



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, DC 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

**CERTIFIED MAIL**

Mardel Belotinsky  
Shadow Mountain Products Corporation  
P.O. Box 1327  
Hollister, CA 95024

MAY 7 2010

Subject: Tri-Chlor Fumigant  
EPA Reg. No. 58266-2  
Pre-RED Mitigation Amendment dated February 1, 2010  
EPA Decision Number 432925

Dear Ms. Belotinsky:

The amended label referred to above, submitted in connection with reregistration of chloropicrin 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 REVISIONS**

1. On page 3 under the PPE section, revise the second and third sections to read,  
**"When not performing tasks with liquid contact potential, all handlers (including applicators) must wear:**
  - Long-sleeved shirt and long pants, and
  - Shoes and socks.
  - Do not wear jewelry, gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Chloropicrin is heavier than air and can be trapped inside clothing and cause skin injury.

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

- Long-sleeved shirt and long pants,
  - Chemical-resistant gloves,
  - Chemical-resistant apron,
  - Protective eyewear (Do NOT wear goggles), and
  - Chemical-resistant footwear and socks."
2. On page 3, revise the language after the subheading **"IMPORTANT"** to read, "A self-contained breathing apparatus (SCBA) is not permitted for routine handler tasks. Wear an SCBA and PPE required for liquid contact potential in emergencies such as a spill or leak or when corrective action is needed to reduce air levels to acceptable levels."

3. On page 4 under Physical or Chemical Hazards, revise the following sentence “[See the Calibration, Set-up, Repair and Maintenance for Application Rigs section of this labeling for further requirements for application equipment]” to read, “[See the Calibration, Set-up, Repair and Maintenance for Application Rigs and System Controls and Integrity sections of this labeling for further requirements for application equipment].”
4. On page 5 under Entry Restricted Period in the fourth bullet, delete “until.”
5. On page 7 under SUPERVISION OF HANDLERS, revise Fumigant Safe Handling Information paragraph to read, “The certified applicator must provide **Fumigant Safe Handling** information to each handler involved in the application or confirm that each handler participating in the application has received **Fumigant Safe Handling** information in a manner they can understand within the past twelve months. **Fumigant Safe Handling** information will be provided where this product is purchased, or at <http://www.epa.gov/fumiganttraining>.”
6. On page 7, revise the subheading and text under “Air-Rescue Device Availability. . .” to read “AVAILABILITY OF RESPIRATORS FOR EMERGENCIES  
The employer of any handler must confirm that at least one self-contained breathing apparatus (SCBA) is on-site and is ready for use in case of an emergency. This must be documented in the FMP.”
7. On page 17, revise the bullet that begins “Air-purifying respirators...” to say, “Air purifying respirators, SCBAs, and other personal protective equipment (PPE) for handlers (handler task; protective clothing; respirator make, model, type, style, and size; respirator cartridge type; respirator cartridge replacement schedule; eye protection; gloves; and other PPE)”.
8. On page 18, revise the text “For handlers designated to wear air-purifying respirators. . .” to read “For handlers designated to wear respirators (air-purifying respirator or SCBA):
  - Date of medical qualification for respirator(s) that each handler is designated to wear,
  - Date of training for respirator(s) that each handler is designated to wear, and
  - Date of fit-testing for respirator(s) that each handler is designated to wear.”
9. On page 21 add “Table 1” before the title Preplant Soil Fumigation Uses Maximum Dosages.
10. On page 21 under the Preplant Soil Fumigation Uses Maximum Dosages table, revise the first sentence in footnote 1 to read, “Do not exceed specified maximum application rate in Table 1.”
11. On page 22, revise the Warning Agent paragraph to read, “Tri-Chlor Fumigant may be used as a warning agent prior to fumigating with an EPA registered sulfuryl fluoride

product. When used as a warning agent prior to sulfuryl fluoride fumigations, users must follow requirements on the EPA registered sulfuryl fluoride product.”

12. On page 20, under SPILL AND LEAK PROCEDURES, revise the second and seventh sentences as follows:
  - a. “For entry into affected area to correct problems, wear the personal protective equipment specified in the *Hazards to Humans and Domestic Animals* section of this labeling.
  - b. Dispose of contaminated material on site or at an approved disposal facility.”

## 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 (release for shipment) by its registrant after December 1, 2010. 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, 2010, deadline because of any failure to obtain necessary 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 Andrea Carone by phone at (703) 308-0122 or via email at [carone.andrea@epa.gov](mailto:carone.andrea@epa.gov) or Mary Waller by phone at (703) 308-9354 or via email at [waller.mary@epa.gov](mailto:waller.mary@epa.gov).

Sincerely,



Mary L. Waller  
Product Manager (21)  
Fungicide Branch  
Registration Division (7504P)

Enclosure

4/26

ACCEPTED  
with COMMENTS  
In EPA Letter Dated  
MAY 7 2010

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
58266-2

**RESTRICTED USE PESTICIDE  
DUE TO ACUTE TOXICITY**

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.

# Tri-Chlor Fumigant

**ACTIVE INGREDIENT:**

Chloropicrin .....99%

**OTHER INGREDIENTS:** ..... 1%

**TOTAL:** .....100%

*This product weighs 13.88 lbs./gal. @ 68 °F.*

**KEEP OUT OF REACH OF CHILDREN**



**DANGER**

**PELIGRO**

**POISON** [Note : « Poison » will be printed in red.]

*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.)*

**IN ALL CASES OF OVEREXPOSURE, GET MEDICAL ATTENTION IMMEDIATELY.  
TAKE PERSON TO A DOCTOR OR TO AN EMERGENCY TREATMENT FACILITY.**

FIRST AID	
<b>If inhaled:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air. Keep warm.</li><li>• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>NOTE:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Do not give anything by mouth to an unconscious person.	
<b>NOTE TO PHYSICIAN</b>	
Chloropicrin is a volatile liquid that is the active ingredient in tear gas. As a gas it is a powerful lachrymator. Early symptoms of overexposure are lachrymation, respiratory distress, and vomiting. Pulmonary edema may develop later. Treatment is symptomatic.	
<b>EMERGENCY PHONE NUMBER:</b> Chemtrec, 1-800-424-9300	
<i>See side panels for additional precautionary statements.</i>	

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## **Shadow Mountain Products Corporation**

**P. O. Box 1327 • Hollister • CA 95024-1327**

**(831) 630-2243**

EPA Reg. No. 58266-2

EPA Est. 11220-CA-4; 11220-CA-8

NET CONTENTS.....LBS.

### **PRECAUTIONARY STATEMENTS:**

#### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

DANGER. THIS FUMIGANT IS A HIGHLY HAZARDOUS MATERIAL AND MUST BE HANDLED WITH CARE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION WHO ARE TRAINED WITH ITS PROPER USE. CONSULT YOUR DEALER REPRESENTATIVE OR THE DISTRIBUTOR FOR CORRECT PROCEDURE BEFORE USING. READ AND FOLLOW ALL LABEL DIRECTIONS AND PRODUCT LITERATURE SPECIFIC TO YOUR REQUIREMENTS. POISONOUS LIQUID AND VAPOR. INHALATION MAY BE FATAL. CHLOROPICRIN IS READILY IDENTIFIABLE BY SMELL. EXPOSURE TO VERY LOW CONCENTRATIONS OF VAPOR WILL CAUSE IRRITATION OF EYES, NOSE, AND THROAT. CONTINUED EXPOSURES AFTER IRRITATION IS EVIDENT, OR HIGHER CONCENTRATIONS, MAY CAUSE PAINFUL IRRITATION TO EYES OR TEMPORARY BLINDNESS. LIQUID WILL CAUSE CHEMICAL BURNS TO SKIN OR EYES. DO NOT GET ON SKIN, IN EYES, OR ON CLOTHING. HARMFUL OR FATAL IF SWALLOWED. CHLOROPICRIN FUMIGANT HAS THE CAPACITY TO CAUSE MARKED IRRITATION TO THE UPPER RESPIRATORY TRACT, AND IS A STRONG LACHRYMATOR (TEAR PRODUCING EYE IRRITANT). LOW CONCENTRATIONS, BELOW THOSE NECESSARY TO CAUSE SERIOUS SYSTEMIC INTOXICATION, ARE CAPABLE OF CAUSING SEVERELY PAINFUL EYE IRRITATION, HENCE WILL NOT BE VOLUNTARILY TOLERATED. HOWEVER, THE EFFECT MAY BE SO POWERFUL THAT A PERSON MAY BECOME TEMPORARILY BLINDED AND PANIC-STRICKEN AND THAT IN TURN MAY LEAD TO ACCIDENTS.

#### **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 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 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.

**All handlers (including applicators) must wear:**

- Long-sleeved shirt and long pants, and
- Shoes and socks.
- Do not wear jewelry, gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Chloropicrin is heavier than air and can be trapped inside clothing and cause skin injury.

**While performing tasks with liquid contact potential, all handlers (including applicators) must wear:**

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves,
- Chemical-resistant apron,
- Protective eyewear (Do NOT wear goggles), and
- Chemical-resistant footwear and socks.

***In addition, when an air-purifying respirator is required, handlers must wear at minimum either:***

- a full-face respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (NIOSH approval number prefix TC-23C), or
- a full-face respirator with a canister approved for pesticides (NIOSH approval number prefix TC-14G).

See *Directions for Use, Protection for Handlers, Respiratory Protection and Stop Work Triggers* for when a full-face respirator is required.

**IMPORTANT:** An air-supplying respirator [i.e., a respirator connected directly to a clean air source or a self-contained breathing apparatus (SCBA)] is not permitted for routine handler tasks. Such respirators are only permitted in emergencies such as a spill or leak or when corrective action is needed to reduce air levels to acceptable levels.

**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.

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets on clothing. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.
- Supply your physician with information on Chloropicrin, which is available from your Dealer Representative or the Distributor.

### 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.
- Chloropicrin has certain properties and characteristics in common with chemicals that have been detected in groundwater (chloropicrin is highly soluble in water and has low adsorption to soil).
- For untarped applications of 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 to clean 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 way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements in this labeling about personal protective equipment, restricted-entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS). *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 for entry that is permitted by this labeling is listed in the *Hazards to Humans and Domestic Animals* section of this labeling.

### ENTRY RESTRICTED PERIOD AND NOTIFICATION

#### ENTRY RESTRICTED PERIOD

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

- 5 days (120 hours) after the application is complete for untarped applications, or
- 5 days (120 hours) after the application is complete if tarps are not perforated and removed for at least 14 days following application. NOTE: persons installing, repairing or monitoring tarps are handlers until 14 days after the application is complete if tarps are not perforated and removed during these 14 days, or
- 48 hours after tarp perforation is complete if tarps will not be removed for at least 14 days following application, or
- until tarp removal is completed if tarps are both perforated and removed less than 14 days after application.

NOTE: see *Tarp Perforation and/or Removal* section on this labeling for requirements about when tarps are allowed to be perforated.

#### **NOTIFICATION**

- Notify workers of the application by warning them orally and by posting Fumigant Treated Area signs. The Fumigant Treated Area signs must bear the skull and crossbones symbol and state:
  - "DANGER/PELIGRO,"
  - "Area under fumigation, DO NOT ENTER/NO ENTRE,"
  - "Chloropicrin Fumigant in USE,"
  - the date and time of fumigation,
  - the date and time entry restricted period is over,
  - "TRI-CLOR FUMIGANT", and
  - Name, address, and telephone number of the certified applicator in charge of the fumigation.
- Post the Fumigant Treated Area sign instead of the WPS sign for this application but follow all WPS requirements pertaining to location, legibility, size, and timing of posting and removal.
- Post the Fumigant Treated Area signs at all entrances to the application block (i.e., the greenhouse or field or portion of a field treated with a fumigant in any 24-hour period).

#### **HANDLERS**

The following activities are prohibited from being performed in the application block (i.e., the greenhouse or field or portion of a field treated with a fumigant in any 24-hour period) 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), from the start of the application until the entry restricted period ends (NOTE: persons installing, perforating, removing, repairing, and monitoring tarps are considered handlers for the durations listed below). Those activities include those persons:

- Participating in the application as supervisors, loaders, drivers, tractor co-pilots, shovelers, cross ditchers, or as other direct application participants (the application starts when the fumigant is first introduced into the soil and ends after the fumigant has stopped being delivered/dispensed to the soil);
- Using devices to take air samples to monitor 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;
- Installing, repairing, operating, or removing irrigation equipment in the fumigant application block;
- Entering the application site to perform scouting, crop advising, or monitoring tasks;
- Installing, perforating (cutting, punching, slicing, poking), removing, repairing, or monitoring tarps:
  - until 14 days after application is complete if tarps are not perforated and removed during those 14 days, or
  - until tarp removal is complete if tarps are **both** perforated **and** removed less than 14 days after application, or
  - until 48 hours after tarp perforation is complete if they will not be removed within 14 days after application.

NOTE: See *Tarp Perforation and/or Removal* section on this labeling for requirements about when tarps are allowed to be perforated.

- Performing any handling tasks as defined by the WPS.

## PROTECTION FOR HANDLERS

### SUPERVISION OF HANDLERS

For all applications except water run: from the start of the application until the fumigant has stopped being delivered/dispensed into the soil, i.e., after the soil is sealed, the certified applicator must be at the fumigation site in the line of sight of the application and must directly supervise all persons performing handling activities.

For water-run applications (e.g., drip), the certified applicator must be at the fumigation site to start the application, including set-up, calibration, and initiation of the application. The certified applicator may leave the site but must return at least every two hours to visually inspect the equipment to ensure proper functioning and must directly supervise all WPS-trained handlers on-site until the fumigation has stopped being delivered/dispensed into the soil. WPS-trained handlers may perform the monitoring functions in place of the certified applicator, but must be under the supervision of the certified applicator and be able to communicate with the certified applicator at all times during monitoring activities via cell phone or other means.

The results of monitoring activities must be captured in the Fumigant Management Plan's (FMP) post-application summary.

For handling activities that take place after the fumigant has been delivered/dispensed into the soil until the entry restricted period expires, the certified applicator does not have to be on-site, but must have communicated, in a manner that can be understood, to the site owner/operator 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).

Communication activities must be captured in the FMP.

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

The certified applicator must provide **Fumigant Safe Handling** information to each handler involved in the application or confirm that each handler participating in the application has received **Fumigant Safe Handling** information in a manner they can understand within the past twelve months. **Fumigant Safe Handling** information will be provided where this product is purchased, or at (*EPA will provide website*).

For all handling tasks at least two handlers trained under the provisions of the WPS 40 CFR 170.230 must be present.

#### **EXCLUSION OF NON HANDLERS FROM APPLICATION BLOCK**

The certified applicator supervising the application and the owner/operator of the establishment where the fumigation 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.

#### **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 FOR PRE-PLANT SOIL USES**

At a minimum two handlers must have the appropriate air-purifying respirator and cartridges available and these handlers must be fit-tested, trained, and medically examined.

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. This must be documented in the FMP.

#### **AIR-RESCUE DEVICE AVAILABILITY FOR PRE-PLANT SOIL USES**

The employer of any handler must confirm that at least one air-rescue device (e.g., SCBA) is on-site and is ready for use in case of an emergency. This must be documented in the FMP.

#### **RESPIRATOR FIT TESTING, MEDICAL QUALIFICATION, AND TRAINING**

Employers must verify that any handler who uses a respirator is:

- Fit-tested and fit-checked using a program that conforms to OSHA's requirements (see 29 CFR Part 1910.134)
- Trained using a program that conforms to OSHA's requirements (see 29 CFR Part 1910.134)
- 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 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
  - Operations must cease and handlers not wearing air-purifying respirators must leave the application block.
- 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 chloropicrin have decreased to less than 0.15 ppm, provided that handlers do not experience sensory irritation. During the collection of air samples, a full-face air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the irritation is first experienced.
- When using monitoring devices to monitor air concentration levels, a direct reading detection device, such as a Matheson-Kitagawa, Dräger, or Sensidyne device must be used. The devices must have a sensitivity of at least 0.15 ppm for chloropicrin.
- When breathing zone samples are required, they must be taken outside respiratory protection equipment and within a ten inch radius of the handler's nose and mouth.
- When air-purifying respirators are worn, then 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 any sensory irritation when wearing an air-purifying respirator, or (2) an air sample is greater than or equal to 1.5 ppm, then all handler activities must cease and handlers must be removed from the application block. If operations cease the emergency plan detailed in the FMP must be implemented.
- 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 chloropicrin have decreased to less than 0.15 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 where the irritation is first experienced.
- Work activities can resume if all of the following conditions exist provided that the appropriate air-purifying respirator is worn:
  - Two consecutive breathing zone samples for chloropicrin taken at the handling site at least 15 minutes apart must be less than 1.5 ppm but are greater than 0.15 ppm,
  - Handlers do not experience sensory irritation while wearing the air-purifying respirator, and
  - Cartridges 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 where the irritation is first experienced.

### **TARP PERFORATION AND/OR REMOVAL**

**IMPORTANT:** Persons perforating, repairing, removing, and/or monitoring tarps are defined, within certain time limitations, as handlers (see handlers as stated in this labeling) and 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 fumigant injection into the soil is complete (e.g., after injection of the fumigant product and tarps have been laid or after drip lines have been purged and tarps have been laid), unless a weather condition exists which necessitates the need for early perforation or removal, see *Early Tarp Removal for Broadcast Applications Only* and *Early Tarp Perforation for Flood Prevention Activities* sections.
- If tarps will be removed before planting, tarp removal must not begin until at least 2 hours after tarp perforation is complete.
- If tarps will not be removed before planting, planting or transplanting must not begin until at least 48 hours after the tarp perforation is complete.
- If tarps are left intact for a minimum of 14 days after fumigant injection into the soil 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 used for fumigations may be perforated manually **ONLY** for the following situations:
  - At the beginning of each row when a coulter blade (or other device which performs similarly) is used on a motorized vehicle such as an ATV.
  - In fields that are 1 acre or less.
  - During flood prevention activities.
- In all other instances tarps must be perforated (cut, punched, poked, or sliced) only by mechanical methods.
- Tarp perforation for broadcast fumigations must be completed before noon.
- For broadcast fumigations, tarps must not be perforated if rainfall is expected within 12 hours.
- Early Tarp Removal for Broadcast Applications Only:
  - Tarps may be removed before the required 5 days (120 hours) if adverse weather conditions have compromised the integrity of the tarp, provided that the compromised tarp poses a safety hazard. *Adverse weather* includes high wind, hail, or storms that blow tarps off the field and create a hazard, e.g., tarps blowing into power lines and onto roads. A *compromised tarp* is a tarp that due to an adverse weather condition is no longer performing its intended function and is creating a hazard.
  - If tarps are removed before the required 5 days have elapsed due to adverse weather, the events must be documented in the post-application summary.
- Early Tarp Perforation for Flood Prevention Activities
  - Tarp perforation is allowed before the 5 days (120 hours) have elapsed.
  - Tarps must be immediately retucked and packed after soil removal.

## **MANDATORY GOOD AGRICULTURAL PRACTICES (GAPS)**

The following GAPS must be followed during all fumigant applications. All measurements and other documentation planned to ensure that the mandatory GAPS are achieved must be recorded in the FMP and/or the post-application summary.

### **Tarps** (when tarps are used in TRI-CLOR FUMIGANT applications)

- A written tarp plan must be developed and included in the FMP. The plan must include:
  - schedule and procedures for checking tarps for damage, tears, and other problems
  - plans for determining when and how repairs to tarps will be made, and by whom
  - minimum time following injection that tarp will be repaired
  - minimum size of tarp damage that will be repaired
  - other factors used to determine how and when tarp repair will be conducted
  - schedule, equipment, and methods used to perforate tarps
  - aeration plans and procedures following perforation of tarp, but prior to tarp removal or planting/transplanting
  - schedule, equipment, and procedures for tarp removal

### **Weather Conditions**

- Prior to fumigation the weather forecast for the day of the application and the 48-hour period following the fumigation must be checked to determine if unfavorable weather conditions exist (see *Identifying Unfavorable Weather Conditions* section) or are predicted and whether fumigation should begin.
- Wind speed at the application site must be a minimum of 2 mph at the start of the application or forecasted to reach at least 5 mph during the application.
- Do not apply if a shallow, compressed (low-level) temperature inversion is forecast to persist for more than 18 consecutive hours for the 48-hour period after the start of application, or if there is an air stagnation advisory issued by the National Weather Service in effect for the area in which the fumigation is planned.
- Detailed local forecasts for weather conditions, wind speed, and air stagnation advisories may be obtained on-line at <http://www.nws.noaa.gov> 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 Preparation**

- Soil must be properly prepared and at the surface be generally 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 fumigation. 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 fumigation 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 to the timing of the fumigation as possible to limit the length of time that the soil would be exposed to potentially erosive weather conditions.

### **TRI-CLOR FUMIGANT BEDDED AND BROADCAST SHANK APPLICATIONS: ADDITIONAL GAPS**

In addition to the GAPS required for all TRI-CLOR FUMIGANT soil fumigation applications, the following GAPS apply for injection applications:

**Tarps** (when tarps are used in TRI-CLOR FUMIGANT applications)

- Tarps must be installed immediately after the fumigant is applied to the soil.

#### **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.

#### **Soil Temperature**

- The maximum soil temperature at the depth of injection must not exceed 90 degrees F at the beginning of the application.
  - If air temperatures have been above 100 degrees F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP.

#### **Soil Moisture**

- The soil must be moist 9 inches below the surface. The amount of moisture needed will vary according to the soil type. Surface soil generally dries rapidly and must not be considered in this determination.
- Soil moisture must be determined by one of the following methods:
  - The USDA Feel and Appearance Method for testing, or
  - An instrument, such as a tensiometer.
- If there is insufficient moisture 9 inches below the surface, the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below 9 inches, soil moisture can be adjusted by discing or plowing before fumigant injection. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as close to the time of 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 application.

#### ***Soil moisture determination using the USDA Feel and Appearance Method***

- For **coarse** textured soils (fine sand and loamy fine sand) there must be enough moisture (50 to 75 percent available soil water moisture) so the soil is moist, forms 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 percent available soil water moisture) so the soil is moist,

forms 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 percent available soil water moisture) so the soil is moist, forms 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 percent available soil water moisture) so the soil is moist, forms 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. 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 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 agent, soil conservation service specialist, or pest control advisor (agriculture consultant) should be consulted for assistance.

#### Soil Sealing

- *For Broadcast Untarped Applications:* 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. Following elimination of the chisel trace, the soil surface must be compacted with a cultipacker, ring roller, and roller in combination with tillage equipment.
- *For Bedded Applications:* Preformed beds must be sealed by disruption of the chisel trace using press sealers, bed shapers, cultipackers, 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 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 Nobel plow or other injection shank that disrupts the chisel traces.

#### Application Depth

- *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 Untarped-Bedded Applications:* The injection point must be a minimum of 12 inches from the nearest final soil/air interface.
- *For Untarped-Broadcast Applications:* The injection point must be a minimum of 10 inches from the nearest final soil/air interface.
- *For Untarped-Broadcast Deep Applications:* The injection point must be a minimum of 18 inches from the nearest final soil/air interface.

### Application Methods and Equipment

- Apply TRI-CLOR FUMIGANT 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 TRI-CLOR FUMIGANT with a Nobel plow, use an outlet spacing of 9-12 inches along the sweeps.

### Planting Interval

- After application, leave the soil undisturbed for 10 to 14 days. Wet soil retards diffusion of the fumigant, thus requiring a longer soil exposure period. At the end of the soil exposure period, aerate the soil by plowing or deep cultivation. If heavy rains accompanied by low temperatures occur during the soil exposure period, working the soil several times is essential for thorough aeration. Aeration is usually complete when the odor of the fumigant is no longer evident.

### 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 steel 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 pressurized cylinder or the compressed air system.
- Rigs must include a flowmeter or a constant pressure system with orifice plates to insure 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 cylinder between 80 and 200 psi during the entire time it is connected to the application rig, if a compressed gas cylinder is used. *(This is not required 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.



- 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.
- In case of the rupture of a hose or fitting while applying the fumigant, immediately stop the tractor and motor. Get off the tractor and get to a place where the problem can be observed without exposure to the fumes. Approach from upwind, with respiratory protection if required and make the necessary repairs.
- When changing the cylinders, be certain they are turned off and the fumigant system is not under pressure.
- 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. At the end of the application, 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.

#### **TRI-CLOR FUMIGANT DRIP APPLICATIONS: ADDITIONAL GAPS**

In addition to the GAPS required for all TRI-CLOR FUMIGANT soil fumigation applications, the following GAPS apply for drip applications:

##### **Use Precautions**

- Apply this product only through 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 any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- The certified applicator or WPS trained handlers under the supervision of and in communication with the certified applicator shall shut the system down and make necessary adjustments should the need arise.

**Soil Preparation**

- Till fields with known plowpans because they can lead to puddling of the fumigant due to inadequate soil drainage.
- Beds should be listed, shaped and ready for planting.
- Soil moisture should be at 50% of field capacity in the top 2-3" at time of TRI-CLOR FUMIGANT application.

**Product and Dosage**

- Plan the application by calculating the amount of TRI-CLOR FUMIGANT required at the appropriate rate for the crop, treated area and target pest.
- TRI-CLOR FUMIGANT must be applied through a drip irrigation system to wet the soil thoroughly in the area being treated. Drip emitters should be spaced 8-12 inches apart.
- Pre-mix with TS Series surfactant prior to application through drip system at a ratio of 1:20 surfactant to TRI-CLOR FUMIGANT. Contact your Trical representative to obtain TS Series surfactants.
- TS Series surfactant may be metered into the supply line for TRI-CLOR FUMIGANT and then passed through a mixing device such as a centrifugal pump or static mixer, to assure proper agitation. The mixture of TRI-CLOR FUMIGANT and TS Series surfactant must then be metered into the water supply line and passed through a mixing device such as a centrifugal pump or static mixer, to assure proper agitation before it is distributed into the drip irrigation system.
- Meter TRI-CLOR FUMIGANT into the drip system according to the dosage. An adequate concentration of TRI-CLOR FUMIGANT must be present in order to be effective. At no time should the concentration of TRI-CLOR FUMIGANT exceed 1,500 ppm by weight in the drip line. For example, a 300 pounds per acre application rate would require 24,000 gallons of water per treated acre to deliver a 1,500 ppm concentration.

**System Controls and Integrity**

- The irrigation system (main lines, headers, drip tape) must be thoroughly checked for leaks before the start of application. Leak detection requires that the irrigation system be at full operating pressure. The amount of time needed at full operating pressure will vary by irrigation system design. Look for puddling along major pipes (holes in pipes or leaky joints), at the top and ends of rows (leaky connection, open drip tape), and on the bed surface (damaged drip tape, malfunctioning emitters). Any leaks discovered during the pre-application check must be repaired prior to fumigant application.
- To inject fumigant, use a metering system (such as a positive pressure system, positive displacement injection pump, diaphragm pump, or a Venturi system) effectively designed and constructed of materials that are compatible with the fumigant and capable of being fitted with system interlocking controls. Do not use containers pumps or other equipment made of aluminum, magnesium or their alloys as chloropicrin can be corrosive to such metals.
- The system must contain:
  - A functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination and backflow;
  - A functional, automatic, quick-closing check valve to prevent the flow of fluids back toward the fumigant container;

- A functional, normally closed, solenoid-operated valve located on the intake side of the injection point and connected to the system interlock to prevent the fumigant from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down;
- Functional interlocking controls to automatically shut off the fumigant injection when the irrigation water flow stops or decreases to the point where fumigant distribution is adversely affected.

#### **Site of Injection and Irrigation System Layout**

- Site of injection must be as close as practical to the area being treated (such as direct injection of fumigant into the header pipe/manifold or into an aboveground delivery pipe attached to the header). If the fumigant is injected into a main line, make sure the irrigation pipe is able to be cleared of all fumigant as the fumigant may pool in low sections of the pipe. Also make sure that valves on lateral lines of the main line are closed, if these lateral lines lead to areas not being fumigated at the time of the application.

#### **System Flush**

- After application of TRI-CLOR FUMIGANT, continue to drip-irrigate the area with water to flush the irrigation system. Do not allow TRI-CLOR FUMIGANT to remain in the irrigation system after the application is complete. The total volume of water, including the amount used for flushing the irrigation system, must be adequate to completely remove the fumigant from the lines, but should be less than the amount that could over-saturate the beds (bed collapse can occur from over-saturation) and should not exceed 1.5 acre-inches (40,000 gallons) of water per acre. If common lines are used for both the fumigant application and water seal (if a water seal is applied) these lines must be adequately flushed before starting the water seal and/or normal irrigation practices.

#### **Soil Sealing**

- If tarps are used they must be put in place before the fumigation begins.
- Tarp edges must be buried along the furrow and at the ends of rows.

#### **Application Depth**

- *For Untarped Applications:* The drip tape must be buried at minimum 5 inches.

#### **Planting Interval**

- Do not disturb treated soil for 2 weeks. Wet soil retards diffusion of the fumigant thus requiring a longer aeration period. Aeration is usually complete when the odor of the fumigant is no longer evident.

#### **REQUIREMENTS FOR PRE-PLANT GREENHOUSE SOIL FUMIGATION**

- The maximum area that can be treated is 50,000 square feet.
- All applications must be tarped.
- During the application keep doors, vents and windows to the outside open and fans or other mechanical ventilation systems running within the application block.
- Leaks through which gases could enter adjacent enclosed areas must be sealed.

### **SITE-SPECIFIC FUMIGATION MANAGEMENT PLAN (FMP)**

Prior to the start of fumigation, the certified applicator supervising the application must verify that a site-specific FMP exists for each application block (i.e., a greenhouse or field or portion of a field treated with a fumigant in any 24-hour period). 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/operator, 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 fumigation.

Each site-specific FMP must contain the following elements:

- ❖ Applicator information (name, phone number, pesticide applicator license and/or certificate number, employer name, employer address)
- ❖ 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 owner/operator of the application block
- ❖ General application information (target application date/window, brand name of fumigant, EPA registration number)
- ❖ Tarp information and procedures for repair, perforation, and removal (if tarp is used)
  - Brand name, lot number, thickness
  - Name and phone number of person responsible for repairing tarps
  - Schedule for checking tarps for damage, tears, and other problems
  - Maximum time following notification of damage that the person(s) responsible for tarp repair will respond
  - Minimum time following application that tarp will be repaired
  - Minimum size of damage that will be repaired
  - Other factors used to determine when tarp repair will be conducted
  - Name and phone number of person responsible for perforating and/or removing tarps (if other than certified applicator)
  - Equipment/methods used to perforate tarps
  - Schedule and target dates for perforating tarps
  - Schedule and target dates for removing tarps
- ❖ Soil conditions (description of soil texture in application block, method used to determine soil moisture)
- ❖ Weather conditions (summary of forecasted conditions for the day of the application and the 48-hour period following the fumigant application)
  - Wind speed
  - Inversion conditions (e.g., shallow, compressed (low-level) temperature inversion)
  - Air stagnation advisory
- ❖ Air-purifying respirators, air-rescue devices, and other personal protective equipment (PPE) for handlers (handler task, protective clothing, air-purifying respirator type, respirator)

cartridge type, respirator cartridge replacement schedule, air-rescue device type, eye protection, gloves, other PPE)

- ❖ Emergency procedures (evacuation routes, locations of telephones, contact information for first responders, local/state/federal/tribal contacts, key personnel and emergency procedures/responsibilities in case of an incident, equipment/tarp/seal failure or complaints, or other emergencies)
- ❖ Fumigant Treated Area posting procedures (person(s) who will post Fumigant Treated Area signs, location of Fumigant Treated Area signs, procedures for Fumigant Treated Area sign removal)
- ❖ Plan describing how communication will take place between applicator, land owner/operator, and other on-site handlers (e.g., tarp perforators/removers, irrigators) for complying with label requirements (e.g., timing of tarp perforation and removal, PPE)
  - Name and phone number of persons contacted
  - Date contacted
- ❖ Authorized on-site personnel
  - 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
  - For handlers designated to wear air-purifying respirators (an air-purifying respirator is required for a minimum of 2 handlers):
    - date of medical qualification to wear an air-purifying respirator,
    - date of air-purifying respirator training, and
    - date of fit-testing for the air-purifying respirator.
- ❖ Air monitoring plan
  - If sensory irritation is experienced, indicate whether operations will be ceased or operations will continue with an air-purifying respirator
  - If the intention is to cease operations when sensory irritation is experienced, provide the name, address, and phone number of the handler that will perform monitoring activities prior to operations resuming
  - When air-purifying respirators are worn:
    - Representative handler tasks to be monitored
    - Monitoring equipment to be used and timing of monitoring
- ❖ Good Agricultural Practices (GAPs)
  - Description of applicable mandatory GAPs
  - Measurements and documentation to ensure GAPs are achieved (e.g., measurement of soil and other site conditions)
- ❖ Description of hazard communication. (The application block has been posted in accordance with the label. Pesticide product labels and material safety data sheets are on-site and readily available for employees to review.)
- ❖ Record-keeping procedures (the owner/operator of the application block as well as the certified applicator 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 fumigation sites (e.g., applicator information, authorized on-site personnel, 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).

Once the application begins, the certified applicator must make a copy of the FMP available for viewing by handlers involved in the fumigation. The certified applicator or the owner/operator 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.

Within 30 days of completing the application portion of the fumigation process, the certified applicator supervising the application must complete a post-application summary that describes any deviations from FMP that have occurred, measurements taken to comply with GAPS, monitoring results as well as any complaints and/or incidents that have been reported to him/her.

**The Post-Application Summary must contain the following elements:**

- ❖ Actual date of the application, application rate, and size of application block fumigated
- ❖ Summary of weather conditions on the day of the application and during the 48-hour period following the fumigant application
- ❖ Soil temperature measurement (if air temperatures were above 100 degrees F in any of the 3 days prior to the application)
- ❖ Tarp damage and repair information (if applicable)
  - Location and size of tarp damage
  - Description of tarp/tarp seal/tarp equipment failure
  - Date and time of tarp repair
- ❖ Tarp perforation/removal details (if applicable)
  - Description of tarp removal (if different than in the FMP)
  - Date tarps were perforated
  - Date tarps were removed
- ❖ 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
  - Description of control measures or emergency procedures followed after complaint
- ❖ Description of incidents, equipment failure, or other emergency and emergency procedures followed (if applicable)
- ❖ Details of elevated air concentrations monitored on-site (if applicable)
  - Location of elevated air concentration levels
  - Description of control measures or emergency procedures followed
  - Air monitoring results
    - When sensory irritation experienced:
      - Date and time of sensory irritation
      - Handler task/activity

- Handler location where irritation was observed
- Resulting action (e.g., cease operations, continue operations with air-purifying respirators)
- When using a direct read instrument:
  - Sample date and time
  - Handler task/activity
  - Handler location
  - Air concentration
  - Sampling method
- ❖ Date of Fumigant Treated Area sign removal
- ❖ Any deviations from the FMP
- ❖ Record-keeping procedures (the owner/operator of the application block as well as the certified applicator must keep a signed copy of the post-application summary for 2 years from the date of application).

#### **PRECAUTIONS TO FOLLOW: PRIOR TO FUMIGATION**

- Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory Agencies as required.
- Obtain medical assistance at once in case of illness after exposure, and do not allow conditions which could accidentally cause further exposure until recovery is complete.
- Never fumigate alone. It is imperative to always have an assistant and proper protection equipment, to aid in case of an accident.
- Drivers of application equipment must advise other workers of all precautions and procedures. In addition, drivers must instruct their helpers in the mechanical operation of the tractor and how to work with the tractor and driver while fumigating.
- Handle this fumigant in the open, when possible, with the operator "upwind" from the container where there is good ventilation.

#### **GENERAL APPLICATION RESTRICTIONS**

THIS FUMIGANT IS A HIGHLY HAZARDOUS MATERIAL AND MUST BE HANDLED WITH CARE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION WHO ARE TRAINED WITH ITS PROPER USE.

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.

#### **SPILL AND LEAK PROCEDURES**

Evacuate everyone from the immediate area of the spill or leak. For entry into affected area to correct problem, wear the personal protective equipment (including prescribed respirator) specified in the *Hazards to Humans and Domestic Animals* section of this labeling. Move leaking or damaged containers outdoors or to an isolated location. Observe strict safety precautions. Work upwind, if possible. Allow spilled fumigant to evaporate or to absorb onto vermiculite, dry sand, earth, or similar absorbent material. Such material should be disposed of on site or at an approved disposal facility. Only correctly trained and PPE-equipped handlers are permitted to perform such cleanup. Do not permit entry into the spill or leak area by any other person until the concentration of chloropicrin is measured to be 0.15 ppm or less.

### **NOTE CAREFULLY**

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, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury and/or nitrate starvation 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 degrees F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

### **SOIL FUMIGATION**

TRI-CLOR FUMIGANT is a pre-plant fumigant for the control of soil-borne pests, such as wireworms and nematodes, and diseases caused by certain species of *Phythium*, *Phytophthora*, *Fusarium*, and *Verticillium*.

### **PREPLANT SOIL FUMIGATION USES MAXIMUM DOSAGES<sup>1</sup>**

<b>Field soils to be planted to</b>	<b>Broadcast equivalent (pounds product/acre)<sup>3</sup> for non-tarped shank injection applications</b>	<b>Broadcast equivalent (pounds product/acre)<sup>3</sup> for tarped or deep injection non-tarped shank injection applications</b>	<b>Broadcast equivalent (pounds product/acre)<sup>3</sup> for drip irrigation applications</b>
Floral crops, Nursery Crops (including forest nursery seedlings)	175	350	100-300
Plant and seed beds	175	300-350	100-300
Eggplant, Cucumbers, Melons, Tomatoes	175	300-350	100-300
Sweet potatoes, Yams	175	150-350	100-300
Onions	175	200-350	100-300
Strawberries	175	150-350	100-300
All other crops <sup>2</sup>	175	350	100-300

<sup>1</sup>Do not exceed maximum application rates in Table 1. Row, bed or strip applications may be made at the broadcast equivalent rates but the amount used will be proportionately less per acre depending on the spacing and width of treatment in the row, bed or strip.

<sup>2</sup>Not to be used with aquatic plants or for forestry uses.

<sup>3</sup>To facilitate application of this product when applying in low dosages, dilution with the solvent Exxsol<sup>®</sup> D-80 is allowed. The maximum rate of Exxsol<sup>®</sup> D-80 shall not exceed 150 lbs./acre.



### WARNING AGENT

TRI-CLOR FUMIGANT may be used for clearing structures prior to fumigation with odorless fumigants. Use 1 ounce per 10,000 to 15,000 cubic feet of space to be fumigated. Place a handful of cotton in a shallow container, or use a "Pic-Pan", and set it in the air stream of an electric fan. Five to ten minutes before introducing the odorless fumigant, pour TRI-CLOR FUMIGANT over the cotton in the shallow container or into the "Pic-Pan". TRI-CLOR FUMIGANT may be dispensed at one or more locations, so chosen as to ensure even distribution.

***TRI-CLOR FUMIGANT is compatible when mixed with Chlorinated C<sub>3</sub> Hydrocarbons.***

### STORAGE AND DISPOSAL

***DO NOT CONTAMINATE WATER, FOOD, OR FEED BY STORAGE OR DISPOSAL.***

**PESTICIDE STORAGE AND HANDLING:** Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area. Store cylinders upright, secured to a rack or wall to prevent tipping. Do not subject cylinders to rough handling or mechanical shock such as dropping, bumping, dragging, or sliding. Do not use rope slings, hooks, tongs or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured. Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is 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 Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. When a cylinder is partially full, and there is no further requirement for the product, return the cylinder to the registrant or distributor. Replace safety cap and valve protection bonnet before shipping container.

**RETURN OF CONTAINERS:** Cylinders are the property of the registrant or distributor and must be returned promptly after use by collect auto freight. Do not ship cylinders without safety caps or valve protection bonnets.

**REFILLABLE CONTAINER:** Only the registrant or distributor is allowed to refill this container. This container can be refilled with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**CONTAINER DISPOSAL:** To clean the container before final disposal, remove any remaining liquid from the container, using dry air pressure if necessary. Allow container to aerate for at least 5 days. After aeration, wash container using hot water; then offer container to qualified reconditioner or dispose of as directed by State or local regulations.

**SHIPPING:** This fumigant is classified in the U.S. Department of Transportation Hazardous Materials Regulations as Chloropicrin, 6.1, UN 1580, PG I, Poison-Inhalation Hazard, Hazard Zone B and no exemptions from specifications, packaging, marking, or labeling are allowed. Describe empty cylinders as having last contained Chloropicrin (Inhalation Hazard). Do not ship with foods, feeds, or clothing.

### **WARRANTY**

Seller warrants that this product conforms to the chemical description on its label and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use. To the extent consistent with applicable law, neither this warranty nor any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, express or implied, extends to the use of this product in a manner contrary to its label.