



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

DEC 27 2011

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Julie Porter

AMVAC
4695 MacArthur Court
Suite 1250
Newport Beach, CA 92660

Subject: METAM 376
EPA Reg. No. 5481-456
Phase 2 RED Mitigation Amendment Label Dated July 29, 2011
EPA Decision Number 459140

Dear Ms. Porter:

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 2 - In the Table of Contents, the word "Requirements" is misspelled in Agricultural Use Requirements.
2. Page 4 - In the Agricultural Use Requirements box, fix the spelling of "requirements".
3. Page 6 - Under Certified Applicator Training, delete the "(s)" in "ingredient(s)".
4. Page 11 - Under Soil Temperature, revise the first bullet to delete the word "is" so it reads: "At the beginning of the application, the soil temperate must be between..."
5. Page 13-14 - In the Calculating the Broadcast Equivalent Application Rate section, delete the reference to pounds on pages 13 and 14 since this product is applied by the gallon. Changes should be made:
 - i. (p. 13) In the first bullet under "To calculate the broadcast equivalent rate...."

- ii. (p. 13) At the beginning of the second paragraph beginning "Pounds [or gallons] of product per treated acre..."
 - iii. (p. 14) Twice in the formula at the top of the page.
6. Pages 18-19 - The minimum font size for the entire labeling is 12 pt. Make sure the buffer zone tables meet this requirement.
7. Page 21 - Under "Restrictions for Difficult to Evacuate Sites," reformat the section like this:
"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."
8. Page 26 - Delete the "Drip Application Monitoring" section.
9. Pages 27-33 - Replace the text in the Product Instructions section with the text for that section from the previously accepted METAM 376 label, stamped April 30, 2010. The Product Instructions section should read as follows:

"PRODUCT INSTRUCTIONS

Before applying METAM 376 to areas with poor water penetration or severe compaction prepare the turf by hollow core aerification or other available methods to increase water penetration. NOTE: Do not use wetting agents to increase water penetration into the turf profile within 7 days of treatment.

Product Information

METAM 376 is a water soluble liquid. When applied to soil, the liquid is converted into a volatile fumigant (Methylisothiocyanate, MITC). After a sufficient interval of time, the gas degrades/dissipates.

When to Use Maximum and Minimum Rates

The application rate of METAM 376 is dependent on the soil type to be treated, density or thickness of the thatch layer and depth of the desired treatment. Generally, a light sandy soil requires a lower application rate than a heavier

mineral soil. In addition, turf with a dense or thick thatch generally requires the higher rate.

Planning the Application

METAM 376 may be applied to turf grasses any time of the year when chronic nematode damage is adversely affecting the quality of the turf grass. Do not repeat the application within 30 days.

Phytotoxicity

Use of METAM 376 in accordance with the label may cause temporary discoloration (phytotoxicity) to some turf. Before using this product, it is recommended that a small area be treated to determine the level of phytotoxicity, if any, on your turf grass. Discoloration, if any, will appear within 7 days.

NOTE: Higher rates may cause more discoloration than lower rates. For test procedures and additional information contact your local METAM 376 distributor or Amvac Chemical Corporation.

Use of Diluted Metam 376

Do not store the diluted product. Do not allow the diluted solution to stand overnight. Use the diluted solution promptly after mixing with water. Flush all equipment with water after each day's use, disassemble valves and clean carefully.

Use Precautions

Keep children and pets out of treated areas. All plant foliage and any established plants growing on the treatment sites will be either severely damaged or destroyed. Keep the product off of any desirable turf or plants. Do not apply within 3 feet of the drip line of desirable plants, shrubs, or trees. Keep container tightly closed when not in use. Do not store near feed or food. **NOTE:** METAM 376 will suppress and/or control only those pests in the fumigation zone at the time of treatment. Reinfestation may occur subsequent to the fumigants degradation/dissipation from the soil.

DIRECTIONS FOR USE ON TURF GRASS

Spray On and Irrigate Into Soil

Application rates: Use 5.14 to 15.4 fluid ounces per 1,000 sq. ft. which is equal to 1.75 to 5.25 gallons of product per treated acre.

Application Notes:

1. Mix 1.75 to 5.25 gallons of METAM 376 in 100 gallons of total spray liquid (1.75 to 5.25 gallons of METAM 376 in 98.75 to 94.75 gallons of water respectively) for each treated acre. This is equivalent to 5.14 to 15.4 fluid ounces per 2.29 gallons of water per 1,000 sq. ft.
2. Apply using a spray boom with low pressure spray tips that produce large droplet sizes. Select spray tip size and ground speed per manufacturer recommendations to maintain spray boom pressure of 30 psi or less. Do not

exceed 30 psi on the spray boom. NOTE: Total coverage of the turf foliage is not necessary as METAM 376 is a soil fumigant.

3. Following spray application irrigate at least twice with sufficient water to penetrate the soil profile 3 to 5 inches deep. The volume of water will vary with soil type and depth of control desired. First irrigation to be initiated within 20 minutes of spray application. Apply second irrigation within one hour of the spray application. A third irrigation may be required to penetrate the soil to the desired depth. Do not exceed 0.5 inches of water on each irrigation. .

SOIL DRENCH PRE-PLANT APPLICATION TO TURF

Application Rates: Use 0.51 to 1.54 fluid ounces per 100 sq. ft. which is equal to 1.75 to 5.25 gallons of product per treated acre.

Application Notes:

1. Mix 0.51 to 1.54 fluid ounces of MET AM 376 in 62 gallons of water and drench onto 100 sq. ft. (62 gallons of water per 100 sq. ft. is equivalent to 1 inch of water per treated acre.) NOTE: Use diluted product within one hour of mixing.
2. Apply with a pump capable of delivering 10 to 15 gallons per minute at 15 to 25 psi.
3. Immediately after application, irrigate with 0.1 inch of water.
4. Application of METAM 376 by the soil drench method should be limited to treatment of small areas only."

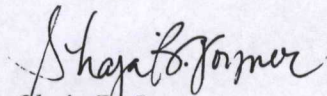
Note: The current storage and disposal and warranty sections should follow this text.

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,

A handwritten signature in cursive script, reading "Shaja B. Joyner". The signature is written in dark ink and is positioned above the printed name.

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.

METAM 376

For Turf Grasses

A SOIL FUMIGANT SOLUTION FOR CONTROL OR SUPPRESSION OF NEMATODES AND TO REDUCE THEIR DAMAGING EFFECTS ON TURF GRASSES SUCH AS BERMUDA, FESCUE AND RYE GRASS ON GOLF COURSES.

Not for use on turf being grown for sale or for other commercial use as sod, or for commercial seed production, or for research purposes.

ACTIVE INGREDIENT:

Sodium methyldithiocarbamate (anhydrous)..... 38.0%

OTHER INGREDIENTS:62.0%

TOTAL: 100.0%

*Contains 3.76 lbs. Metam Sodium per gallon

U.S. Patent No. 4,994,487 AND 5,075,332.

KEEP OUT OF REACH OF CHILDREN

DANGER - PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
If on skin or clothing:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 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:	<ul style="list-style-type: none">• 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:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have a 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 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: CHEMTREC 1-800-424-9300
Other: AMVAC 1-323-264-3910

NOTE TO PHYSICIAN

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

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.EPA

Reg. No. 5481-456

EPA Est. No. 5481-CA-01



4100 E. Washington Blvd.
Los Angeles, CA 90023 U.S.A
1-323-264-3910

Net Weight:

As Marked on Container

**ACCEPTED
with COMMENTS
In EPA Letter Dated**

DEC 27 2011

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

5481-456

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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 frequently 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 or viton ≥ 14 mils. For more options, follow the instructions for category H on the chemical-resistance category selection chart.

Handlers transferring or loading liquid formulations, handlers operating motorized ground equipment with open cabs, handlers repairing or inactivating irrigation 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 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 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:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling 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, 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. 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.

The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

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 into 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.

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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."

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 any type of irrigation 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 the Worker Protection Standard (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 Worker Protection Standard (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, 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 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/fumiganttraining>.

Exclusion of Non Handlers from Application Block and Buffer Zone

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 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.

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.

Air-Purifying Respirator Availability

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 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 sample(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 respirator, 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 sample(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 where 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 Restricted Period

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 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.

NOTE:

- 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 Fumigant in USE,"
- The date and time of fumigation,
- The date and time entry restricted period is over,
- "METAM 376", 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 the 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.

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 applications 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 is 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 to 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.

MAXIMUM APPLICATION RATES FOR PRE-PLANT SOIL FUMIGATION

Maximum Application Rates for Pre-Plant Soil Uses

- Maximum application rate is 320 lbs metam sodium/A (85 gallons per treated acre).

CALCULATING THE BROADCAST EQUIVALENT APPLICATION RATE

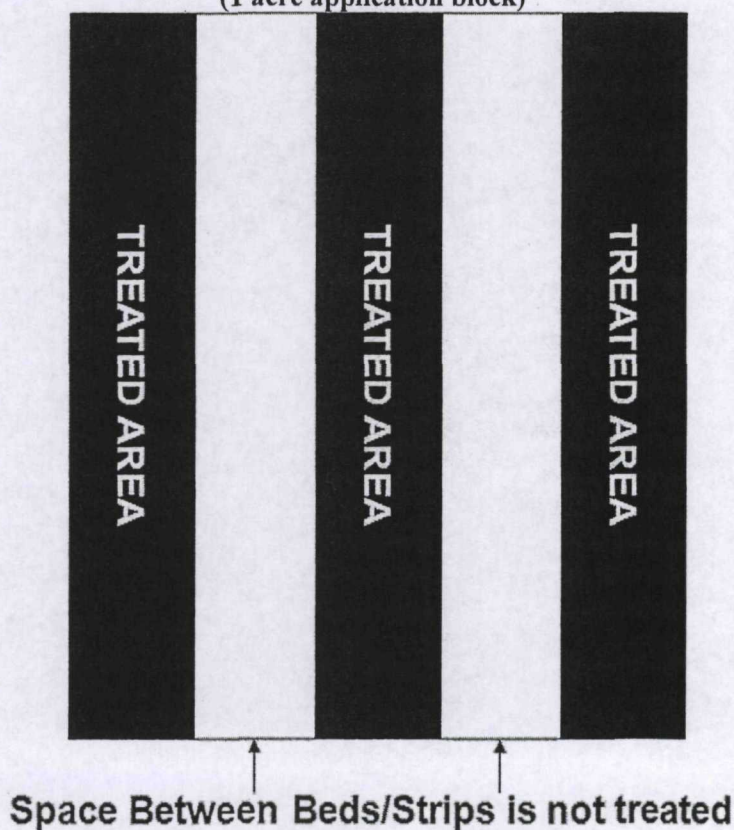
To calculate the broadcast equivalent rate for bedded or strip applications the following information is needed:

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

Pounds (or 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.

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.

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



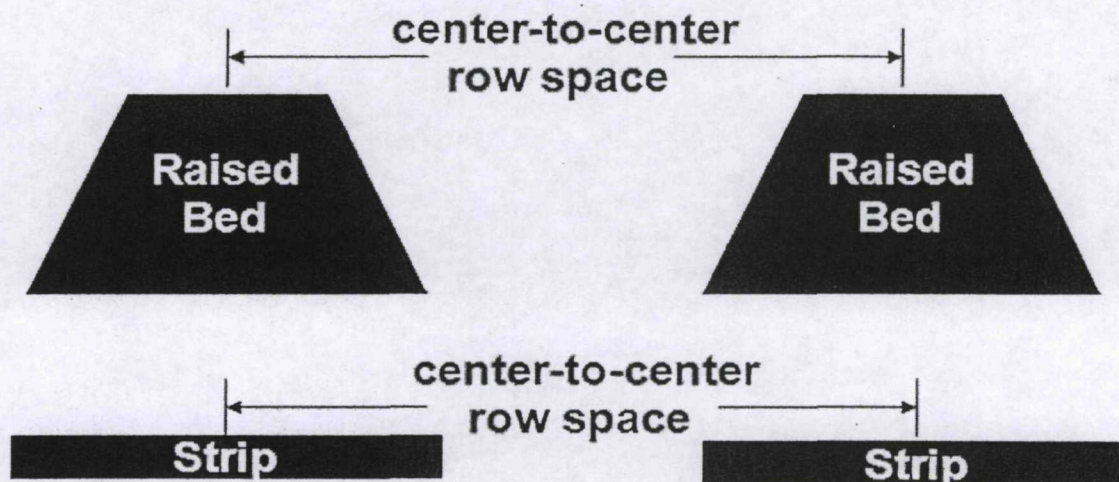
The "broadcast equivalent rate" must be calculated with the following formula:

$$\begin{array}{lcl} \text{Broadcast equivalent rate} & & \text{pounds (or gallons) of} \\ \text{(pounds (or gallons)} & = & \text{product/} \\ \text{product/acre)} & & \text{treated acre} \\ & & \text{applied in the} \\ & & \text{strip or bed} \end{array}$$

$$\frac{\text{strip or bed bottom width (inches)}}{\text{center-to-center row spacing (inches)}} \times$$

- The bed width must be measured from the bottom of the 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.

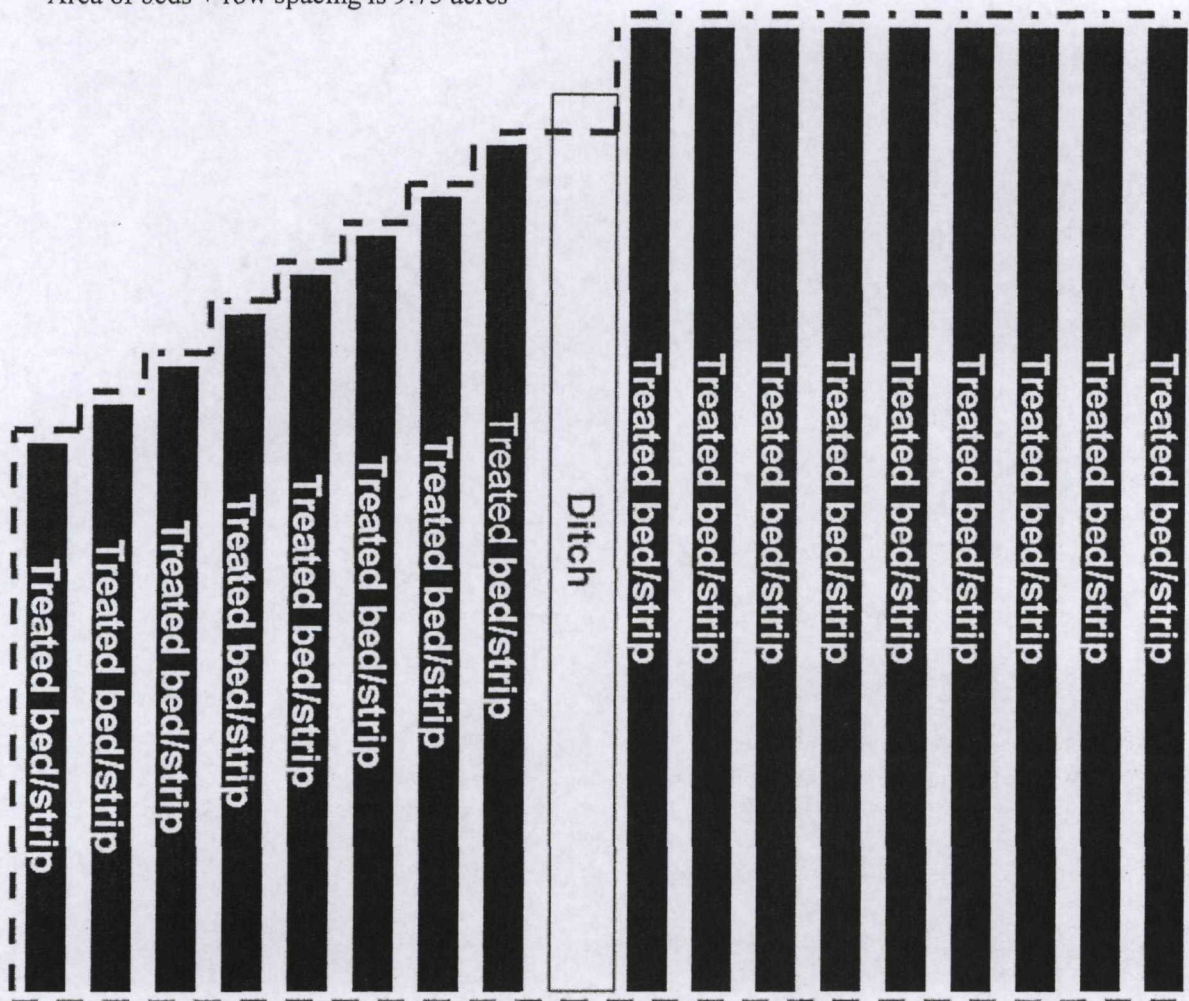
Figure 2. Center Row Spacing



Sample broadcast equivalent rate calculation

Assumptions:

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



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

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.

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
 2. 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.
- Tables 1-2 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 Tables

Table 1. Drench Application 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	120	140	160	180	200	220	240	260	280	300	
7	28	31	34	36	39	42	44	47	51	55	70	86	94	102	109	125	141	156	164	180	195	201	211	224	234	244	254	264	274	284	294	304	
8	34	37	41	44	47	50	53	56	61	66	84	101	113	122	131	150	169	188	197	216	231	238	251	261	271	281	291	301	311	321	331	341	351
9	40	44	47	51	55	58	62	66	71	77	98	120	133	142	153	175	197	219	230	252	273	285	308	318	328	338	348	358	368	378	388	398	408
10	46	50	54	58	63	67	71	75	81	88	113	138	150	163	175	200	225	250	263	288	313	325	348	358	368	378	388	398	408	418	428	438	448
11	51	56	61	66	70	75	80	84	91	98	127	155	169	183	197	225	253	281	295	323	352	364	387	397	407	417	427	437	447	457	467	477	487
12	57	62	68	73	78	83	88	94	102	109	141	171	188	203	217	245	273	301	315	343	372	384	407	417	427	437	447	457	467	477	487	497	507
13	63	68	74	80	86	92	97	103	112	120	155	188	206	223	241	275	303	331	345	373	402	414	437	447	457	467	477	487	497	507	517	527	537
14	69	75	81	87	94	100	106	113	122	131	169	206	225	244	263	300	328	356	370	400	430	442	465	475	485	495	505	515	525	535	545	555	565
15	74	81	88	95	102	108	115	122	132	142	183	223	244	264	284	325	356	386	400	430	460	472	495	505	515	525	535	545	555	565	575	585	595
16	80	87	95	102	109	117	124	131	142	153	197	241	263	284	305	340	372	402	416	446	476	488	511	521	531	541	551	561	571	581	591	601	611
17	86	94	101	109	117	125	133	141	152	164	211	258	281	303	325	360	394	424	438	468	498	510	533	543	553	563	573	583	593	603	613	623	633
18	91	100	108	117	125	134	142	150	163	175	225	275	300	323	345	380	414	444	458	488	518	530	553	563	573	583	593	603	613	623	633	643	653
19	97	106	115	124	133	142	150	159	173	186	239	292	319	343	365	400	434	464	478	508	538	550	573	583	593	603	613	623	633	643	653	663	673
20	103	112	122	131	141	150	159	168	183	197	253	309	336	360	382	416	450	480	494	524	554	566	589	599	609	619	629	639	649	659	669	679	689
21	109	118	128	138	148	159	168	178	193	208	267	327	356	380	402	436	470	500	514	544	574	586	609	619	629	639	649	659	669	679	689	699	709
22	114	124	135	146	156	167	177	188	203	219	281	344	375	400	422	456	490	520	534	564	594	606	629	639	649	659	669	679	689	699	709	719	729
23	119	131	142	153	164	175	186	197	213	230	295	361	394	417	440	474	508	538	552	582	612	624	647	657	667	677	687	697	707	717	727	737	747
24	125	137	149	160	172	184	195	206	223	241	309	378	413	437	460	494	528	558	572	602	632	644	667	677	687	697	707	717	727	737	747	757	767
25	131	143	155	167	180	192	203	216	234	252	323	395	431	457	480	514	548	578	592	622	652	664	687	697	707	717	727	737	747	757	767	777	787
26	137	149	162	175	188	200	212	225	244	263	338	413	450	476	500	534	568	598	612	642	672	684	707	717	727	737	747	757	767	777	787	797	807
27	143	155	169	182	195	209	221	234	254	273	352	430	469	506	532	566	596	630	660	690	704	727	737	747	757	767	777	787	797	807	817	827	837
28	148	162	176	189	203	217	230	244	264	284	366	447	488	524	548	582	612	646	676	706	720	743	753	763	773	783	793	803	813	823	833	843	
29	154	168	182	197	211	225	239	253	274	295	380	464	506	532	556	590	620	654	684	714	728	751	761	771	781	791	801	811	821	831	841	851	
30	159	174	189	204	219	234	248	263	284	305	394	481	525	551	575	609	639	673	703	717	737	757	777	787	797	807	817	827	837	847	857	867	
31	165	180	196	211	227	243	258	272	293	317	408	498	543	569	593	627	657	691	721	735	755	775	795	815	825	835	845	855	865	875	885	895	
32	171	187	203	218	234	250	265	281	305	328	422	516	563	590	614	648	678	702	716	736	756	776	796	816	826	836	846	856	866	876	886	896	
33	176	193	209	225	241	257	274	291	315	339	436	533	581	609	633	667	697	721	735	755	775	795	815	835	845	855	865	875	885	895	905	915	
34	182	199	216	233	250	267	283	300	325	350	450	550	600	650	700	800	900	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	
35	188	205	223	240	258	275	292	309	335	361	464	567	615	644	668	702	732	756	770	790	810	830	850	870	890	910	930	950	970	990	1010	1030	
36	193	211	230	248	266	284	301	319	345	371	478	584	633	662	686	720	750	774	788	808	828	848	868	888	908	928	948	968	988	1008	1028	1048	
37	199	218	236	255	273	292	310	328	355	383	492	602	651	680	704	738	768	792	806	826	846	866	886	906	926	946	966	986	1006	1026	1046	1066	
38	205	224	243	262	281	300	318	336	366	394	506	616	665	694	718	752	782	806	820	840	860	880	900	920	940	960	980	1000	1020	1040	1060	1080	
39	210	230	250	269	288	308	327	347	376	405	520	630	679	708	732	766	796	820	834	854	874	894	914	934	954	974	994	1014	1034	1054	1074	1094	
40	216	236	257	277	297	317	336	356	386	416	534	644	693	722	746	780	810	834	848	868	888	908	928	948	968	988	1008	1028	1048	1068	1088	1108	
41	222	243	263	284	305	325	345	366	396	427	548	658	707	736	760	794	824	848	862	882	902	922	942	962	982	1002	1022	1042	1062	1082	1102	1122	
42	228	249	270	291	313	334	354	375	406	438	563	673	722	751	775	809	839	863	877	897	917	937	957	977	997	1017	1037	1057	1077	1097	1117	1137	
43	233	255	277	299	320	342	363	384	416	448	577	687	736	765	789	823	853	877	891	911	931	951	971	991	1011	1031	1051	1071	1091	1111	1131	1151	
44	239	261	284	306	328	350	371	394	427	459	591	701	750	779	803	837	867	891	905	925	945	965	985	1005	1025	1045	1065	1085	1105	1125	1145	1165	
45	245	267	290	313	336	359	380	403	437	470	605	715	764	793	817	851	881	905	919	939	959	979	999	1019	1039	1059	1079	1099	1119	1139	1159	1179	
46	250	274	297	320	344	367	389	413	447	481	619	729	778	807	831	865	895	9191															

Table 2. Spray on and Irrigate Application Buffer Zone Distances in Feet

Gal/A	Application Block Size (acres)														Broadcast Equivalent Application Rate (Gallons product/A)
	1	5	10	20	30	40	50	60	70	80	90	100	110	120	
9	50	50	50	75	75	100	100	200	200	200	250	300	350	400	
15	80	100	100	138	138	200	200	300	300	300	350	400	450	500	
21	125	150	150	200	200	300	300	400	400	400	450	500	550	600	
27	160	188	200	250	269	363	382	475	488	500	550	600	650	700	
32	185	225	250	300	338	425	463	550	575	600	650	700	750	800	
37	205	263	300	350	407	488	544	625	663	700	750	800	850	900	
43	220	300	350	400	475	550	625	700	750	800	850	900	950	1000	
48	235	313	375	450	557	638	719	825	888	950	1000	1050	1100	1150	
53	250	325	400	500	638	725	813	950	1025	1100	1150	1200	1250	1300	
59	262	338	425	550	719	813	907	1075	1163	1250	1300	1350	1400	1450	
64	275	350	450	600	800	900	1000	1200	1300	1400	1450	1500	1550	1600	
69	288	363	488	650	850	975	1100	1300	1400	1500	1563	1625	1688	1750	
74	300	375	525	700	900	1050	1200	1400	1500	1600	1675	1750	1825	1900	
80	312	389	563	750	950	1125	1300	1500	1600	1700	1788	1875	1963	2050	
85	325	400	600	800	1000	1200	1400	1600	1700	1800	1900	2000	2100	2200	

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BUFFER ZONE CREDITS

The buffer zone distances for METAM 376 applications 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 $\geq 1\%$ - 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: $50 \text{ feet} - (50 \text{ feet} \times 10\%) = 45 \text{ feet}$.

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 $50 \text{ feet} - (50 \text{ feet} \times 20\%) = 40 \text{ feet}$.

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 METAM 376 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:

- there is an incident,
- 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/fumiganttraining> 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).
- ❖ 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).
- ❖ Drip 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.
- ❖ 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

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. Use promptly after mixing with water. Do not allow solution to stand.

Mycorrhizae: There are occasions when METAM 376 is known to temporarily reduce mycorrhizae in agricultural soils. For those crops that are mycorrhizae dependent and planted into METAM 376-treated soils, it is necessary to practice a good fertilizer program until the mycorrhizae repopulate the treated area.

PRODUCT INFORMATION

METAM 376 is a water soluble liquid. When applied to soil, the liquid is converted into a volatile fumigant (Methylisothiocyanate, MITC). After a sufficient interval of time, the fumigant degrades/dissipates leaving the soil ready for planting.

WHEN TO USE MAXIMUM AND MINIMUM RATES

The application rate of METAM 376 is dependent on the soil type to be treated and the position in the soil of the pest to be suppressed or controlled. For maximum control or suppression, an understanding of the pest, its location and its respiring state will ensure maximum performance of METAM 376. Generally, a light sandy soil requires a lower application rate than a heavier mineral soil. In addition, if the pest is in the upper portion of the soil profile (annual weeds), a lower application rate is generally required than if the pest is deeper in the soil profile and deeper penetration is desired (perennial weed seeds and nematodes). When a range of application rates is given in this label, consult your local agricultural extension service for more specific information.

Nematodes and Nutsedge: Nematode suppression is achieved when METAM 376 converts to MITC and makes contact with active forms of the nematodes, preferably juveniles. Endo-parasites in plant residue may not be suppressed. Plant residues from previously infected crops should be completely decomposed prior to METAM 376 application to ensure maximum exposure. Eggs are more difficult to suppress than juveniles, but are susceptible. Pre-irrigation has been demonstrated to stimulate egg hatch of some species and may enhance overall METAM 376 performance. Nutsedge may be suppressed with METAM 376 if actively growing and a high use rate is used (75 gal/acre). More often, rhizomes, roots and shoots will be controlled but the tuber will remain viable and at a later time regrow. Treatments made immediately prior to a crop planting (after the necessary waiting period) will give a weed-free period for crop establishment.

USE PRECAUTIONS

Keep children and pets out of treated areas. METAM 376 uses 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 be either severely damaged or destroyed. Keep the product off of any desirable turf or plants. Do not apply within 3 feet of the drip line of desirable plants, shrubs, or trees. Do not use in greenhouses. Keep container tightly closed when not in use. Do not store near feed or food. NOTE: METAM 376 will suppress and/or control only those pests in the fumigation zone at the time of treatment. Reinfestation may occur subsequent to the fumigants degradation/dissipation from the soil.

TREATMENT GUIDELINES

For optimum results, certain procedures should be observed at designated times in the treatment program. Described below are important guidelines for each of the four stages of the treatment process. Consult your Sales Representative for the appropriate treatment program for your particular needs.

- Pre-Application
- Field Preparation Prior to Application
- Application
- Pre-Planting After Application of METAM 376

PRE-APPLICATION

METAM 376 is applied post-harvest and 14 to 21 days before a new crop is planted (see "Testing of Treated Soil Before Planting" section). In some areas, fall application is preferred as the product will degrade/dissipate over the winter that allows planting to begin as soon as favorable springtime conditions arrive.

Application Rate

Apply 1.75 to 5.25 gallons of product per treated acre depending on crop, target pest and soil properties (or see crop-specific considerations in the Additional Information section of this label). Some of the soil properties to consider when determining the application rate include soil texture, percent organic matter and depth of soil to be treated.

Target Pest and Depth of Treatment

When application rates for this product are given in ranges, use the higher rate if pests (insects, nematodes, etc.) are present in high numbers or if the area to be treated has a history of pest problems. Consult with your State nematologist, entomologist and plant pathologist to determine if crop rotation is more feasible or desirable than fumigation. NOTE: This product will only suppress or control pests that are in the fumigated zone at time of treatment. For control of weeds and fungi which cause seed or seedling diseases, treatment of only the top 2 to 4 inches of soil may be required (see application specific requirements in the Good Agricultural Practices section of this label). Treatment depths greater than 4 inches may be required for control of nematodes and fungi which occur throughout the rhizosphere. The required application rate should be increased proportionately with the depth of the treatment required. Always choose the appropriate application method to evenly distribute this product throughout the soil to the required treatment depth.

Soil Characteristics

Soil properties to consider when determining the application rate of this product include the depth of soil to be treated, soil texture, and percent organic matter. Due to the absorbing effect of humus, soils with high levels of organic matter under the surface require higher rates. For example, muck soil may require twice the rate that would be used in mineral soils. Application rates will also vary with soil texture. For example, heavy clay soils require a higher rate than light sandy soils.

Phytotoxicity

METAM 376 is phytotoxic. Protect valuable, non-target plants by stopping soil applications of this product at least three feet short of the drip line of trees, shrubs and other desirable plants. For sprinkler application, crop injury and lack of effectiveness can result from non-uniform distribution of the treated water.

APPLICATION OF METAM 376

Apply according to the methods and rates outlined below under the section "Uses, Rates and Application Methods."

Use of Diluted METAM 376

Do not store the diluted product. Do not allow the diluted solution to stand overnight. Use the diluted solution promptly after mixing with water. Flush all equipment with water after each day's use; disassemble valves and clean carefully.

Application in Tank Mix with Liquid Fertilizer

METAM 376 may be injected in a mixture with liquid fertilizers, however, a dual injection system is preferred.

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Since the composition of liquid fertilizers vary considerably, the physical compatibility of each METAM 376/fertilizer tank mix should be checked by using the following procedure:

Mix a small quantity of METAM 376 and liquid fertilizer in the same ratio as they will be applied to the field e.g., if 37.5 gallons of METAM 376 and 37.5 gallons of liquid fertilizer are to be applied per treated acre, then the mixture should be mixed in a 37.5:37.5 or 1:1 ratio. Mix in a glass container. Mixing should be done outdoors and out of direct sunlight. Agitate the liquids to attain a complete uniform mixture. IF A UNIFORM MIX CANNOT BE MADE, THE MIXTURE SHOULD NOT BE USED! If the mixture remains uniform for 30 minutes without agitation, the combination may be used. Should the mixture separate after 30 minutes but is readily remixed with agitation, the mixture can be used if adequate agitation is maintained in the tank.

DO NOT PLACE CAPS ON MIX JAR AS INCOMPATIBLE MIXES MAY EVOLVE HYDROGEN SULFIDE GAS. USE PROMPTLY AFTER MIXING WITH WATER OR FERTILIZER. DO NOT ALLOW THE SOLUTION TO STAND. FLUSH ALL EQUIPMENT WITH WATER AFTER EACH DAY'S USE. DISASSEMBLE VALVES AND CLEAN CAREFULLY.

CHEMIGATION OF METAM 376

When applying by chemigation methods, the following directions or warnings must be observed:

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, 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 Extension Service Specialists, 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: AMVAC 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: 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. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and top of overflow rim of the reservoir tank of at least 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.

Any alternatives to the required safety devices in this label must conform to the list of EPA-approved alternative devices.

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

Sprinkler & Drip Chemigation Systems

See "Field Application Where Entire Area is Being Treated" under Use, Rates and Application Methods section of this label.

PRE-PLANTING AFTER APPLICATION OF METAM 376**Effects of Rain**

If rain occurs within 24 hours after a METAM 376 application, lack of control at and near the soil surface may occur.

Recontamination

Precautions must be taken to prevent recontamination of treated fields with plant pathogenic fungi, plant parasitic nematodes or weed seed. Use clean seeds or plants. Before farm equipment is driven into the treated area, it should be rinsed free of untreated soil and weed seeds from other fields.

Days to Cultivating or Planting After Application

Because METAM 376 is harmful to germinating seeds and living plants, an appropriate interval must be observed between treatments and planting. On well-drained soils which have a light to medium texture and which are not excessively wet or cold following the application, planting can begin 14 to 21 days after treatment. If soils are heavy or especially high in organic matter or if the soil remains wet and/or cold (below 35°F) following the application, a minimum interval of 21 days or greater should be observed. The interval before planting should be extended until the soil is sufficiently dry to allow for cultivation.

Cultivation of Soil Before Planting

IMPORTANT: Heavier soils including soils high in clay or organic matter should be allowed to aerate and dry thoroughly after treatment with METAM 376. During cold and/or wet weather, frequent shallow cultivation can aid dissipation of METAM 376 from the treated soil.

On heavy, wet soils, light surface cultivation to break up crusting and promote drying should be done 5 to 7 days after treatment if planting is to occur within 14 to 21 days after treatment. This cultivation may be repeated as necessary.

NOTE OF CAUTION: To avoid contaminating treated soils, care should be taken to assure that untreated soils are not mixed with treated soils.

Testing of Treated Soils Before Planting

Fields are fumigated to control soil-borne fungi, nematodes, insects, and weeds. The length of time required for fumigants to dissipate/escape from the soil before plants can safely be planted varies greatly. Typically 14 to 21 days are needed under typical conditions; however, circumstances which do not favor evaporation of the fumigant can greatly lengthen the waiting period as much as up to 30 days. The release period is short with (1) low rates of fumigants, (2) light soil, (3) high soil temperatures, (4) low soil moisture, (5) shallow application depth, and (6) repeated cultivations after fumigation. Seeded crops are less susceptible to residual soil fumigant injury than transplanted crops. In general, fumigants escape slowly from cold, wet, heavy soils.

If in doubt, perform either the lettuce seed test or the tomato transplant test as described elsewhere in this label. If germination occurs in 1 to 3 days or if tomato plant shows signs of wilting or root burn in 2 days, the product is still available and an extended wait period must be observed.

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PACIFIC NORTHWEST STATES OF IDAHO, NEVADA, OREGON AND WASHINGTON

NOTE: When applied in the spring, allow a minimum of 14 to 21 days before planting providing no fumes are detectable. When the soil temperature is below 35°F allow a minimum of 21 days before planting. Check for fumes and aerate as needed. Use a seedling indicator plant with a hot cap to check for activity or fumes (or follow instructions in preceding paragraph). DO NOT plant if fumes are detectable or injury to plant has occurred. Re-aerate the soil and check again.

USES, RATES AND APPLICATION METHODS

FIELD APPLICATION WHERE ENTIRE AREA IS BEING TREATED

Application Over Cover Crops: METAM 376 can be applied through center pivot or solid set sprinkler systems on cover crops that are living and less than approximately eight inches tall such as alfalfa, clover, and grasses such as rye, oats, wheat, and sudan. When applied on cover crops, no soil cultivation is required before the application. The terminated crop must not be used for any food or feed purposes after METAM 376 has been applied.

Prevention of Treatment Runoff: To prevent runoff of the treatment during a sprinkler application, do not apply METAM 376 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.

PACIFIC NORTHWEST ONLY

SOIL INJECTION: METAM 376 may be applied using (1) a single shank spaced no more than 6 inches apart and a spray nozzle 6 inches deep; (2) a single shank spaced no more than 6 inches apart and spray nozzles spaced 6 to 12 inches deep; (3) a single sweep spaced no more than 12 inches apart and sweep blades 12 inches wide with a spray nozzle that will give broadcast coverage from sweep tip to sweep tip; (4) a double-winged shank spaced no more than 12 inches apart and 9 inches between the wings with spray nozzles giving uniform coverage; (5) a Noble Plow Blade with spray nozzles spaced every 6 inches and set to 12 to 14 inches deep using a disc to immediately incorporate the METAM 376 placed on the surface. All soil injection applications must be followed immediately with a roller/packer to smooth and compact the soil surface. Regardless of which method used, you must use 1.75 to 5.25 gallons of METAM 376 per treated acre (or see crop-specific considerations in the Additional Information section of this label).

When applying METAM 376 with injector blades, such as Noble Plow Blades in spring, the following precautions must be followed:

- Apply all fertilizers after the METAM 376 application. Wait a minimum of 7 days before making the fertilizer application.
- Thoroughly aerate the soil 5 to 7 days after the METAM 376 application by plowing, shallow ripping or discing, or the combination thereof, to allow the fumes to dissipate (if tarps are used, refer to the Tarp Perforation and/or Removal Section for additional guidance on timing of these activities). Do not work soil deeper than the depth of treatment.
- If soil temperatures are below 35°F, delay planting for a minimum of 21 days from the day of the METAM 376 application regardless of any other precautions that may have been taken.
- In conjunction with the delayed planting, set indicator plants (such as tomatoes) in various places in the treated field with a "hot cap" left undisturbed for a minimum of 24 hours to ensure all of the METAM 376 has left the soil. (See "Testing of Treated Soil Before Planting" section.)

FIELD APPLICATION TO BEDS OR ROWS

SOIL INJECTION (Pre-formed Beds): METAM 376 may be injected into pre-formed plant beds following the directions in the "Soil Injection" section above. If a wider treated band is desired, space 2 or more shanks at

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intervals of 5 inches to cover the desired treating width. Use thin injection shanks and inject METAM 376 4 inches deep into well prepared soil. Follow immediately with a bedshaper, roller press wheel or similar device, or cover with an adequate amount of soil to seal the fumigant into the soil. Light watering or a tarp after rolling may be used to help prevent fumigant escape. Apply at the rate of 1.75 to 5.25 gallons per treated acre (or see crop-specific considerations in the Additional Information section of this label) (see "Method of Determining Fluid Ounces per 100 Feet of Linear Row" section). Place shanks 5 inches apart to cover the desired treating width.

SOIL INJECTION (*At Bed Forming Operation*): METAM 376 may be injected during the bedding or row building process, or to pre-formed beds, using one of the following delivery systems: (1) single narrow knife blade (2) a series of narrow knife blades set no more than 5 inches apart, (3) a spray blade, (4) tiered shanks, (5) spray rake or (6) similar equipment that places METAM 376 in contact with the pest to be controlled or suppressed. The use rate for the above operations is 1.75 to 5.25 gallons per treated acre (or see crop-specific considerations in the Additional Information section of this label). Reduced rates will vary depending upon the actual width of the treated band desired (see "Method of Determining Fluid Ounces per 100 Feet of Linear Row" section). Apply the METAM 376 at the desired depth in the soil and follow immediately with the soil capping operation, bedding process, or roller/packer to seal the fumigant into the soil.

SOIL COVERING METHOD (*Bed-Over Methods*): METAM 376 may be sprayed in a bed wide band onto the soil immediately ahead of bed shaping equipment. Cover the METAM 376 with soil to a depth of 3 to 6 inches. The soil should be rolled and compacted immediately. Apply at the rate of 1.75 to 5.25 gallons per acre of treated soil (or see crop-specific considerations in the Additional Information section of this label) or 11 to 22 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/100 linear feet of row to reflect the actual treated acres (see "Method of Determining Fluid Ounces per 100 Feet of Linear Row" section).

DRENCH APPLICATION ON BEDS OR ROWS: METAM 376 may be applied to finished beds for control of shallow seeded weeds. Cultivate the area to be treated and pre-irrigate in accordance with Use Directions. Apply 1.75 to 5.25 gallons of METAM 376 per treated acre (or see crop-specific considerations in the Additional Information section of this label) in a band or bands in enough water to soak at least 2 inches deep (see "Method of Determining Fluid Ounces per 100 Feet of Linear Row" section). To avoid contamination by untreated soil, do not disturb the treated area.

ROTARY TILLER OR POWER MULCHER: Spray METAM 376 immediately in front of the tiller or mulcher, set to the depth to where control is desired. Use 1.75 to 5.25 gallons per treated acre (or see crop-specific considerations in the Additional Information section of this label) (see "Method of Determining Fluid Ounces per 100 Feet of Linear Row" section). Follow immediately with a roller, power roller or bedshaper 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. band = 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. x 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. oz.; 50 gals = 6400 fl. oz.; 100 gals = 12,800 fl. oz.
 - b) Multiply fluid ounces by acres. Example: 50 gals. = 6400 fl. oz. x 0.0015 = 9.6 fl. oz. per 100 linear feet row.

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ADDITIONAL INFORMATION

DIRECTIONS FOR USE ON TURF GRASS

SPRAY ON AND IRRIGATE INTO SOIL

Application rates: Use 5.14 to 15.4 fluid ounces per 1,000 sq. ft. which is equal to 1.75 to 5.25 gallons of product per treated acre.

Application Notes:

1. Mix 1.75 to 5.25 gallons of METAM 376 in 100 gallons of total spray liquid (1.75 to 5.25 gallons of METAM 376 in 98.75 to 94.75 gallons of water respectively) for each treated acre. This is equivalent to 5.14 to 15.4 fluid ounces per 2.29 gallons of water per 1,000 sq. ft.
2. Apply using a spray boom with low pressure spray tips that produce large droplet sizes. Select spray tip size and ground speed per manufacturer recommendations to maintain spray boom pressure of 30 psi or less. Do not exceed 30 psi on the spray boom. NOTE: Total coverage of the turf foliage is not necessary as METAM 376 is a soil fumigant.
3. Following spray application irrigate at least twice with sufficient water to penetrate the soil profile 3 to 5 inches deep. The volume of water will vary with soil type and depth of control desired. First irrigation to be initiated within 20 minutes of spray application. Apply second irrigation within one hour of the spray application. A third irrigation may be required to penetrate the soil to the desired depth. Do not exceed 0.5 inches of water on each irrigation.

SOIL DRENCH PRE-PLANT APPLICATION TO TURF

Application Rates: Use 0.51 to 1.54 fluid ounces per 100 sq. ft. which is equal to 1.75 to 5.25 gallons of product per treated acre.

Application Notes:

1. Mix 0.51 to 1.54 fluid ounces of METAM 376 in 62 gallons of water and drench onto 100 sq. ft. (62 gallons of water per 100 sq. ft. is equivalent to 1 inch of water per treated acre.) NOTE: Use diluted product within one hour of mixing.
2. Apply with a pump capable of delivering 10 to 15 gallons per minute at 15 to 25 psi
3. Immediately after application, irrigate with 0.1 inch of water.
4. Application of METAM 376 by the soil drench method should be limited to treatment of small areas only.

USE DIRECTIONS FOR SEQUENTIAL GROUND APPLICATION OF TELONE II AND METAM 376

Sequential application of TELONE II and METAM 376 for suppression of *Verticillium dahliae* and control of *Root Knot* and *Lesion* nematodes in soils to be planted to potatoes in the Pacific Northwest.

The following use directions provide information for a sequential treatment program of applications of TELONE II soil fumigant and METAM 376 soil fumigant. For best results, apply both TELONE II and METAM 376 in the fall. Alternative treatment schedules include a fall application of TELONE II followed by a spring application of METAM 376, a fall application of METAM 376 followed by a spring application of TELONE II, or a spring application of both products. Due to time constraints resulting from varying weather conditions, a spring application may result in delayed planting.

NOTE: The "Use Directions for the Pacific Northwest" may be used in other areas of the country, if not prohibited elsewhere on the label. Consult your local Sales Representative or extension personnel for further directions or recommendations.

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STORAGE AND DISPOSAL

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

STORAGE: Do not expose to extreme temperatures. Do not stack more than four drums high. Leaking or damaged drums should be placed in overpack drums for disposal. Spills should be absorbed in sawdust or sand and disposed of in a sanitary landfill. Keep container closed when not in 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 Protection Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

CONTAINER DISPOSAL:

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if appropriate. Triple rinse container (or equivalent) 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 1/4 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. Repeat this procedure two more times.

Refillable container. Refill this container with sodium or potassium methyldithiocarbamate only. Do not reuse this container for any other purpose. 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 percent 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.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

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