**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**DANGER. EXTREMELY HAZARDOUS LIQUID AND VAPOR UNDER PRESSURE. FATAL IF SWALLOWED OR INHALED. CORROSIVE. CAUSES SKIN BURNS AND IRREVERSIBLE EYE DAMAGE. WHICH MAY RESULT IN A BLIND OR A DEATED EYE. DO NOT BREATHE VAPOR OR GAS. INHALATION MAY CAUSE SERIOUS ACUTE ILLNESS OR DELAYED LUNG, NERVE, OR BRAIN INJURY. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.**

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. For more information, follow the instructions for Category H on the chemical-resistance category selection chart. PPE constructed of Saranex, neoprene, and chlorinated polyethylene provide short-term contact or splash protection against liquid in this product. Longer-term protection is provided by PPE constructed of Viton, Teflon, and EVAL barier laminates (for example, responder suits manufactured by Life-Guard or Silvershield gloves manufactured by North). Where chemical-resistant materials are required, however, asparagus, or cotton materials offer no protection from this product and must not be worn as the sole article of protection when contact with this product is possible.

When performing tasks with NO potential for contact with liquid fumigant, all handlers (including applicators) must:

- Wear long-sleeved shirt, long pants, shoes and socks.
- Not wear jewelry, goggles, tight clothing, chemical-resistant gloves, rubber protective clothing, or rubber boots while handling. Methyl bromide can be trapped inside clothing and cause skin injury.

 Handlers with no potential for contact with liquid fumigant (e.g. shovelers) may wear cotton, leather, or other non-permeable, chemical-resistant gloves. If such gloves become wet, they must immediately be removed and discarded.
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In all cases of overexposure, get medical attention immediately. Take person to a doctor or to an emergency treatment facility.

IF INHALED: Move person to fresh air.

IF IN SWALLOWED: Call a poison control center or doctor immediately for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing.

IF IN EYES: Hold eyes open and rinse slowly and gently with water for 15-20 minutes.

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

EMERGENCY PHONE NUMBER: Chemtrec, 1-800-424-9300

NOTE TO PHYSICIAN

Early symptoms of overexposure to methyl bromide are dizziness, headache, nausea and vomiting, weakness, and collapse. Lung edema may develop in 2 to 48 hours after exposure, accompanied by cardiac irregularities; these effects are the usual cause of death. Repeated overexposures can result in blurred vision, staggering gait, and mental imbalance, with probable recovery after a period of no exposure. Blood bromide levels suggest the occurrence, but not the degree, of exposure. Treatment is symptomatic.

Date of Labeling: October 30, 2012

P. O. Box 782 • Hollister • CA 95024-0782

(831) 630-2258

EPA Reg. No. 8536-5

EPA Est. 11220-CA-4

Pic-Brom 33
Pre-Plant Soil Fumigant

KEEP OUT OF REACH OF CHILDREN

DANGER POISON

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.)
DANGER. EXTREMELY HAZARDOUS LIQUID AND VAPOR UNDER PRESSURE. FATAL IF SWALLOWED OR INHALED. CORROSIVE CAUSES SKIN BURNS AND IRREVERSIBLE EYE DAMAGE, WHICH MAY HAVE A DELAYED ONSET. DO NOT BREATHE VAPOR OR GAS. INHALATION MAY CAUSE SERIOUS ACUTE ILLNESS OR DELAYED LUNG, NERVE, OR BRAIN INJURY. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

NOTE: CHLOROPICRIN MAY BE IRRITATING TO THE UPPER RESPIRATORY TRACT, AND EVEN AT LOW LEVELS CAN CAUSE PAINFUL IRRITATION TO THE EYES, PRODUCING TEARING. IF THESE SYMPTOMS OCCUR, LEAVE THE FUMIGATION AREA IMMEDIATELY.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. For more options, follow the instructions for Category H on the chemical-resistant category selection chart. PPE constructed of Saranex, neoprene, and chlorinated polyethylene provide short-term contact or splash protection against liquid in this product. An equivalent protection is provided by PPE constructed of Viton, Teflon, and EVAL barrier laminates (for example, responder suits manufactured by Life-Guard or Silvershield gloves manufactured by North). Where chemical-resistant materials are required, leather, canvas, or cotton materials offer no protection from this product and must not be worn as the sole article of protection when contact with this product is possible.

When performing tasks with NO potential for contact with liquid fumigant, all handlers (including applicators) must:

- Wear long-sleeved shirt, long pants, shoes and socks.
- Not wear jewelry, goggles, tight clothing, chemical-resistant gloves, rubber protective clothing, or rubber boots when handling. Methyl bromide can be trapped inside clothing and cause skin injury.
- Handers with no potential for contact with liquid fumigant (e.g., shovellers) may wear cotton, leather, or other porous, non-chemical-resistant gloves. If such gloves are exposed to liquid fumigant, they must immediately be removed and discarded.

When performing tasks with potential for contact with liquid fumigant, all handlers (including applicators) must wear:

- Protective eyewear (Do NOT wear goggles), and
- Chemical-resistant footwear with socks.

In addition, when an air-purifying respirator is required under this label's Directions for Use, Protection for Handlers, Respiratory Protection and Stop Work Triggers section, handlers (including applicators) must wear:

- A NIOSH-certified full-facepiece air-purifying respirator with cartridges certified by the manufacturer for protection from exposure to methyl bromide at concentrations up to 5 ppm (e.g., a 3M air-purifying respirator equipped with 3M Model 60928 Organic Vapor/Acid Gas/P100 cartridges).

IMPORTANT: A self-contained breathing apparatus (SCBA) is not permitted for routine handler tasks. If responding to an emergency when corrective action is needed to reduce air concentrations to acceptable levels, wear an SCBA. Escape-only SCBA respirators must not be used by handlers for responding to emergencies. In addition wear PPE required for potential contact with liquid fumigant.

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 clothing.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use them.

USER SAFETY RECOMMENDATIONS

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

ENVIRONMENTAL HAZARDS

- This pesticide is toxic to mammals and birds. 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 washwaters or rinsate.
- Methyl bromide and chloropicrin have certain properties and characteristics in common with chemicals that have been detected in groundwater (methyl bromide and chloropicrin are highly soluble in water and have low vapor pressure).
- For untargeted applications of methyl bromide and chloropicrin, leaching and runoff may occur if there is heavy rainfall after soil fumigation.

PHYSICAL OR CHEMICAL HAZARDS

Do not use containers or application equipment made of magnesium, aluminum, or their alloys, as under certain conditions this fumigant may be severely corrosive to such metals. [See the Calibration, Set-up, Repair and Maintenance for Application Rigs section of this labeling for further requirements for application equipment.] Do not permit water to be used for cleaning the fumigant pressure system, as corrosion will result. Diesel oil is satisfactory for this purpose.

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 manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling. Do not apply this product in a manner inconsistent with its labeling.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS). No instructions elsewhere on this labeling relieve users from complying with the requirements of the WPS.

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

Terms Used in This Labeling

- Soil Fumigant Training Program: Certified applicator training that provides information on (1) how to correctly apply the fumigant, including how to comply with new label requirements; (2) how to protect handlers and bystanders; (3) how to do fieldwork in specified areas; (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.
- Dusted ben 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., pounds 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 broadcast equivalent application rate is used in cases when the rate of fumigant applied to the topsoil (e.g., rate within the bed or strip) is greater than 6%. The broadcast equivalent application rate is calculated to determine the buffer zone distance required by this labeling.
- Application is Complete: The time at which the fumigant is first delivered/dispersed into the soil in the application block.
- Application Restricted Period: This period begins at the start of the application and expires depending on the application method and expires depending on the application method and expires depending on the application method and expires depending on the application method and expires depending on the application method and expires depending on the application method and expires depending on the application method and expires depending on the application method.
- Application Period and Notification: 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 do fieldwork in specified areas; (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 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.

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 that is permitted by this labeling is listed in the Personal Protective Equipment (PPE) section of this labeling.
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 day care centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons.

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

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

Representative Handling Task: For air monitoring, the locations and handler activities sampled must represent each handler’s exposure occurring within the application block. For example, for an application consisting of a seven-handler crew (1 tractor driver, 1 tractor co-pilot, 4 shovalers, 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.

Application Restrictions

- The use of this product is restricted to the methods described in this label.
- This product may only be used for the following:
  - Crops/uses at locations that at the time of the application qualify for exemptions under the Montreal Protocol as identified in Table 1
  - Maximum application block sizes allowed:
    - 100 acres for tarped bedded and broadcast applications
    - 40 acres for untarped deep applications (i.e., California orchard replant)

Product Information

Soil-borne pests controlled include wireworms and nematodes, weed and grass seeds, Granville Wilt, Black Shank, and other diseases caused by certain species of Rhizoctonia, Pythium, Fusarium, and Phytophthora.

Use Precautions

- Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory Agencies as required.
- Users should handle this fumigant in the open, with the operator ‘upwind’ from the container where there is good ventilation.
- When fumigating soil from a tractor, 5 gallons of water must be carried on the tractor and placed where it is readily accessible. In addition to water available on the tractor, at least 5 gallons additional water must be available from the service truck. This water must be potable and in containers marked “Decontamination water not to be used for drinking”.
- Keep pets, livestock, and other domestic animals out of the treated area during application and during tarp perforation and/or removal, if a tarp is used.
- Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertilizer and fumigant are applied to soils that are either cold, wet, acid, or high in organic matter. To avoid injury to plant roots, fertilizer as indicated by soil tests made after fumigation. To avoid ammonia injury and/or nitrate contamination to crops, avoid using fertilizers containing ammonia salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is about 65° F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

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 www.epa.gov/fumiganttraining 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.

Handling

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

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

The following activities are prohibited from being performed 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):  
- 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, 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.

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 www.epa.gov/fumiganttraining.

For all handling tasks at least two handlers must be present.

Exception: After the application is complete, only one trained handler is required to perform fumigant site monitoring tasks outside of the buffer zone.

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

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

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 a minimum two handlers 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 history (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 a full-facepiece 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:
  o A full-facepiece air-purifying respirator must be worn by all handlers who remain in the application block or surrounding buffer zone, or
  o Operations must cease and handlers not wearing an air-purifying respirator must leave the application block and surrounding buffer zone.

• Handlers can remove full-facepiece 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 methyl bromide have decreased to less than 0.15 ppm, provided that handlers do not experience sensory irritation. During the collection of air samples, a full-facepiece air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken at the location where:
  1. (the irritation was first experienced, or
  2. where the sample(s) were greater than 5 ppm for methyl bromide or, (3) where sample(s) were greater than or equal to 1.5 ppm for chloropicrin.

• Handlers can resume work activities if all of the following conditions exist provided a full-facepiece air-purifying respirator is worn:
  o two consecutive breathing zone samples for methyl bromide taken at the handling site at least 15 minutes apart must be less than or equal to 5 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.

• Tarp 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 and 2 consecutive methyl bromide air monitoring samples taken at least 15 minutes apart are less than 5 ppm. Air samples must be taken in the breathing zone of the handler. If the 2 consecutive air monitoring samples indicate that methyl bromide levels are:
  o Less than 1 ppm and no sensory irritation is experienced, no respiratory protection is required to begin tarp removal.
  o Between 1 ppm and 5 ppm, then an air-purifying respirator is required to begin tarp removal.
  o See the Respiratory Protection and Stop Work Triggers and Personal Protective Equipment (PPE) sections for additional requirements.

• 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 application must be perforated.
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 the application is complete for tarps that 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 complete if tarps are both perforated and removed less than 14 days after the application is complete.

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

Notification
Notify workers of the application by warning them orally and by posting Fumigant Treated Area signs. The signs must bear the skull and crossbones symbol and state:
- “DANGER/PELIGRO,”
- “Area under fumigation, DO NOT ENTER / NO ENTRE,”
- “Methyl Bromide and Chloropicrin Fumigant in USE,”
- “the date and time of fumigation,”
- “the date and time entry restricted period is over,”
- “PIC-BROM 33,” and
- “Name, address, and telephone number of the certified applicator in charge of the fumigation.”

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.

Mandatory Good Agricultural Practices (GAPs)
The following GAPs must be followed during all fumigant applications.

Tarp (required for all applications, except for deep shank orchard replant [California only] applications)
- Tarps must be installed immediately after the fumigant is applied to the soil for bedded or complete applications. Accurate records must be maintained and recorded in the FMP.
- A written tarp plan must be developed and included in the FMP.
- Once a tarp is perforated, the application is no longer considered tarped.

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

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

Soil Temperature
- The maximum soil temperature at the depth of injection must not exceed 90°F at the beginning of the application.
- If air temperatures have been above 100°F in any of the three days prior to the start of the 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 must be moist 9 inches below the surface. The amount of moisture needed in this zone will vary according to soil type. Surface soil generally dries rapidly and must not be considered in this determination.
- Soil moisture must be determined using one of the following methods:
  - o the USDA Feel and Appearance Method (see below), or
  - o an instrument, such as a tensiometer.
- Available water capacity must be equal to or greater than 50% for shank applications. If there is less than 50% available water capacity 9 inches below the surface, the soil must be adequately deepened. If irrigation is not available and there is adequate soil moisture below 9 inches, soil moisture can be adjusted by disking or plowing before the start of the application. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as necessary to the start of the application as possible.
- Measure soil moisture at a depth of 9 inches at either end of the field, no more than 48 hours prior to the start of the application.

The USDA Feel and Appearance Method for estimating soil moisture as appropriate for the soil texture:
- For coarse textured soils (fine sand and loamy fine sand), the soil is moist enough (50 to 75% 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), the soil is moist enough (50 to 75% available water capacity) to form a ball with defined finger marks, very light soil/water staining on fingers, darkened color will not stick.
- For fine textured soils (clay, clay loam, and silt loam), the soil is moist enough (50 to 75% available water capacity) to form a smooth ball with defined finger marks, light soil/water staining on fingers, ribs 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. Whenever possible, the field should 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 fumigation experience and/or local field test results can be used 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 agent, soil conservationist, or pest control advisor (agriculture consultant) should be consulted for assistance.

Soil Preparation
- Soil must be properly prepared and at the surface generally be free of large clods. The area to be fumigated must be tilled to a depth of 5 to 8 inches.
- Field trash must be properly managed. Residue from a previous crop must be worked into the soil to allow for decomposition prior to the start of the application. Little or no crop residue shall be present on the soil surface. Crop residue that is present must not interfere with the soil seal. Removing the crop residue prior to the start of the application is important to limit the natural “chimneys” that occur in the soil when crop 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 limit the efficacy of the fumigant. However, crop residue on the field serves to prevent soil erosion from both wind and water and is an important consideration. To accommodate erosion control, fumigant efficacy, and human health protection, clear fields of crop residue as close as possible to the start of the application as it is unlikely to have the length of time that the soil would be exposed to potentially erosive weather conditions.

Soil Sealing
- For Broadcast Untarped Applications (CA orchard replant only): Use a disc or similar equipment to uniformly mix the soil to at least a depth of 3 to 4 inches to eliminate the chisel or plow traces. Prior to the application, the treatment area must be consolidated into a smooth surface. The treatment area must be compacted with a cultipacker, ring roller, or roller in combination with tillage equipment.
- For Bedded Applications: Preferred beds must be sealed by disruption of the chisel trace using press sealers, bed shapers, cultpackers, or by re-shaping (e.g., relisting, lifting, replacing) the beds immediately following injection. Beds formed at the time of application must be sealed by disrupting the chisel trace using press sealers, or bed shapers.
For Tarped-Broadcast and Tarped-Bedded Applications: The use of a tarp does not eliminate the need to minimize chisel traces prior to application of the tarp, such as by using a Noble plow or other injection shank that disrupts the chisel traces.

Bedded and Broadcast Shank Applications: Additional Mandatory GAPs
In addition to the GAPs required for all soil fumigation applications, the following GAPs apply for injection applications:

Soil Preparation
- Trash pulled by the shanks to the ends of the field must be covered with tarp, or soil, depending on the application method before making the turn for the next pass.

Application Depth and Spacing
- For Tarped-Broadcast and Tarped-Bedded Applications: The injection point must be a minimum of 8 inches from the nearest final soil/air interface. For tarped bedded applications, the injection depth must not be deeper than the lowest point of the tarp (i.e., the lowest point of the tuck).

- For Untarped-Broadcast Applications (CA orchard replant only): The injection point must be a minimum of 16 inches from the nearest final soil/air interface.
- Apply PIC-BROM 33 with chisel equipment. The shank spacing should be equal to the application depth, but may be up to 1½ times the application depth, not to exceed 24 inches. When applying PIC-BROM 33 with a Noble plow, use an outlet spacing of 9-12 inches along the sweeps.

Prevention of End Row Spillage
- Do not apply or allow fumigant to spill onto the soil surface. For each injection line either have a check valve located as close as possible to the final injection point, or drain/purge the line of any remaining fumigant prior to lifting injection shanks from the ground.
- Do not lift injection shanks from the soil until the shut-off valve has been closed and the fumigant has been depressurized (passively drained) or purged (actively forced out via air compressor) from the system.

Calibration, Set-up, Repair, and Maintenance for Application Rigs
- Brass, carbon steel, or stainless steel fittings must be used throughout. Polyethylene tubing, polypropylene tubing, Teflon® tubing or Teflon®-lined steels braided tubing must be used for all low pressure lines, drain lines, and compressed gas or air pressure lines. All other tubing must be Teflon®-lined steel braided.
- Galvanized, PVC, nylon, or aluminum pipe fittings must not be used.
- All rigs must include a filter to remove any particulates from the fumigant and for pressurized systems a check valve to prevent backflow of the fumigant into the pressurizing system or the compressed air system.
- Rigs must include a flow meter or a constant pressure system with orifice plates to ensure the proper amount of fumigant is applied.
- To prevent the backflow of fumigant into the compressed gas cylinder (e.g., nitrogen, other inert gas, compressed air), if used, applicators must:
  - Ensure that positive pressure is maintained in the compressed gas cylinder at not less than 200 psi during the entire time it is connected to the application rig, if a compressed gas cylinder is used. (This is not necessary for a compressed air system that is part of the application rig, because if the compressor system fails, the application rig will not be operable.)
  - Ensure that application rigs are equipped with properly functioning check valves between the compressed gas cylinder or compressed air system and the fumigant cylinder. The check valve is best placed on the outlet side of the pressure regulator, and is oriented to only allow compressed gas to flow out of the cylinder or compressed air out of the compressed air system.
  - A pressure relief valve must be installed between the regulator and the check valve to ensure a regulator failure does not over pressurize the fumigant cylinder.
  - Always pressurize the system with compressed gas or by use of a compressed air system before opening the fumigant cylinder valve.
  - Before using a fumigation rig for the first time, or when preparing it for use after storage, the operator must check the following items carefully:
    - Check the filter, and clean or replace the filter element as required.
    - Check all tubes and chisels to make sure they are free of debris and obstructions.
    - Check and clean the orifice plates and screen checks, if installed.
    - Pressurize the system with compressed gas or compressed air, and check all fittings, valves, and connections for leaks using soap solution.
  - Install the fumigant cylinder, and connect and secure all tubing. Slowly open the compressed gas or compressed air valve, and increase the pressure to the desired level. Slowly open the fumigant cylinder valve, always watching for leaks.
  - When the application is complete, close the fumigant cylinder valve and blow residual fumigant out of the fumigant lines into the soil using compressed gas or compressed air. If the rig uses a centrifugal pump instead of compressed gas to inject fumigant into the soil, you may clear residual fumigant ... via a drain hose. Place the wand in the soil until all residual fumigant has drained from the system. The wand and drain hose must be free of dirt to allow proper drainage.

- At the end of the application season, disconnect all fumigant cylinders from the application rig. At the end of the season, seal all tubing openings with tape to prevent the entry of insects and dirt.
- Application equipment must be calibrated and all control systems must be working properly. Proper calibration is essential for application equipment to deliver the correct amount of fumigant uniformly to the soil. Refer to the manufacturer’s instructions on how to calibrate your equipment. Usually the equipment manufacturer, fumigant dealer, or Cooperative Extension Service can provide assistance.

Pre-Plant Soil Fumigation in Greenhouses: Mandatory GAPs
- During the application keep all doors, vents, and windows to the outside open, and keep all fans or mechanical ventilation systems running within the greenhouse.
- Seal gaps through which gases could leak into adjacent enclosed areas.

Maximum Application Rates

<table>
<thead>
<tr>
<th>Crop / Use</th>
<th>Maximum Application Rate¹ (Lbs Product / Treated Acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eggplant</td>
<td>522</td>
</tr>
<tr>
<td>Cucurbits</td>
<td>373</td>
</tr>
<tr>
<td>Forest Nursery Seedlings</td>
<td>447 sandy soils</td>
</tr>
<tr>
<td>Orchard Nursery Seedlings (raspberry, deciduous trees, roses)</td>
<td>447 clay loam soils with less than 30% clay</td>
</tr>
<tr>
<td>Strawberry Nurseries</td>
<td>298</td>
</tr>
<tr>
<td>Strawberry Fruit²</td>
<td>261 California¹</td>
</tr>
<tr>
<td>Sweet Potato Slips</td>
<td>522</td>
</tr>
<tr>
<td>Tomato (grown for fresh market)</td>
<td>358</td>
</tr>
</tbody>
</table>

¹Do not exceed specified maximum application rates in Table 1. Row, bed or strip applications may be made at the treated acre application rates, but their broadcast equivalent rates will be proportionately less per acre depending on the spacing and width of treatment in the row, bed or strip.
²The maximum rate to control infestation of Oak Root Fungus (Armillaria mellea) and/or endoparasitic nematodes such as root-knot (Meloidogyne spp.), dagger (Xiphinema spp.), ring (Criconemoides spp.), lesion (Pratylenchus spp.), and pin (Paratylenchus spp.) nematodes is 400 lbs methyl bromide/acre (cannot exceed 597 lbs PIC-BROM-33 per acre). Documentation of the pest(s) must be included in the site-specific fumigation management plan.
³The maximum rate to control infestation of Fusarium, Macrophomina, and/or Verticillium is 350 lbs PIC-BROM 33 per treated acre. Documentation of these pest(s) must be included in the site-specific fumigation management plan.
This product may be used as part of a quarantine program as described below.

Quarantine applications with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where: (i) Official control is that performed by, or authorized by, a national (including state, tribal or local) plant, animal or environmental protection or health authority; (ii) quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled. This definition excludes treatments of commodities not entering or leaving the United States or any State (or political subdivision thereof).

### USDA-APHIS Quarantine Uses

This product may be used as a soil fumigant at any crop or non-crop site as part of a quarantine program established by the United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) under the Plant Protection Act (7 U.S.C. 7701 et seq.). Limitations including but not limited to application rates and methods and crops and cropping practices must be in accordance with those established by the USDA-APHIS quarantine program.

### Other Quarantine Uses (not USDA-APHIS Quarantine uses)

Quarantine use of methyl bromide is restricted to fields used for the production of plant propagative material listed below and unplanted areas immediately adjacent thereto, where all production from the treated fields will be shipped to areas where a plant regulatory authority requires the source or the incoming material to be free of quarantine pests or be accompanied by a certificate issued by a plant regulatory official.

**Forest Seedlings:** Conifer and hardwood seedling for reforestation, Christmas tree seedlings

**Nursery Stock:** Roses, strawberry transplants, sweet potato slips, caneberry and blueberry nursery stock, fruit and nut trees, garlic transplants, onion transplants, vineyard stock, seed potato, tobacco seed beds, food crop transplants, and other wild or cultivated trees, shrubs, vines and forbs.

**Ornamental Plants:** Caladiums, chrysanthemums, flower bulbs, flowering plants, ornamental grasses, rhizomes, shrubs, trees, and other perennials and annuals.

**Turf or Sod:** For interstate and intrastate shipments to areas that require fumigation with methyl bromide to meet quarantine/phytosanitary requirements.

The maximum application rate for quarantine uses shall be 597 lbs of PIC-BROM 33 per acre, or less if specified in the applicable quarantine/phytosanitary requirements. The U.S. Federal, state, or local plant, animal, environmental protection or health authority requiring the quarantine application and the particular quarantine/phytosanitary requirement must be identified in the site-specific fumigant management plan. Additionally, the requirement for the treatment (e.g., the State or Federal law) must be listed in the site-specific fumigant management plan.

### Calculating the Broadcast Equivalent Application Rate

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

- Pounds of product per treated acre
- Strip or bed bottom width (inches)
- Center-to-center row spacing (inches)
- Application block size (acres)

Pounds 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.

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

\[
\text{broadcast equivalent rate (pounds (or gallons) / acre)} = \frac{\text{strip or bed bottom width (inches)} \times \text{center-to-center row spacing (inches)}}{\text{application block size (acres)}
\]

- 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.

---

**Table 2. Maximum Application Rates for Quarantine Uses**

<table>
<thead>
<tr>
<th>Crop / Use</th>
<th>Maximum Application Rate(^1) (Lbs Product / Treated Acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caneberries (Raspberries, Blackberries, Boysenberries)</td>
<td>298</td>
</tr>
</tbody>
</table>

\(^1\) Do not exceed specified maximum application rates in Table 3. Row, bed or strip applications may be made at the treated acre application rates, but their broadcast equivalent rates will be proportionately less per acre depending on the spacing and width of treatment in the row, bed or strip.
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.

broadcast equivalent rate (pounds product/acre) = \frac{strip or bed bottom width (inches) \times \text{area of strips or beds} \times \text{pounds product/ treated acre applied in the bed}}{\text{center-to-row spacing (inches)}}

= \frac{30\text{-inch width beds} \times 9.75 \text{ acres} \times 200 \text{ pounds product/ treated acre}}{60\text{-inch row spacing}}

= 97.5 \text{ pounds product/acre}
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.

For all other applications, Tables 4, 5, or 6, as appropriate for the method of application must be used. If after applying applicable credits the buffer zone distances are still greater than 1/2 mile (2,640 feet), then the application is prohibited.

Applications in California: Where a Restricted Materials Permit is required for soil fumigation [pursuant to citation for 3
c.2.1.166.11.25] and December 8, 2004 California Department of Pesticide Regulation Methyl Bromide Field Fumigation Guidance Manual (see .ca.gov/cd reached in Table 6. Deep Untarped Buffer Zone Distances (feet)

Table 6. Deep Untarped Buffer Zone Distances (feet)

| Block Size (Acres) | Application Block Size (Acres) | Buffer Zone Distances
|-------------------|-----------------------------|--
| 1 2 3 4 5 6 7 8 9 10 | 1 2 3 4 5 6 7 8 9 10 |
| 200 | 50 55 70 85 95 105 115 125 135 215 | 295 353 410 463 515 568 625 682 738 850 |
| 281 | 25 68 110 153 195 225 255 285 315 345 | 465 485 505 525 545 565 585 605 625 645 |
| 321 | 25 81 138 194 250 290 330 370 410 450 | 588 725 838 950 1050 1150 1250 1350 1450 1550 |
| 361 | 45 113 180 248 316 384 452 520 588 656 | 724 792 860 928 996 1064 1132 1200 1268 1336 |
| 401 | 65 143 220 298 375 428 481 534 587 640 | 662 715 768 820 873 926 979 1032 1085 1138 |
| 442 | 85 174 263 351 440 499 558 617 676 735 | 794 853 912 971 1030 1089 1148 1207 1266 1325 |
| 482 | 105 200 300 400 500 565 630 695 760 825 | 1050 1257 1463 1670 1876 2083 2289 2496 2703 2910 |
| 522 | 131 238 344 450 556 626 696 766 836 906 | 1156 1460 1764 2068 2372 2676 2980 3284 3588 3892 |
| 563 | 163 275 388 500 613 688 763 838 913 988 | 1263 1538 1813 2088 2363 2638 2913 3188 3463 3738 |
| 601 | 194 313 431 550 669 749 829 909 989 1069 | 1369 1669 1922 2175 2406 2638 |

Buffer Zone Distances

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

Applications in California: Where a Restricted Materials Permit is required for soil fumigation [pursuant to citation for 3.c.2.1.166.11.25] and December 8, 2004 California Department of Pesticide Regulation Methyl Bromide Field Fumigation Guidance Manual (see .ca.gov/cd reached in Table 6. Deep Untarped Buffer Zone Distances (feet)

Applications outside California:

Applications outside California:

- 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 1/2 mile (2,640 ft), then the application is prohibited.
- For all other applications, Tables 4, 5, or 6, 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 Requirements

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

- 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 Exemption for Transit on Roadways 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.
- For broadcast shank applications using any tarp that qualifies for a 60% or greater reduction in buffer zone distance:
  1. The buffer zone period begins at the start of the application and ends after the tarps have been removed from the application block.
  2. As an alternative to (1) above, two buffer zone periods may be established where the first buffer zone period begins at the start of the application and lasts for a minimum of 48 hours after the application is complete. The second buffer zone period begins when the tarps are perforated and ends after the tarps have been removed from the application block.
- For all other applications, the buffer zone period begins at the start of the application and lasts for a minimum of 48 hours after the application is complete. See www.tarpcredits.epa.gov for a list of tarps that have been tested and determined to qualify for buffer reduction credits.

Buffer Zone Proximity

- Before the start of application, the certified applicator must determine whether their buffer zone will overlap any methyl bromide buffer zone(s).
- To reduce the potential for off-site movement from multiple fumigated fields, buffer zones from multiple methyl bromide 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 has been implemented if there are any residences or businesses within 300 feet of any of the buffer zones.

Buffer Zone Exemption 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 that are 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:
     1) The buffer zone period has ended, and
     2) 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 methyl bromide 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 Exemption for Transit on Roadways

1. The storage buildings are not occupied during the buffer zone period, and
2. 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:
     1) The buffer zone period has ended, and
     2) 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 methyl bromide 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 Credits

The buffer zone distances for PIC-BROM 33 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.
- 15% reduction in buffer zone distance, IF potassium thiosulfate (KTS) is applied at a minimum rate of 300 pounds per acre.
- 10% reduction in buffer zone distance, IF the organic content of the soil in the application block is ≥ 1% - 2%; a 20% reduction in buffer zone distance, IF the organic content of the soil in the application block is > 2% - 3%; and a 30% reduction in the buffer zone distance, IF the organic content of the soil in the application block is > 3%.
- 10% reduction in 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 credit since the soil organic content is 1.5%, then the buffer zone can be reduced by 10%, i.e., reduced by 5 feet based on the following calculation: 50 feet – (50 feet x 10%) = 45 feet. If the buffer zone is 50 feet, and the application qualifies for two buffer zone credits since the soil organic content is 1.5% and the clay content is greater than 27%, then the buffer zone can be reduced by 20% (10% organic content credit + 10% clay content credit), i.e., reduced by 10 feet based on the following calculation 50 feet - (50 feet x 20%) = 40 feet.

Posting Fumigant Buffer Zones

- Posting of a buffer zone is required unless there is a physical barrier that prevents bystander access to the buffer zone.
- Buffer Zone signs must be placed along or outside the perimeter of the buffer zone, at all usual points of entry and along likely routes of approach from areas where people not under the owner’s control may approach the buffer zone.
- Some examples of points of entry include, but are not limited to, roadways, sidewalks, bike 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:
  1. The printed side of the sign must face away from the application block toward areas from which people could approach.
  2. 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).
  3. 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.
  4. Signs must be removed within 3 days after the end of the buffer zone period.
  5. 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/index.htm
- The Buffer Zone signs must contain the following information:
  1. The ‘Do Not Walk’ symbol
  2. DO NOT ENTER/NO ENTRE
  3. Methyl Bromide Fumigant [PIC-BROM 33] BUFFER ZONE.
  4. 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 the 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 day care centers, nursing homes, assisted living facilities, hospitals, inpatient 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(s),
- Applicator and property owner/operator 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 upward) if:
  - there is an incident,
  - sensory irritation is experienced outside of the buffer zone, and/or
  - there are equipment/tarp/seed failures 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, or applicator, or other party. The certified applicator supervising the application must verify in writing (sign and date) that the site-specific FMP 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.

NOTE:
- Qualifies for a quarantine exemption (CUE) at time of application and is listed in Table 1.
- Qualifies for a quarantine exemption and is listed in Table 2, or
- Does not qualify for a CUE and is listed in Table 3.

If application qualifies for a quarantine exemption, identify:
- U.S. Federal, state, or local plant, animal, environmental protection or health authority requiring the quarantine application and the particular quarantine/sanitarys requirement
- Requirement for the treatment (e.g., the State or Federal law)
- Documentation of pests (for control of if applicable):
  - Oak Root Fungus (Armillaria mellea) and/or endoparasitic nematodes such as root-knot (Meloidogyne spp.), dagger (Xiphinema spp.), ring (Criconemoides spp.), Pratylenchus spp.), and pin (Paratylenchus spp.) nematodes for orchard replant
  - Fusarium, Macrophomina, and/or Verticillium for strawberry fruit.

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,
- Methods 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
- Potassium thiosulfate
- Organic matter content
- Clay content
- 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 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
  - Protective eyewear (not goggles)
  - Chemical-resistant gloves
  - Air-purifying respirators
  - Respirator make, model, type, style, size, and cartridge type
  - SCBAs
  - Respirator make, model, type, style, size
  - 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 www.epa.gov/fumigantraining for the active ingredient(s) in this product.
- For handlers designated to wear respirators (air-purifying respirator or SCBA):
  - 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 2 handlers have the appropriate respirators and cartridges 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
- For monitoring after tarp perforation is complete and before tarp removal begins, indicate:
  - Monitoring equipment to be used, and
  - Timing of monitoring.
- If sensory irritation is experienced, indicate whether operations will cease or operations will continue with use of an air-purifying respirator.

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 application. 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).
- For handlers designated to wear respirators (air-purifying respirator or SCBA):
  - 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 www.epa.gov/fumigantraining for the active ingredient(s) in this product.
- For handlers designated to wear respirators (air-purifying respirator or SCBA):
  - Date of medical qualification to wear a respirator,
  - Date of respirator training, and
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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 Post-Application Summary for 2 years from the date of application.

Spill and Leak Procedures
In case of a rupture of hose or fitting while applying fumigant, immediately stop tractor and motor. Evacuate everyone from the immediate area of the spill or leak. Wear the personal protective equipment specified in the Personal Protective Equipment (PPE) section of this labeling for entry into affected area to correct problems. Approach from upwind to make necessary repairs. Do not enter area without the required PPE until the spill has evaporated or the leak has been fixed. Contaminated soil, water, and other cleanup debris is a toxic hazardous waste. Report spill to the National Response Center (800-424-8802) if the reportable quantity of 1000 lbs. is exceeded.

NOTICE: Contains methyl bromide, a substance which harms public health and the environment by destroying ozone in the upper atmosphere.