included in the FMP.
- Once a tarp is perforated, the application is no longer considered tarped.
- Tarps must be installed immediately after the fumigant is applied to the soil.

Soil Temperature

- At the beginning of the application, the soil temperature at the injection depth must be between 35° and 90°F.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage before or during injection. To conserve existing soil moisture, tillage should be done as close to the time of application as possible.

Application and Equipment Considerations

- Do not apply or allow fumigant to spill onto the soil surface. Injectors must be below the soil surface before product flow begins. Each injection line must either have a check valve located as close as possible to the final injection point, or drain/purge the line of any remaining fumigant prior to lifting injection shanks from the ground. Do not lift injection shanks from the soil until the shut-off valve has been closed and the fumigant has been depressurized (passively drained) or purged (actively forced out via air compressor) from the system.
- Application equipment must be in good working order.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Dry disconnect couplings (closed transfer system) must be installed on tanks and transfer hoses.
- Sight gauges and pressure gauges must be properly functioning.
- Nozzles and metering devices must be the correct size and sealed and unobstructed.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- Each nozzle must be equipped with a flow monitor, e.g. mechanical, electronic, or Red-ball type monitor.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.

- All rigs must include a filter to remove any particulates from the fumigant, and a check valve that is visible to the tractor driver during application to prevent backflow of the fumigant into the pressurizing cylinder.
- All rigs must include a flow meter or a flow monitoring device.
- All rigs must have a constant pressure system with orifice plates to ensure the proper amount of fumigant is applied.
- Valves (e.g., backflow, shut-off), vacuum relief valves, and low pressure drains must be in place, operational, and leak free.
- Use only positive displacement pumps. DO NOT use impellers made of brass, aluminum, or galvanized material.
- Before using a fumigation rig for the first time, or when preparing it for use after storage, the operator must check the following items carefully:
 - Check the filter, and clean or replace the filter element as required.
 - Check all tubes and chisels/shanks to make sure they are free of debris and obstructions.
 - Check and clean the orifice plates.

SPRAY BLADE APPLICATIONS (includes bed-top blade and soil cap applications)

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions, Injection Depth, and Soil Sealing

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation

treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.

- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Apply the product mixture on the soil immediately ahead of the bed-shaping equipment or tiller. The soil surface must be compacted immediately after application using one or more of the following methods:

- Compaction with a bed-shaper, roller, press wheel, coil packer, ring packer, or similar device, OR
- Covering the treated soil with 3-6 inches of untreated soil, OR
- Applying a minimum of a 1/4-inch of water beginning immediately after application begins and completing the water treatment within four hours, OR
- Covering treated area with a tarp.

Tarps (when tarps are used in applications of this product)

- A written tarp plan must be developed and included in the FMP.
- Once a tarp is perforated, the application is no longer considered tarped.

Soil Temperature

- At the beginning of the application, the soil temperature at the injection depth must be between 35° and 90°F.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage before or during injection. To conserve existing soil moisture, tillage should be done as close to the time of application as possible.

Application and Equipment Considerations

- Do not apply or allow fumigant to drain or drip onto the soil surface
- Application equipment must be in good working order.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Dry disconnect couplings (closed transfer system) must be installed on all tanks and transfer hoses.
- Sight gauges and pressure gauges must be properly functioning.
- Nozzles and metering devices must be the correct size and sealed and unobstructed.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- Each nozzle must be equipped with a flow monitor, e.g. mechanical, electronic, or Red-ball type monitor.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- All rigs must include a filter to remove any particulates from the fumigant, and a check valve that is visible to the tractor driver during application to prevent backflow of the fumigant into the pressurizing cylinder.
- Before using a fumigation rig for the first time, or when preparing it for use after storage, the operator must check the following items carefully:
 - Check the filter, and clean or replace the filter element as required.
 - Check all tubes and chisels to make sure they are free of debris and obstructions.
 - Check and clean the orifice plates.

ROTARY TILLER APPLICATIONS

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions, Injection Depth, and Soil Sealing

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.
- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Spray or drip the product mixture on the soil immediately ahead of the bed-shaping equipment or tiller. The soil surface must be compacted immediately after application using one or more of the following methods:

- Compaction with a bed-shaper, roller, press wheel, coil packer, ring packer, or similar device, OR
- Covering the treated soil with 3-6 inches of untreated soil, OR
- Applying a minimum of a 1/4-inch of water beginning immediately after application begins and completing the water treatment within four hours, OR
- Covering treated area with a tarp.

Tarps (when tarps are used in applications of this product)

- A written tarp plan must be developed and included in the FMP.
- Once a tarp is perforated, the application is no longer considered tarped.

Soil Temperature

- At the beginning of the application, the soil temperature at the injection depth must be between 35° and 90°F.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- **EXCEPTION:** In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage before or during injection. To conserve soil moisture, tillage should be done as close to the time of application as possible.

Application and Equipment Considerations

- Do not apply or allow fumigant to drain or drip onto the soil surface.
- Dry disconnect couplings (closed transfer system) must be installed on all tanks and transfer hoses.
- Application equipment must be in good working order.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Sight gauges and pressure gauges must be properly functioning.
- Nozzles and metering devices must be the correct size and sealed and unobstructed.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- Each nozzle must be equipped with a flow monitor, e.g. mechanical, electronic, or Red-ball type monitor.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- All rigs must include a filter to remove any particulates from the fumigant, and a check valve that is visible to the tractor driver during application to prevent backflow of the fumigant into the pressurizing cylinder.
- Before using a fumigation rig for the first time, or when preparing it for use after storage, the operator must check the following items carefully:
 - Check the filter, and clean or replace the filter element as required.
 - Check all tubes and chisels shanks to make sure they are free of debris and obstructions.
 - Check and clean the orifice plates.

CENTER PIVOT AND LATERAL MOVE APPLICATIONS

Wind Speed

- For lateral or center pivot applications: 1) not using a solid stream type nozzle, OR 2) having a release height or spray height greater than 4 feet, OR 3) having 30 lbs or greater PSI at the sprinkler head, wind speed at the application site must be a minimum of 2 mph at the start of the application or forecasted to reach 5 mph during the application and the maximum wind speed is 10 mph.
- For lateral move or center pivot applications using: 1) a solid stream, AND 2) having release height and spray height less than 4 feet, AND 3) having 29 lbs. or less PSI at the sprinkler head, wind speed at the application site must be a minimum of 2 mph at the start of the application or forecasted to reach 5 mph during the application and the maximum wind speed is 25 mph.

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and

- o on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.
- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Except when applying over cover crops as set forth in the Product Instructions for Sprinkler System, crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Soil Temperature

- At the beginning of the application, the soil temperature must be between 35° and 90°F, measured at 3 inches in depth.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the

application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For fields with more than one soil texture, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches below the surface of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage prior to the application. To conserve soil moisture, tillage should be done as close to the time of application as possible.

Flushing Irrigation Lines

- Do not allow fumigant to remain in the irrigation system after the application is complete. After application of the fumigant, flush the injection and irrigation system with untreated water. The flush time must be adequate to purge the fumigant from the injection and irrigation system, but should be less than the amount that could over-saturate the beds. If common lines are used for both the fumigant application and the water treatment/seal (if applied), these lines must be adequately flushed before starting the water treatment/seal.

Application and Equipment Considerations

- Anti-siphon and backflow prevention devices must be installed and in working order.
- Tanks must be in good condition to ensure product does not spill or leak.
- Tanks must have sealable covers on access ports.
- Tanks must have proper pesticide labels affixed to them.

- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- Use only positive displacement pumps. DO NOT use impellers made of brass, aluminum or galvanized material.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- The system must contain a functional check valve, vacuum relief valve, inspection port 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 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 that 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.
- Any alternatives to the required safety devices in this label must conform to the list of EPA-approved alternative devices.

SOLID SET SPRINKLER APPLICATIONS

Wind Speed

- Wind speed at the application site *must* be a minimum of 2 mph at the start of the application or forecasted to reach 5 mph during the application and the maximum wind speed is 10 mph.

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and

- o on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.
- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Except when applying over cover crops as set forth in the Product Instructions for Sprinkler System, crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Soil Temperature

- At the beginning of the application, the soil temperature must be between 35° and 90°F, measured at 3 inches in depth.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperatures must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the

application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches below the surface of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage prior to the application. To conserve soil moisture tillage should be done as close to the time of application as possible.

Flushing Irrigation Lines

- Do not allow fumigant to remain in the irrigation system after the application is complete. After application of the fumigant, flush the injection and irrigation system with untreated water. The flush time must be adequate to purge the fumigant from the injection and irrigation system, but should be less than the amount that could over-saturate the beds. If common lines are used for both the fumigant application and the water treatment/seal (if applied), these lines must be adequately flushed before starting the water treatment/seal.

Application and Equipment Considerations

- Anti-siphon and backflow prevention devices must be installed and in working order.
- Tanks must be in good condition to ensure product does not spill or leak.
- Tanks must have sealable covers on access ports.
- Tanks must have proper pesticide labels affixed to them.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.

- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- Use only positive displacement pumps. DO NOT use impellers made of brass, aluminum, or galvanized material.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- The system must contain a functional check valve, vacuum relief valve, inspection port, 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 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 that 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.
- Any alternatives to the required safety devices in this label must conform to the list of EPA-approved alternative devices.

DRENCH APPLICATIONS

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.
- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Soil Temperature

- At the beginning of the application, the soil temperature must be between 35° and 90°F, measured at 3 inches in depth.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches below the surface of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage before the application. To conserve soil moisture, tillage should be done as close to the time of application as possible.
- Applications must be followed immediately with 0.20 to 0.50 inches of water through solid set sprinklers.
- A minimum of two more water seals must be applied; one water seal on the first evening of the application and the second on the evening of the day after application.

Application and Equipment Considerations

- Anti-siphon and backflow prevention devices must be installed and in working order.
- Tanks must be in good condition to ensure product does not spill or leak.
- Tanks must have sealable covers on access ports.
- Tanks must have proper pesticide labels affixed to them.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Dry disconnect couplings (closed transfer system) must be installed on all tanks and transfer hoses.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- Each nozzle must be equipped with a flow monitor, e.g., mechanical, electronic, or Red-ball type monitor.
- Nozzles and metering devices are of correct size and are sealed and unobstructed.

- To inject fumigant, use a metering system, effectively designed and constructed of materials that are compatible with the fumigant and capable of being fitted with system interlocking controls.
- The system must contain a functional check valve, vacuum relief valve, inspection port, 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 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 that 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.
- Any alternatives to the required safety devices in this label must conform to the list of EPA-approved alternative devices.

DRIP APPLICATION

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.
- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Soil Temperature

- At the beginning of the application, the soil temperature must be between 35° and 90°F, measured at 3 inches in depth.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- **EXCEPTION:** In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and

effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches below the surface of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage prior to the application. To conserve soil moisture tillage should be done as close to the time of application as possible.

Tarps (when tarps are used in [insert name of the product] applications)

- A written tarp plan must be developed and included in the FMP.
- Application to blocks with previously laid and perforated tarps is allowed, but once a tarp is perforated, the application is no longer considered tarped. Therefore, the application would not be eligible for tarp buffer zone credits.

Flushing Drip Irrigation Lines

- After application of the fumigant, continue to irrigate the area with water to flush the injection and irrigation system with untreated water. Do not allow fumigant to remain in the irrigation system after the application is complete. The total volume of water must be adequate to completely remove the fumigant from the irrigation system, but should be less than the amount that could over-saturate the beds. If common lines are used for both the fumigant application and the water treatment/seal (if applied), these lines must be adequately flushed before starting the water treatment/seal and/or normal irrigation practices.

Application and Equipment Considerations

- Anti-siphon and backflow prevention devices must be installed and in working order.
- Tanks must be in good condition to ensure product does not spill or leak.
- Tanks must have sealable covers on access ports.
- Tanks must have proper pesticide labels affixed to them.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- The drip irrigation system (main lines, headers, drip tape) must be thoroughly checked for leaks before the start of the application. An adequate run-time and pressure are needed to detect leaks. Look for puddling along major pipes (holes on pipes or leaky joints), at the top and ends of rows (leaky connections, open drip tape), in the furrows and on the bed surface (damaged drip tape, malfunctioning emitters).
- To inject fumigant, use a metering system, effectively designed and constructed of materials that are compatible with the fumigant and capable of being fitted with system interlocking controls.
- Nozzles and metering devices are of correct size and are sealed and unobstructed.

- The system must contain a functional check valve, vacuum relief valve, inspection port, 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 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 that 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.
- Any alternatives to the required safety devices in this label must conform to the list of EPA-approved alternative devices.

FLOOD BASIN, FURROW, AND BORDER APPLICATION

Weather Conditions

- To determine if unfavorable weather conditions exist or are predicted (see Identifying Unfavorable Weather Conditions section) and whether application should proceed, the National Weather Service weather forecast must be checked by the certified applicator supervising the application:
 - on the day of, but prior to the start of the application, and
 - on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Do not apply if an air stagnation advisory issued by the National Weather Service is in effect for the area in which the application is planned, during the application, or the 48 hours after the application is complete.
- Do not apply if light wind conditions (< 2 mph) are forecast to persist for more than 18 consecutive hours from the time the application starts until 48 hours after the application is complete.
- Detailed National Weather Service forecasts for local weather conditions, wind speed, and air stagnation advisories may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions

- Unfavorable weather conditions block upward movement of air, which results in trapping fumigant vapors near the ground. The resulting air mass can move off-site in unpredictable directions. These conditions typically exist prior to sunset and continue past sunrise and persist as late as noontime. Unfavorable conditions are common on nights with limited cloud cover and light to no wind and their presence can be indicated by ground fog or smog and can also be identified by smoke from a ground source that flattens out below a ceiling layer and moves laterally in a concentrated cloud.

Soil Conditions

- Soil must be in good tilth, free of large clods, and tilled at a minimum to the depth of the treatment zone. Large clods can prevent effective soil sealing and reduce effectiveness of the application. If subsurface soil compaction layers (hardpans) are present within the intended fumigation

treatment zone, a deep tillage to fracture these layers must occur prior to or during the soil fumigant application.

- Plant residue that is present must not interfere with the application or the soil seal. Non-decomposed plant material may harbor pests that will not be controlled by fumigation. Crop residue that is present must lie flat to permit the soil to be sealed effectively and limit the natural "chimneys" that may occur in the soil when plant residue is present. These "chimneys" allow the soil fumigants to move through the soil quickly and escape into the atmosphere. This may create potentially harmful conditions for workers and bystanders and limits the efficacy of the fumigant. Plant residue on the field serves to prevent soil erosion from both wind and water.

Tarps (when tarps are used in applications of this product)

- A written tarp plan must be developed and included in the FMP.
- Once a tarp is perforated, the application is no longer considered tarped.

Soil Temperature

- At the beginning of the application, the soil temperature must be between 35° and 90°F measured at 3 inches in depth.
- If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP. Record temperature measurements at the application depth or 12 inches, whichever is shallower.

Soil Moisture

- The soil moisture in the top six inches of soil must be between 60% to 80% of available water capacity immediately prior to the application, subject to the exception below.
- EXCEPTION: In areas where soil moisture must exceed available water capacity to form a bed (e.g., certain regions in Florida), soil moisture content may exceed 80%.
- If appropriate measuring equipment is not used to determine whether the soil moisture in the top six inches of soil is between 60% to 80% available water capacity immediately prior to the application, the USDA Feel and Appearance Method test may be used to estimate whether the 60% to 80% soil moisture content requirement is met:

For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50% to 75% of available water capacity) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.

For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.

For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50% to 75% of available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.

For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50% to 75% of available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

For **fields with more than one soil texture**, soil moisture content in the lightest textured (most sandy) areas must comply with this soil moisture requirement. The field may be divided into areas of similar soil texture and the soil moisture of each area should be adjusted as needed. Coarser textured soils can be fumigated under conditions of higher soil moisture than finer textured soils; however, if the soil moisture is too high, fumigant movement will be retarded and effectiveness of the treatment will be reduced. Previous and/or local experience with the soil to be treated or the crop to be planted can often serve as a guide to conditions that will be

acceptable. If there is uncertainty in determining the soil moisture content of the area to be treated, a local extension service or soil conservationist or pest control advisor (agriculture consultant) should be consulted for assistance.

- If there is insufficient moisture throughout the top six inches below the surface of soil immediately prior to the application, the soil moisture must be adjusted. If there is adequate soil moisture below six inches, soil moisture can be brought to the surface by tillage prior to the application. To conserve existing soil moisture, tillage should be done as close to the time of application as possible.

Application and Equipment Considerations

- Systems using a gravity flow pesticide dispersing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.
- Meter at a steady rate into 3 to 18 inches of water per treated acre during irrigation. IMPORTANT: Prior to starting the application, always inspect ditches and border areas to ensure containment of the irrigation waters. Apply only into field head ditch. DO NOT APPLY INTO ANY LATERAL DITCHES.
- Backflow prevention devices must be installed and in working order.
- Tanks must be in good condition to ensure product does not spill or leak.
- Dry disconnect couplings (closed transfer system) must be installed on all tanks and transfer hoses.
- Tanks must have sealable covers on access ports.
- Tanks must have proper pesticide labels affixed to them.
- All tanks, hoses, fittings, valves and connections must be serviceable, tightened, sealed and not leaking.
- Use only tanks, hoses and fittings designed to withstand the pressure of the system and resistant to metam.
- For undiluted product, aluminum, brass, copper, galvanized iron, and zinc materials cannot be used.
- To inject fumigant, use a metering system effectively designed and constructed of materials that are compatible with the fumigant capable of being fitted with the system interlocking controls.
- Flow rates must be calibrated and checked for each application.
- All previous materials applied with the system must be cleaned thoroughly prior to fumigant application.
- System must be flushed after application to totally remove all fumigant.

MAXIMUM APPLICATION RATE FOR PREPLANT SOIL USES

Maximum application rate is 320 lbs. metam sodium (100.6 gallons of this product) per acre.

CALCULATING THE BROADCAST EQUIVALENT APPLICATION RATE

To calculate the broadcast equivalent rate for bedded or strip applications the following information is needed:

- Gallons of product per treated acre
- strip or bed bottom width (inches)
- center-to-center row spacing (inches)
- application block size (acres)

Gallons of product **per treated acre** is the ratio of total amount of product applied to the size of the **total area treated** (e.g., the rate of product applied in the bed). For bedded or strip applications, the **total area treated** is the summation of the area (i.e., length x width) of each treated bed bottom or strip that is located within the application block as shown by the black areas in Figure 1 (e.g., black areas are 0.6A or 60% of the area within the application block). The area of the space between the beds/strips is not factored in the total area treated.

Figure 1. Bedded/Strip Application (1 acre application block)



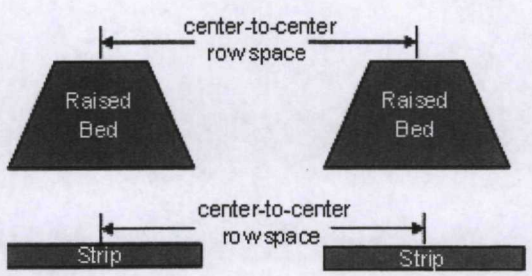
The **application block size** is the acreage within the perimeter of the fumigated portion of a field (including furrows, irrigation ditches, roadways). The perimeter of the application block is the border that connects the outermost edges of total area treated with the fumigant product.

The "broadcast equivalent rate" must be calculated with the following formula:

$$\text{broadcast equivalent rate (gallons of product per acre)} = \frac{\text{strip or bed bottom width (inches)}}{\text{center-to-center row spacing (inches)}} \times \text{Gallons of product per treated acre applied in the strip or bed}$$

- The bed width must be measured from the bottom of bed.
- The center-to-center row spacing must be calculated as shown in Figure 2.
- If there are any ditches, waterways, drive rows and other areas that are not fumigated that are in the application block, multiply the above broadcast equivalent equation by **(total area of strips or beds + row spacing)/(application block size)**. A sample calculation is provided below.

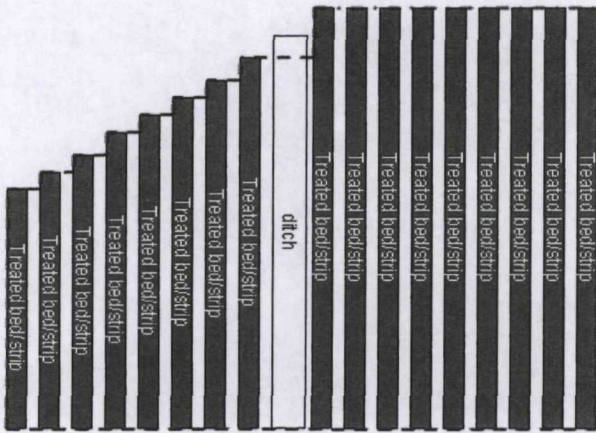
Figure 2. Center Row Spacing



Sample broadcast equivalent rate calculations

Assumptions:

- o Application method is shank bedded
- o Bed width is 30 inches (measured at the bottom of bed)
- o Center-to-center row spacing is 60 inches
- o 200 lbs of product per treated acre is applied in the beds
- o Total application block size is 10 acres
- o Ditch in the middle of application block is 0.25 acres
- o Area of beds + row spacing is 9.75 acres



$$\begin{aligned}
 \text{broadcast equivalent rate} &= \frac{\text{strip or bed bottom width (inches)}}{\text{center-to-center row spacing (inches)}} \times \frac{\text{area of strip or bed + row spacing}}{\text{application block size}} \times \text{pounds product per treated acre applied in the bed} \\
 &= \frac{30 \text{ inch width beds}}{60 \text{ inch row spacing}} \times \frac{9.75 \text{ acres}}{10 \text{ acres}} \times 200 \text{ pounds product per treated acre} \\
 &= 97.5 \text{ pounds product per acre}
 \end{aligned}$$

BUFFER ZONE REQUIREMENTS

A buffer zone must be established for every fumigant application. The following describes the general buffer zone requirements:

- An area established around the perimeter of each application block. The buffer zone must extend outward from the edge of the application block perimeter equally in all directions.
- All non-handlers, including field workers, residents, pedestrians, and other bystanders, must be excluded from the buffer zone during the buffer zone period except for transit (see *Buffer Zone Exemptions for Transit on Roadways*).
 - Local, state, or federal officials performing inspection, sampling, or other similar official duties are not excluded from the application block or the buffer zone by this labeling. The certified applicator supervising the application and the owner of the establishment where the application is taking place are not authorized to, or responsible for, excluding those officials from the application block or the buffer zone.
- The buffer zone period begins at the start of the application and lasts for a minimum of 48-hours after the application is complete.

Buffer Zone Proximity:

- Before the start of application, the certified applicator must determine whether their buffer zone will overlap any metam sodium or metam potassium (or other MITC generating pesticides) buffer zone(s).
- To reduce the potential for off-site movement from multiple fumigated fields, buffer zones from multiple metam sodium or metam potassium (or other MITC generating pesticides) application blocks must not overlap UNLESS:
 1. A minimum of 12 hours have elapsed from the time the earlier application(s) is complete until the start of the later application, and
 2. *Fumigant Site Monitoring or Response Information for Neighbors* have been implemented if there are any residences or businesses within 300 feet of any of the buffer zones.

In addition, only for Low Release Height-Solid Stream Center Pivot Applications:

- Before the application begins, the certified applicator must determine whether the application block or its resulting buffer will overlap with a buffer that is already in effect.
- To reduce the potential for off-site movement from multiple fumigated fields, buffer zones from multiple metam sodium or metam potassium application blocks may not overlap UNLESS:
 - Both application blocks are treated using low release height-solid stream center pivot systems. The 12 hour waiting period does not apply in this instance.

NOTE: Under this exception, buffer zones may only overlap with those from application blocks that are not within the same field (i.e., application blocks must be in separate fields that are treated with a different center pivot rig also equipped with low release height etc.) For buffers from application blocks within the same field to overlap, 12 hours must elapse from the completion of the first application until the start of the subsequent application.

 - Emergency preparedness and response measures specified in the label have been implemented if there are any homes, businesses, or property not within the control of the fumigator within 300 feet of each buffer zone.

Structures Under the Control of the Owner of the Application Block:

- Buffer zones must not include buildings used for storage (e.g., sheds, barns, garages), UNLESS:
 - The storage buildings are not occupied during the buffer zone period, and
 - The storage buildings do not share a common wall with an occupied structure.

Areas Not Under the Control of the Owner of the Application Block:

- Buffer zones must not include residential areas (e.g., employee housing, private property), buildings (e.g., commercial, industrial), outdoor residential areas (e.g., lawns, gardens, play areas) and other areas that people may occupy, UNLESS:
 1. The occupants provide written agreement, prior to the start of the application, that they will voluntarily vacate the buffer zone during the entire buffer zone period, and Reentry by occupants and other non-handlers must not occur until,
 - The buffer zone period has ended, and
 - Sensory irritation is not experienced upon re-entry.
- Buffer zones must not include agricultural areas owned and/or operated by persons other than the owner of the application block, UNLESS:
 1. The owner of the application block can ensure that the buffer zone will not overlap with a metam sodium or metam potassium (or other MITC generating pesticides) buffer zone from any other property owners, except as provided in the *Buffer Zone Proximity* section, and
 2. The owner of the other property provides written agreement to the applicator that they, their employees, and other persons will stay out of the buffer zone during the entire buffer zone period.
- Buffer zones must not include roadways and rights of way UNLESS:
 1. The area is not occupied during the buffer zone period, and
 2. Entry by non-handlers is prohibited during the buffer zone period.

Buffer Zone Exemptions for Transit on Roadways

Vehicular and bicycle traffic on public and private roadways through the buffer zone is permitted. (NOTE: Buffer zones are not permitted to include bus stops or other locations where persons wait for public transit.)

- For all other publicly owned and/or operated areas such as parks, sidewalks, permanent walking paths, playgrounds, and athletic fields, buffer zones must not include these areas UNLESS:
 1. The area is not occupied during the buffer zone period,
 2. Entry by non-handlers is prohibited during the buffer zone period, and
 3. Written permission to include the public area in the buffer zone is granted by the appropriate state and/or local authorities responsible for management and operation of the area.

Certified applicators must comply with all local laws and regulations.

See the *Posting* section for additional requirements that may apply.

BUFFER ZONE DISTANCES

Buffer zone distances must be calculated using the application rate and the size of the application block.

- Buffer zone distances must be based on look-up tables in this labeling (25 feet is the minimum distance regardless of site-specific application parameters).
- If after applying all applicable buffer zone credits the buffer zone is greater than ½ mile (2,640 ft), then the application is prohibited.
- Buffer Zone Tables 1 to 12 in Appendix A of this label presented as appropriate for the method of application must be used to determine the minimum buffer distances. Round up to the nearest rate and block size, where applicable. Applications are prohibited for rates or block sizes that exceed what is presented in the buffer zone tables.

BUFFER ZONE CREDITS

The buffer zone distances for applications of this product may be reduced by the percentages listed below. Credits may be added, but credits cannot exceed 80%. Also the minimum buffer zone distance is 25 feet regardless of buffer zone credits available.

- See www.tarpcredits.epa.gov for a list of tarps that have been tested and determined to qualify for buffer reduction credits. Only tarps listed on this website qualify for buffer reduction credits.
- 10% reduction in buffer zone distance, IF the organic content of the soil in the application block is ≥ 1% - 2%; a 20% reduction in buffer zone distance, IF the organic content of the soil in the application block is >2% - 3%; and a 30% reduction in the buffer zone distance, IF the organic content of the soil in the application block is >3%.
- 10% reduction in buffer zone distance, IF the soil temperature is measured to be 50°F or less. Record temperature measurements at the application depth or 12 inches, whichever is shallower.
- 10% reduction in the buffer zone distance, IF the clay content of the soil in the application block is greater than 27%.

Examples of Buffer Zone Calculations with Credits Applied

If the buffer zone is 50 feet and the application qualifies for a buffer zone reduction credit since the soil organic content is 1.5%, then the buffer zone can be reduced by 10%, i.e., reduced by 5 feet based on the following calculation: 50 feet – (50 feet x 10%) = 45 feet.

If the buffer zone is 50 feet and the application qualifies for two buffer zone credits since the soil organic content is 1.5% and the clay content is greater than 27%, then the buffer zone can be reduced by 20% (10% organic content credit + 10% clay content credit), i.e., reduced by 10 feet based on the following calculation 50 feet - (50 feet x 20%) = 40 feet.

POSTING FUMIGANT BUFFER ZONES

- Posting of a **buffer zone** is required unless there is a physical barrier that prevents bystander access to the buffer zone.
- Buffer Zone signs must be placed along or outside the perimeter of the buffer zone, at all usual points of entry and along likely routes of approach from areas where people not under the owner's control may approach the buffer zone.
 - Some examples of points of entry include, but are not limited to, roadways, sidewalks, paths, and bike trails.
 - Some examples of likely routes of approach include, but are not limited to, the area between a buffer zone and a roadway, or the area between a buffer zone and a housing development.
 - When posting, the certified applicator supervising the application must ensure compliance with all local laws and regulations.
- Buffer Zone signs must meet the following criteria:
 - ❖ The printed side of the sign must face away from the application block toward areas from which people could approach.
 - Signs must remain legible during the entire posting period and must meet the general standards outlined in the WPS for sign size, text size, and legibility (see 40 CFR §170.120).
 - Signs must be posted no sooner than 24 hours prior to the start of the application and remain posted until the buffer zone period has expired.
 - Signs must be removed within 3 days after the end of the buffer zone period.
 - Buffer Zone signs which meet the criteria above will be provided at points of sale for applicators to use. Templates may be downloaded from http://www.epa.gov/pesticides/reregistration/soil_fumigants/.
 - The Buffer Zone signs must contain the following information:
 - The 'Do Not Walk' symbol
 - DO NOT ENTER/NO ENTRE,
 - Metam Sodium Phume Soil Fumigant BUFFER ZONE,
 - Contact information for the certified applicator in charge of the fumigation.

Exception: If multiple contiguous blocks are fumigated within a 14-day period, the entire periphery of the contiguous blocks' buffer zones may be posted. Buffer Zone signs must be posted no sooner than 24-hours prior to the start of the first application. The signs must remain posted until the last buffer zone period expires and signs must be removed within 3-days after the buffer zone period for the last block has expired.

RESTRICTIONS FOR DIFFICULT TO EVACUATE SITES

Difficult to evacuate sites are pre-K to grade 12 schools, state licensed daycare centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons.

- No fumigant application with a buffer zone greater than 300 feet is permitted within 1/4 mile (1320 feet) of difficult to evacuate sites unless the site is not occupied by children from state-licensed day care centers, students (pre-K to grade 12), patients, or prisoners during the application and the 36-hour period following the end of the application.
- No fumigant application with a buffer zone of 300 feet or less is permitted within 1/8 mile (660 feet) of difficult to evacuate sites unless the site is not occupied by children from state-licensed day care centers, students (pre-K to grade 12), patients, or prisoners during the application and the 36-hour period following the end of the application.

EMERGENCY PREPAREDNESS AND RESPONSE MEASURES

If the buffer zone is 25 feet, then the *Emergency Preparedness and Response Measures* are not applicable.

Triggers for Emergency Preparedness and Response Measures:

The certified applicator must either follow the directions under the *Fumigant Site Monitoring* section or follow the directions under the *Response Information for Neighbors* section if:

- the buffer zone is greater than **25 feet** but less than or equal to **100 feet**, and there are residences or businesses within **50 feet** from the outer edge of the buffer zone, or
- the buffer zone is greater than **100 feet** but less than or equal to **200 feet**, and there are residences or businesses within **100 feet** from the outer edge of the buffer zone, or
- the buffer zone is greater than **200 feet** but less than or equal to **300 feet**, and there are residences or businesses within **200 feet** from the outer edge of the buffer zone, or
- the buffer zone is greater than **300 feet** or the **buffer zones overlap**, and there are residences or businesses within **300 feet** from the outer edge of the buffer zone.

Fumigant Site Monitoring:

NOTE: *Fumigant Site Monitoring* is ONLY required if the *Emergency Preparedness and Response Measures* are triggered AND directions from the *Response Information for Neighbors* section are not followed.

From the start of the application until the buffer zone period expires, a certified applicator or handler(s) under his/her supervision must:

- Monitor for sensory irritation in areas between the buffer zone outer perimeter and residences and businesses that trigger this requirement.
- Monitoring for sensory irritation must begin in the evening on the day of application and continue until the buffer zone period expires. Monitor a minimum of 8 times during the buffer zone period, including these periods:
 - 1 hour before sunset,
 - during the night,
 - 1 hour after sunrise, and
 - during daylight hours.

Implement the emergency response plan immediately if a handler monitoring experiences sensory irritation.

Response Information for Neighbors:

NOTE: *Response Information for Neighbors* is ONLY required if the *Emergency Preparedness and Response Measures* are triggered AND directions from the *Fumigant Site Monitoring* section are not followed.

The certified applicator supervising the application must ensure that residences and businesses that trigger the requirement have been provided the response information at least **1 week** before the application starts. The information provided may include application dates that range for no more than **4 weeks**. If the application does not occur when specified, the information must be delivered again.

Information that must be included:

- The location of the application block.
- Fumigant(s) applied including the active ingredient, name of the fumigant product(s), and the EPA Registration number.
- Contact information for the applicator and property owner.
- Time period in which the application is planned to take place (must not range more than 4 weeks).
- Early signs and symptoms of exposure to the fumigant(s) applied, what to do, and who to call if you believe you are being exposed (911 in most cases).
- How to find additional information about fumigants.

The method used to share the response information for neighbors can be accomplished through mailings, door hangers, or other methods that will effectively inform the residences and businesses within the required distance from the edge of the buffer zone.

NOTICE TO STATE AND TRIBAL LEAD AGENCIES

If your state and/or tribal lead agency requires notice, information must be provided to the appropriate state or tribal lead agency prior to the application. Please refer to www.epa.gov/fumigantstatenotice for a list of states and tribal lead agencies that require notice and information on how to submit the information.

The information that must be provided to state and tribal lead agencies includes the following:

- Location of the application blocks,
- Fumigant(s) applied including EPA registration number,
- Applicator and property owner contact information, and
- Time period that fumigation may occur.

EMERGENCY RESPONSE PLAN

The certified applicator must include in the FMP a written emergency response plan that identifies:

- evacuation routes,
- locations of telephones,
- contact information for first responders and local/state/federal/tribal personnel, and
- emergency procedures/responsibilities (e.g., adding water to the field, repairing tarps, fixing equipment, evacuating upwind) if:
 - o there is an incident,
 - o sensory irritation is experienced outside of the buffer zone, and/or there are equipment/tarp/seal failure or complaints, or other emergencies.

SITE-SPECIFIC FUMIGATION MANAGEMENT PLAN (FMP)

Prior to the start of application, the certified applicator supervising the application must verify that a site-specific FMP exists for each application block. In addition, an agricultural operation fumigating multiple application blocks may format the FMP in a manner whereby all of the information that is common to all the application blocks is captured once, and any information unique to a particular application block or blocks is captured in subsequent sections.

The FMP must be prepared by the certified applicator, the site owner, registrant, or other party.

The certified applicator must verify in writing (sign and date) that the site-specific FMP(s) reflects current site conditions before the start of application.

Each site specific FMP must contain the following elements:

- ❖ Certified Applicator Supervising the Application
 - Name,
 - Phone number,
 - Pesticide applicator license and/or certificate number,
 - Specify if commercial or private applicator,
 - Employer name,
 - Employer address, and
 - Date and location of completing EPA approved soil fumigant training program.
- ❖ General site information
 - Application block location (e.g., county, township-range-section quadrant), address, or global positioning system (GPS) coordinates
 - Name, address, and phone number of application block owner
 - Map, aerial photo, or detailed sketch showing:
 - application block location
 - application block dimensions
 - buffer zone dimensions
 - property lines
 - roadways
 - rights-of-ways
 - sidewalks
 - permanent walking paths
 - bus stops

- nearby application blocks
 - surrounding structures (occupied and non-occupied)
 - locations of Buffer Zone signs, and
 - locations of difficult to evacuate sites with distances from the application block labeled.
- ❖ General application information
 - Target application date/window,
 - Fumigant Product Name, and
 - EPA registration number.
 - ❖ Tarp Plan (if tarp is used)
 - Schedule for checking tarps for damage, tears, and other problems,
 - Minimum size of damage that will be repaired,
 - Factors used to determine when tarp repair will be conducted,
 - Equipment/methods used to perforate tarps,
 - Target dates for perforating tarps, and
 - Target dates for removing tarps.
 - ❖ Soil conditions
 - Description of soil texture and moisture in application block,
 - Method used to determine soil moisture, and
 - Soil temperature measurement if air temperatures were above 100°F in any of the 3 days prior to the application
 - ❖ Buffer zones
 - Application method,
 - Injection depth,
 - Application rate from lookup table on label,
 - Application block size from lookup table on label,
 - Credits applied and measurements taken (if applicable),
 - Tarp brand name, lot number, thickness, manufacturer, batch number, and part number
 - Organic matter content
 - Clay content
 - Soil temperature
 - Buffer zone distance, and
 - Description of areas in the buffer zone that are not under the control of the owner of the application block. If buffer zones extend onto areas not under the control of the owner, attach the written agreement and keep it with the FMP.
 - ❖ Record Emergency Response Plan as described in the *Emergency Response Plan* section.
 - ❖ Posting of Fumigant Treated Area and Buffer Zone
 - Person(s) who will post and remove (if different) Fumigant Treated Area and Buffer Zone signs, and
 - Location of Buffer Zone signs.
 - ❖ Emergency Preparedness and Response Measures (if applicable)
 - Fumigant site monitoring (if applicable):
 - When and where it will be conducted;
 - Response information for neighbors (if applicable):
 - List of residences and businesses informed,
 - Name and phone number of person providing information, and
 - Method of providing the information.
 - ❖ State and/or tribal lead agency advance notification (if state and/or tribal lead agency requires notice, provide a list of contacts that were notified and date notified)
 - ❖ Plan describing how communication will take place between the certified applicator supervising the application, the owner, and other on-site handlers (e.g., tarp perforators/removers, irrigators) for complying with label requirements (e.g., buffer zone location, buffer zone start and end times, timing of tarp perforation and removal, PPE).
 - Name and phone number of persons contacted by the certified applicator, and
 - Date contacted.
 - ❖ Handler (including Certified Applicators) Information and PPE
 - Names, addresses and phone numbers of handlers
 - Names, addresses, and phone numbers for employers of handlers

- Tasks that each handler is authorized and trained to perform
- Date of PPE training for each handler
- Applicable handler PPE including:
 - Long-sleeved shirts/long pants, shoes, socks
 - Chemical-resistant apron
 - Chemical-resistant footwear and socks
 - Protective eyewear (not goggles)
 - Chemical-resistant gloves
 - Air-purifying respirators
- ❖ Respirator make, model, type, style, size, and cartridge/canister type
 - Other PPE
- For handlers: Confirmation of receipt of Fumigant Safe Handling Information.
- For certified applicator(s) supervising the application: Completion date and location of the soil fumigant training program listed on the following EPA website <http://www.epa.gov/fumigantraining> for the active ingredient(s) in this product.
- For handlers designated to wear air-purifying respirators:
 - date of medical qualification to wear a respirator,
 - date of respirator training, and
 - date of fit-testing for the respirator.
- Unless exempted in the *Protection of Handlers* section, verify that:
 - at minimum 1 handler has the appropriate respirators and cartridges/canisters during handler activities, and
 - the employer has confirmed that the appropriate respirator and cartridges/canisters are immediately available for each handler who will wear one.
- ❖ Air monitoring plan
 - If sensory irritation is experienced, indicate whether operations will cease or operations will continue with use of an air-purifying respirator
 - For monitoring the breathing zone:
 - Representative handler tasks to be monitored,
 - Monitoring equipment to be used, and
 - Timing of the monitoring.
- ❖ Good Agricultural Practices (GAPs)
 - Identify (e.g., list, attach applicable label section) applicable mandatory GAPs.
- ❖ Pesticide Product Labels and Material Safety Data Sheets (MSDS)
 - Ensure that labels and MSDS are on-site and readily available for employees to review.

Record Keeping Procedures:

The owner of the application block as well as the certified applicator supervising the application must keep a signed copy of the site-specific FMP for 2 years from the date of application.

For situations where an initial FMP is developed and certain elements do not change for multiple application blocks (e.g., applicator information, certified applicator, handlers, record-keeping procedures, emergency procedures) only elements that have changed need to be updated in the site-specific FMP provided the following:

- The certified applicator supervising the application has verified that those elements are current and applicable to the application block before it is fumigated.
- Record-keeping requirements are followed for the entire FMP (including elements that do not change).

The certified applicator must make a copy of the FMP immediately available for viewing by handlers involved in the fumigation. The certified applicator or the owner of the application block must provide a copy of the FMP to any local/state/federal/tribal enforcement personnel who request the FMP. In the case of an emergency, the FMP must be made immediately available when requested by local/state/federal/tribal emergency response and enforcement personnel. The certified applicator supervising the application must ensure the FMP is at the application block during all handler activities.

Within 30 days after the application is complete, the certified applicator supervising the application must complete a Post-Application Summary.

POST-APPLICATION SUMMARY

The Post-Application Summary must contain the following elements:

- ❖ Actual date and time of the application,
- ❖ Application rate
- ❖ Size of application block
- ❖ Weather Conditions
 - Summary of the National Weather Service weather forecast during the application and the 48-hours after the application is complete including:
 - wind speed, and
 - air stagnation advisory (if applicable).
 - Forecast must be checked on the day of, but prior to the start of the application, and on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- ❖ Tarp damage and repair information (if applicable):
 - Date of tarp damage discovery,
 - Location and size of tarp damage,
 - Description of tarp/tarp seal/tarp equipment failure, and
 - Date and time of tarp repair completion.
- ❖ Tarp perforation/removal details (if applicable):
 - Date and time tarps were perforated,
 - Date and time tarps were removed, and
 - Record if tarps were perforated and/or removed early. Describe the conditions that caused early tarp perforation and/or removal.
- ❖ Complaint details (if applicable):
 - Person filing complaint (e.g., on-site handler, person off-site),
 - If off-site person, name, address, and phone number of person filing complaint, and
 - Description of control measures or emergency procedures followed after complaint.
- ❖ Description of incidents, equipment failure, or other emergency and emergency procedures followed (if applicable).
- ❖ Water-run application monitoring
 - Record monitoring date(s) and time(s)
 - Name of person(s) monitoring
 - Record observations:
 - Is the equipment functioning properly,
 - Description of corrective action (if applicable), and
 - Other comments.
- ❖ Air monitoring results:
 - When sensory irritation was experienced:
 - Date, time, location, and handler task/activity where irritation was observed and
 - Resulting action (e.g., implement emergency response plan, cease operations, continue operations with air-purifying respirators).
 - When using a direct read detection device:
 - Sample date(s), time(s), location(s), and concentration(s),
 - Handler task/activity monitored (if applicable), and
 - Resulting action (e.g., cease operations, continue operations with air-purifying respirators).
- ❖ Fumigant Treated Area and Buffer Zone Signs:
 - Dates of posting and removal.
- ❖ Any deviations from the FMP (e.g., changes in emergency response actions, changes in handler information, changes in handlers responsible for completing emergency tasks, changes in communication between certified applicator, owner, and other handlers).

Record-Keeping Procedures:

The owner of the application block, as well as the certified applicator supervising the application, must keep a signed copy of the Post-Application Summary for 2 years from the date of application.

PRODUCT INSTRUCTIONS

PRODUCT INFORMATION

This product is a water-soluble liquid. When applied to properly prepared soil, the liquid is converted into a volatile fumigant. After sufficient interval of time, the fumigant dissipates leaving the soil ready for planting. This product's effectiveness is based on contact of the gaseous phase with a respiring pest. This product will not control or suppress pests not actively respiring. This product does not provide residual control. If fumes become detectable during treatment, apply more water to seal the fumes into the soil where they should be confined to achieve maximum fumigation benefit. The activity of this product is increased by the use of tarp (plastic, paper or fabric) spread loosely over the treated areas and secured to prevent removal by wind. Keep covered for a minimum period of 48 hours. Seven days after treatment cultivate no deeper than the depth of treatment to aerate the soil. Do not seed or transplant earlier than 21 days or later after application when tarping method is used (see "TESTING OF TREATED SOIL BEFORE PLANTING" section). Use promptly after mixing with water. Do not allow solution to stand. Flush equipment with water after each day's use. Disassemble valves and clean carefully.

USE PRECAUTIONS

Keep children and pets out of treated areas. Uses of this product described on this label are intended for pre-plant soil preparation only. All plant foliage and any established plants growing on the treatment sites will either be severely damaged or destroyed. Keep the product off of any desirable turf or plants. Do not apply within 3 feet of drop line of desirable plants, shrubs, or trees. Do not use in confined areas without adequate ventilation or when fumes may enter nearby dwellings. Do not use in greenhouses. Keep container tightly closed when not in use. Do not store near feed or food. NOTE: This product will suppress and/or control only those pests in the fumigation zone at the time of treatment. Reinfestation may occur subsequent to the fumigants dissipation from the soil.

CHEMIGATION OF THIS PRODUCT

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) row, traveler, big gun, solid set, or hand move, flood (basin), furrow, border, or drip (trickle) irrigation systems. DO NOT apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact your State Extensions Service Specialist, equipment manufacturers, or other experts. Do not connect an irrigation system used for pesticide application to a public water system unless prescribed safety devices for public water systems stated on the pesticide label are in place. 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.

Chemigation Using a Public Water System

NOTE: DREXEL CHEMICAL DOES NOT ENCOURAGE CONNECTION OF CHEMIGATION SYSTEMS TO PUBLIC WATER SYSTEMS. The following information is provided for users who have evaluated alternative application and water source options before choosing to make such a connection. **OBSERVE THE FOLLOWING PRECAUTIONS IF YOUR CHEMIGATION SYSTEM IS CONNECTED TO A PUBLIC WATER SYSTEM:** A public water system is defined as 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. Chemigation systems must contain a functional, reduced pressure zone (RPZ), backflow preventer or the functional equivalents in the upstream water supply line from the point of pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and top of overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid 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, or in the 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. *Any alternatives to the above safety devices must conform to the list of EPA-approved alternative devices.*

Cultivation and Planting After Application

On well drained soils of light to medium texture which are not excessively wet or cold following application, planting may take place 14 to 21 days after treatment. If soils are heavy or especially high in organic matter or remain wet and/or cold (below 60 degrees) following application of this product, a minimum interval of 30 days should be observed. To avoid reinfesting treated soils, cultural practices should be such that untreated soils are not mixed with treated soils.

FIELD APPLICATION WHERE ENTIRE AREA IS BEING TREATED SOIL INJECTION

Apply with injector such as shanks, blades, fertilizer wheels, plows, etc. Apply this product at the rate of 50 to 100 gallons per treated acre. Follow immediately with a roller to smooth and compact the soil surface. Light watering or tarping after rolling helps prevent fumigant escape. It may be necessary to stagger the injector placement on two or more tool bars to prevent soil build up during application.

SOIL COVERING

This product may be applied as a broadcast application immediately in front of the soil covering equipment such as bed shapers, rotary tillers, discs, etc., to a minimum depth of 6 inches using a single pass to incorporate. Use 50 to 100 gallons of this product per treated acre followed immediately by a roller/packer to smooth and compact the soil surface.

ROTARY TILLER OR POWER MULCHER

Spray this product immediately in front of the tiller or mulcher, set to the depth to where control is desired. Use 50 to 100 gallons per treated acre. Follow immediately with a roller, power roller or bed shaper to seal the soil surface. Light watering or a tarp after rolling may be used to help prevent fumigant escape.

SPRINKLER SYSTEM

Use only those sprinkler system which gives large water droplet to prevent excessive loss. Use 50 to 100 gallons of this product per acre. Meter continuously throughout the injection period all of the product required to come in contact with the targeted pest in the treated zone. The desired depth of treatment obtained may be contingent upon soil moisture and type. Soil conditions must facilitate even moisture penetration without runoff. Flush lines following injection of this product. For proper application rate and placement, consult your local Drexel Sales Representative or County Extension Expert. Follow instructions set forth in the general instructions for sprinkler systems.

Prevention of treatment runoff: To prevent runoff of the treatment during a sprinkler application, do not apply this product at a rate greater than the absorption capacity of the field. Should runoff occur, isolate it from growing crops and water sources. Once collected, reapply to the treated field.

Check Flood (Basin), Furrow and Border: Meter this product at a steady rate into water during irrigation. Depending on the kind of pest and the treatment depth, use 50 to 100 gallons of this product per treated acre in 3 to 18 inches of water per acre. Meter this product into the irrigation water at the head of the field at a point with enough turbulence to assure adequate mixing of the product in the water. **IMPORTANT:** Prior to starting the application, always inspect ditches and border areas to ensure containment of the irrigation waters. Damage to bordering crops will occur if leaks develop. Apply only into field head ditch. **DO NOT APPLY INTO ANY LATERAL DITCHES.** Follow instructions set forth in the general instructions for sprinkler systems.

FIELD APPLICATION TO BEDS OR ROWS

Soil Injection: This product at the rate of 75 to 100 gallons per treated acre may be injected into pre-formed beds following the directions given previously under soil injection. If a wider treatment band is desired, space 2 or more shanks at intervals of 5 inches to the desired treating width. Roll immediately.

Soil Covering Method (Bed-Over Methods)

This product may be sprayed in a bed wide band onto the soil immediately ahead of bed shaping equipment. Cover this product with soil to a depth of 3 to 6 inches. The soil should be rolled and compacted immediately. Apply at the rate of 50 to 100 gallons of this product per acre of treated soil or 15 to 30 fluid ounces per 100 linear feet of row (12-inch bed). If a narrower or wider bed is to be treated, adjust the fluid ounces per 100 linear feet of row to reflect the actual treated acres (see "METHOD OF DETERMINING FLUID OUNCES PER 100 FEET OF LINEAR ROW" section).

Rotary Tiller or Power Mulcher

Spray this product immediately in front of the tiller or mulcher, set to the depth to where control is desired. Use 50 to 100 gallons per treated acre (see "METHOD OF DETERMINING FLUID OUNCES PER 100 FEET OF LINEAR ROW" section). Follow immediately with a roller, power roller or bed shaper to seal soil surface. Light watering or a tarp after rolling may be used to help prevent fumigant escape.

METHOD OF DETERMINING FLUID OUNCES PER 100 FEET OF LINEAR ROW

1. Determine width of treated band in feet by dividing width of band in inches by 12 (e.g., 8 in. ÷ 12 in./ft. = 0.666 ft.).
2. Determine square feet in 100 linear feet of band by multiplying the width of the band by 100 (e.g., 0.666 ft. × 100 ft. = 66.66 sq. ft.).
3. Determine the treated acres per 100 linear feet of band by dividing the square feet by 43,560 [square feet in an acre] (e.g., 66.66 sq. ft. ÷ 43,560 = 0.0015).
4. To determine the fluid ounces per 100 linear feet:
 - a) 1 gal. = 128 fl. ozs.; 50 gals. = 6,400 fl. ozs.; 100 gals. = 12,800 fl. ozs.
 - b) Multiply fluid ounces by acres. Example: 50 gals. = 6,400 fl.ozs. × 0.0015 = 9.6 fl. ozs. per 100 linear feet of row.

ADDITIONAL USE DIRECTIONS

MINT (SUPPRESSION OF VERTICILLIUM WILT)

When infestation is limited to small spots in a field, the spread of *Verticillium* can be reduced by treating the infected spot. Apply at the rate of up to 100 gallons of this product per treated acre using injector blade or thin shank injector rig. Follow directions for "FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED".

POTATOES

For suppression of potato pests such as nematodes, weed seeds and *Verticillium dahliae* (Early Maturity Disease): For soil injection, apply in a minimum of 50 gallons of this product per treated acre following the directions for "FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED". This product may also be applied at the rate of 67 to 100 gallons per acre using a Noble Plow blade set to 12 to 14 inches deep with spray nozzles spaced every 6 inches apart to give uniform coverage plus a surface application using a disc to immediately incorporate this product placed on the surface.

Early Maturity Diseases of Potatoes in the Pacific Northwest:

Apply 50 gallons of this product per treated acre using the soil injection method as described in the "FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED" section.

SPRINKLER SYSTEM PRE-PLANT APPLICATIONS

Apply 50 to 100 gallons of this product per acre in sufficient water to penetrate to the desired treatment depth. Meter continuously into the irrigation system throughout the entire application period. Soil temperature should be in the range of 40° to 90°F in the treatment zone. Soil moisture immediately prior to treatment must be 50 to 80% of field capacity down to the 24-inch level. Soil condition must facilitate even water penetration without runoff.

NOTES:

1. This product may be applied where a crop stubble or vegetation exists without prior tillage, provided there is adequate penetration of the product.
2. This product will suppress Root knot nematodes in the treatment zone at the time of treatment. The treatment zone is defined as the depth of penetration that this product achieves at the time of application. If high numbers or deep nematodes are identified, anticipate nematodes to build up throughout the growing season. Some damage may occur unless additional action is taken. This product has no residual activity and re-infestation of a treated field can occur from numerous sources such as deep nematode populations, seed pieces, irrigation water, equipment contamination and blowing wind.

TREATMENT OF TREE REPLANT SITES IN COMMERCIAL ORCHARDS

After removing dead or diseased trees and as much of the root system as possible, make a shallow basin over the planting site. Add this product to the stream of water while filling the basin. Use 1 quart of this product per 100 sq. ft. in sufficient water (depending on the soil type) to penetrate at least 6 feet. For control of Oak Root Fungus, use a basin of at least 20 ft. by 20 ft., increase dosage to 2 quarts per 100 sq. ft. in sufficient water to penetrate to the depth of the root system. If water is tanked to the planting site, add this product to the water and mix before filling the basin.

SYMPHYLID SUPPRESSION

Soil should be in good seedbed condition to a depth of 8 to 10 inches. Maintain adequate moisture during the Spring season to bring symphyllids to the upper soil surface. Treat during July through August when symphyllids are in the upper soil surface. Apply a minimum of 20 gallons of this product per treated acre (0.4 pint per 100 sq. ft. of treated soil) using blade or thin blade chisel injectors spaced 5 inches apart. Inject below the level of symphyllid concentration, usually 6 to 8 inches. Pack soil immediately after the application.

TOBACCO PLANT BEDS

Apply in the Fall whenever possible. Read and follow use directions carefully.

Drench Method

Apply 2.5 gallons of this product in 150 to 200 gallons of water per 100 square yards. Application may be made with sprinklers, sprayers with nozzles or any suitable equipment. Following directions given above for "FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED".

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry locked place out of reach of children. Keep container closed when not in use. Do not store below 32°F. Product crystallizes at lower temperatures. Warm or store at higher temperatures and mix to re-dissolve crystals and assure uniformity before use.

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 Hazardous Waste representative at the nearest EPA Regional office for guidance.

CONTAINER DISPOSAL:

Nonrefillable Container (rigid material; less than 5 gallons): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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.

Nonrefillable Container (rigid material; 5 gallons up to < 250 gals.): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill container one-fourth full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. 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.

Refillable Container (≥ 250 gals. 7 Bulk): Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable law, Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith. To the extent consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.

Table 3. Shank Injection Application - Bedded Buffer Zone Distances in Feet

Gal/A	Application Block Size (Acres)																									
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120	140	160
24	25	25	25	25	25	25	25	25	25	25	25	25	50	75	100	125	150	175	213	250	288	325	350	375	438	500
25	25	25	25	25	25	25	25	25	25	25	25	50	75	100	125	150	175	200	238	275	313	350	375	400	467	533
27	25	25	25	25	25	26	28	29	30	31	44	75	100	125	150	175	206	238	274	311	352	393	421	450	525	600
28	25	25	25	25	25	27	30	32	35	38	63	100	125	150	175	200	238	275	311	348	391	435	468	500	583	667
30	25	25	25	25	25	29	32	36	40	44	81	125	150	175	200	225	269	313	348	384	431	478	514	550	642	733
31	25	25	25	25	25	30	35	40	45	50	100	150	175	200	225	250	300	350	385	420	470	520	560	600	700	800
33	25	25	25	31	38	45	53	60	68	75	125	175	206	238	263	288	338	388	426	465	515	565	608	650	758	867
35	25	25	30	40	50	60	70	80	90	100	150	200	238	275	300	325	375	425	468	510	560	610	655	700	817	933
36	25	25	38	50	63	75	88	100	113	125	175	225	269	313	338	363	413	463	509	555	605	655	703	750	875	1000
38	25	30	45	60	75	90	105	120	135	150	200	250	300	350	375	400	450	500	550	600	650	700	750	800	933	1067
39	28	43	58	73	88	103	118	133	148	163	213	263	313	363	388	413	475	538	594	650	700	750	800	850	992	1133
41	40	55	70	85	100	115	130	145	160	175	225	275	325	375	400	425	500	575	638	700	750	800	850	900	1050	1200
42	53	68	83	98	113	128	143	158	173	188	238	288	338	388	413	438	525	613	681	750	800	850	900	950	1108	1267
44	65	80	95	110	125	140	155	170	185	200	250	300	350	400	425	450	550	650	725	800	850	900	950	1000	1167	1333
46	71	86	101	116	131	146	161	176	191	206	263	313	363	413	450	488	581	675	753	831	884	938	1000	1063	1240	1417
47	78	93	108	123	138	153	168	183	198	213	275	325	375	425	475	525	613	700	781	863	919	975	1050	1125	1313	1500
49	84	99	114	129	144	159	174	189	204	219	288	338	388	438	488	538	631	725	809	894	953	1013	1100	1188	1385	1583
50	90	105	120	135	150	165	180	195	210	225	300	350	400	450	500	550	650	750	838	925	988	1050	1150	1250	1458	1667
52	93	108	124	139	155	170	186	201	217	232	309	361	413	464	513	563	666	773	864	954	1018	1083	1186	1289	1504	1719
53	96	112	128	143	159	175	191	207	223	239	319	372	425	478	528	578	686	797	890	983	1049	1116	1222	1328	1549	1771
55	98	115	131	148	164	180	197	213	230	246	328	383	438	492	544	594	706	820	916	1012	1080	1148	1258	1367	1595	1823
57	101	118	135	152	169	186	203	219	236	253	338	394	450	506	561	611	725	844	942	1041	1111	1181	1294	1406	1641	1875
58	104	121	139	156	173	191	208	225	243	260	347	405	463	520	577	627	743	867	968	1070	1142	1214	1330	1445	1686	1927
60	107	125	143	160	178	196	214	232	249	267	356	416	475	534	593	643	761	891	995	1098	1173	1247	1366	1484	1732	1979
61	110	128	146	165	183	201	219	238	256	274	366	427	488	548	607	657	777	914	1021	1127	1204	1280	1402	1523	1777	2031
63	113	131	150	169	188	206	225	244	263	281	375	438	500	563	625	685	806	938	1047	1156	1234	1313	1438	1563	1823	2083
64	115	135	154	173	192	211	231	250	269	288	384	448	513	577	641	701	823	961	1073	1185	1265	1345	1473	1602	1868	2135
66	118	138	158	177	197	217	236	256	276	295	394	459	525	591	659	723	846	984	1099	1214	1296	1378	1509	1641	1914	2188
68	121	141	161	181	202	222	242	262	282	302	403	470	538	605	675	739	862	1000	1125	1243	1327	1411	1545	1680	1960	2240
69	124	144	165	186	206	227	248	268	289	309	413	481	550	619	689	753	876	1013	1152	1272	1358	1444	1581	1719	2005	2292
71	127	148	169	190	211	232	253	274	295	316	422	492	563	633	703	767	890	1027	1168	1301	1389	1477	1617	1758	2051	2344
72	129	151	173	194	216	237	259	280	302	323	431	503	575	647	719	783	906	1043	1184	1320	1410	1500	1653	1797	2096	2396
74	132	154	176	198	220	242	264	286	308	330	441	514	588	661	731	795	918	1055	1192	1330	1420	1510	1663	1806	2102	2402
75	135	158	180	203	225	248	270	293	315	338	450	525	600	675	748	812	935	1072	1210	1348	1438	1528	1681	1824	2120	2420

Table 4. Center Pivot and Lateral Move Application (High Release Height*) Buffer Zone Distance in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (Acres)															
	1	5	10	20	30	40	50	60	70	80	90	100	110	120	140	160
10	50	50	50	75	75	100	100	200	200	200	250	300	350	400	600	800
18	80	100	100	138	138	200	200	300	300	300	350	400	450	500	700	900
25	125	150	150	200	200	300	300	400	400	400	450	500	550	600	800	1000
31	160	188	200	250	269	363	382	475	488	500	550	600	650	700	900	1100
38	185	225	250	300	338	425	463	550	575	600	650	700	750	800	1000	1200
44	205	263	300	350	407	488	544	625	663	700	750	800	850	900	1100	1300
50	220	300	350	400	475	550	625	700	750	800	850	900	950	1000	1200	1400
57	235	313	375	450	557	638	719	825	888	950	1000	1050	1100	1150	1350	1550
63	250	325	400	500	638	725	813	950	1025	1100	1150	1200	1250	1300	1500	1700
69	262	338	425	550	719	813	907	1075	1163	1250	1300	1350	1400	1450	1650	1850
75	275	350	450	600	800	900	1000	1200	1300	1400	1450	1500	1550	1600	1800	2000
82	288	363	488	650	850	975	1100	1300	1400	1500	1563	1625	1688	1750	1950	2150
88	300	375	525	700	900	1050	1200	1400	1500	1600	1675	1750	1825	1900	2100	2300
94	312	389	563	750	950	1125	1300	1500	1600	1700	1788	1875	1963	2050	2250	2450
100.6	325	400	600	800	1000	1200	1400	1600	1700	1800	1900	2000	2100	2200	2400	2600

* This buffer zone distance table is for center pivot and lateral move irrigation equipment in which the: 1) release height OR spray height greater than 8 feet, and 2) there is > 30 lbs. psi at the sprinkler head.

Table 5. Center Pivot and Lateral Move Application (Medium Release Height*) Buffer Zone Distance in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (Acres)																
	Gal/A	1	5	10	20	30	40	50	60	70	80	90	100	110	120	140	160
10	25	25	25	25	25	50	50	75	75	75	88	100	150	200	400	600	
18	25	38	50	50	50	75	75	138	138	138	169	200	250	300	500	700	
25	25	50	75	75	75	100	100	200	200	200	250	300	350	400	600	800	
31	37	63	94	107	125	163	182	275	288	300	350	400	450	500	700	900	
38	50	75	113	138	175	225	263	350	375	400	450	500	550	600	800	1000	
44	62	88	132	169	225	288	344	425	463	500	550	600	650	700	900	1100	
50	75	100	150	200	275	350	425	500	550	600	650	700	750	800	1000	1200	
57	87	113	175	250	357	438	519	625	688	750	800	850	900	950	1150	1350	
63	100	125	200	300	438	525	613	750	825	900	950	1000	1050	1100	1300	1500	
69	112	138	225	350	519	613	707	875	963	1050	1100	1150	1200	1250	1450	1650	
75	125	150	250	400	600	700	800	1000	1100	1200	1250	1300	1350	1400	1600	1800	
82	138	263	288	450	650	775	900	1100	1200	1300	1363	1425	1488	1550	1750	1950	
88	150	175	325	500	700	850	1000	1200	1300	1400	1475	1550	1625	1700	1900	2100	
94	162	188	363	550	750	925	1100	1300	1400	1500	1588	1675	1763	1850	2050	2250	
100.6	175	200	400	600	800	1000	1200	1400	1500	1600	1700	1800	1900	2000	2200	2400	

* This buffer zone distance table is for center pivot irrigation and lateral move equipment in which the: 1) release height AND spray height is less than 8 feet, AND 2) 29 lbs. or less PSI at the sprinkler head, AND 3) there are no end guns.

Table 6. Center Pivot and Lateral Move Application (Low Release Height-Solid Stream*) Buffer Zone Distance in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (Acres)																
	Gal/A	1	5	10	20	30	40	50	60	70	80	90	100	110	120	140	160
10	25	25	25	25	25	25	25	50	63	75	88	100	125	150	350	550	
18	25	25	38	38	38	50	50	75	100	125	138	150	188	225	425	625	
25	25	25	50	50	50	75	75	100	138	175	188	200	250	300	500	700	
31	30	35	63	70	75	107	119	150	192	232	254	275	325	375	575	775	
38	35	50	75	89	100	138	163	200	244	288	319	350	400	450	650	850	
44	40	63	88	107	125	169	207	250	297	344	385	425	475	525	725	925	
50	50	75	100	125	150	200	250	300	350	400	450	500	550	600	800	1000	
57	60	94	125	157	188	238	294	363	419	475	532	588	644	700	900	1100	
63	70	113	150	188	225	275	338	425	488	550	613	675	738	800	1000	1200	
69	85	132	175	219	263	313	382	488	557	625	694	763	832	900	1100	1300	
75	105	150	200	250	300	350	425	550	625	700	775	850	925	1000	1200	1400	
82	125	163	225	288	350	413	494	613	694	775	857	938	1019	1100	1300	1500	
88	145	175	250	325	400	475	563	675	763	850	938	1025	1113	1200	1400	1600	
94	165	188	275	363	450	538	632	738	832	925	1019	1113	1207	1300	1500	1700	
100.6	185	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	

* This buffer zone distance table is for center pivot irrigation and lateral move equipment in which the: 1) release height AND spray height is less than 4 feet, AND 2) 29 lbs. or less PSI at the sprinkler head, AND 3) application system produces a solid stream (e.g. drizzle boom/Smart Drop®), AND 4) there are no end guns.

Table 7. Solid Set Sprinkler Application Buffer Zone Distance in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (Acres)																						
	Gal/A	1	2	3	4	5	6	7	8	9	10	20	30	40	50	60	70	80	90	100	110	120	
10	25	25	25	25	25	25	25	25	25	25	25	25	25	50	50	75	75	75	88	100	150	200	
18	38	38	38	38	38	40	43	45	48	50	50	50	75	75	138	138	138	169	200	250	300		
25	50	50	50	50	50	55	60	65	70	75	75	75	100	100	200	200	200	250	300	350	400		
31	55	57	58	60	63	69	75	81	87	94	107	125	163	182	275	288	300	350	400	450	500		
38	62	65	67	70	75	83	90	98	105	113	138	175	225	263	350	375	400	450	500	550	600		
44	68	73	78	83	88	97	106	114	123	132	169	225	288	344	425	463	500	550	600	650	700		
50	75	81	88	94	100	110	120	130	140	150	200	275	350	425	500	550	600	650	700	750	800		
57	80	88	97	105	113	125	138	150	163	175	250	357	438	519	625	688	750	800	850	900	950		
63	87	97	106	116	125	131	140	146	155	200	300	438	525	613	750	825	900	950	1000	1050	1100		
69	93	104	116	127	138	155	173	190	208	225	350	519	613	707	875	963	1050	1100	1150	1200	1250		
75	100	113	125	138	150	170	190	210	230	250	400	600	700	800	1000	1100	1200	1100	1300	1350	1400		
82	115	152	189	226	263	268	273	278	283	288	450	650	775	900	1100	1200	1300	1363	1425	1488	1550		
88	125	138	150	163	175	205	235	265	295	325	500	700	850	1000	1200	1300	1400	1475	1550	1625	1700		
94	137	150	163	175	188	223	258	293	328	363	550	750	925	1100	1300	1400	1500	1588	1675	1763	1850		
100.6	150	163	175	188	200	240	280	320	360	400	600	800	1000	1200	1400	1500	1600	1700	1800	1900	2000		

Table 9. Drip Application Buffer Zone Distances in Feet

Gal/A	Application Block Size (Acres)																
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	60	70	80
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
9	25	25	25	25	25	25	25	25	25	25	38	38	50	50	63	76	88
13	25	25	25	25	25	25	25	25	25	25	50	50	75	75	100	125	150
16	25	25	25	25	25	26	28	29	31	32	57	57	82	82	113	140	163
19	25	25	25	25	25	28	30	33	35	38	63	63	88	88	125	150	175
22	25	25	25	25	25	29	33	36	40	44	69	69	94	94	138	163	188
25	25	25	25	25	25	30	35	40	45	50	75	75	100	100	150	175	200
28	25	27	29	30	32	37	42	47	52	57	82	94	113	125	175	207	238
31	25	28	32	35	38	43	48	53	58	63	88	113	125	150	200	250	275
35	25	30	35	39	44	49	54	59	64	69	94	132	138	175	225	269	313
38	25	31	38	44	50	55	60	65	70	75	100	150	150	200	250	300	350
41	32	37	41	46	50	56	63	69	76	82	125	188	200	250	300	350	400
44	38	41	44	47	50	58	65	73	80	88	150	225	250	300	350	400	450
47	44	46	47	49	50	59	68	76	85	94	175	263	300	350	400	450	500
50	50	50	50	50	50	60	70	80	90	100	200	300	350	400	450	500	550
53	51	52	53	54	55	64	74	85	96	106	213	319	372	425	478	531	584
57	52	54	56	58	60	68	79	90	101	113	225	338	394	450	506	563	634
60	53	56	59	62	65	71	83	95	107	119	238	356	416	475	534	594	684
63	54	58	62	66	70	75	88	100	113	125	250	375	438	500	563	625	734
66	55	60	65	70	75	79	92	105	118	131	263	394	459	525	591	656	784
69	56	62	68	74	80	83	96	110	124	138	275	413	481	550	619	688	834
72	57	64	71	78	85	86	101	115	129	144	288	431	503	575	647	719	884
75	58	66	75	82	90	90	105	120	135	150	300	450	525	600	675	750	934

Broadcast Equivalent Application Rate (Gallons product/A)

Table 11. Rotary Tiller and Spray Blade Applications Buffer Zone Distance in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (Acres)													
	1	5	6	7	8	9	10	20	30	40	50	60	70	80
10	25	25	25	25	25	25	25	25	25	25	25	25	25	25
18	25	25	25	25	25	25	25	25	25	25	25	25	25	25
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
31	25	25	25	25	25	25	25	25	25	25	25	25	25	25
38	25	25	25	25	25	25	25	25	25	25	25	25	25	25
44	25	25	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25	25	25
57	25	25	25	25	25	25	25	25	25	25	42	57	64	72
63	25	25	25	25	25	25	25	25	25	25	58	88	103	118
69	25	25	25	25	25	25	25	25	25	25	74	119	142	164
75	25	25	25	25	25	25	25	25	25	25	90	150	180	210
82	25	25	27	29	30	32	34	49	64	75	135	188	218	248
88	25	25	29	32	36	39	43	73	103	125	180	225	255	285
94	25	25	30	36	41	47	52	97	142	275	225	263	293	323
100.6	25	25	32	39	46	53	60	120	180	225	270	300	330	360

Table 12. Weed Sprayer Application Buffer zone Distances in Feet

Broadcast Equivalent Application Rate (Gallons product/A)	Application Block Size (acres)													
	1	5	10	20	30	40	50	60	70	80	90	100	110	120
10	50	50	50	75	75	100	100	200	200	200	250	300	350	400
18	80	100	100	138	138	200	200	300	300	300	350	400	450	500
25	125	150	150	200	200	300	300	400	400	400	450	500	550	600
31	160	188	200	250	269	363	382	475	488	500	550	600	650	700
38	185	225	250	300	338	425	463	550	575	600	650	700	750	800
44	205	263	300	350	407	488	544	625	663	700	750	800	850	900
50	220	300	350	400	475	550	625	700	750	800	850	900	950	1000
57	235	313	375	450	557	638	719	825	888	950	1000	1050	1100	1150
63	250	325	400	500	638	725	813	950	1025	1100	1150	1200	1250	1300
69	262	338	425	550	719	813	907	1075	1163	1250	1300	1350	1400	1450
75	275	350	450	600	800	900	1000	1200	1300	1400	1450	1500	1550	1600
82	288	363	488	650	850	975	1100	1300	1400	1500	1563	1625	1688	1750
88	300	375	525	700	900	1050	1200	1400	1500	1600	1675	1750	1825	1900
94	312	389	563	750	950	1125	1300	1500	1600	1700	1788	1875	1963	2050
100.6	325	400	600	800	1000	1200	1400	1600	1700	1800	1900	2000	2100	2200