# 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. Longerterm 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 and long pants, and
- Shoes and socks.

When performing tasks with potential for contact with liquid fumigant, 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 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* sections, handlers must wear at minimum either:

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

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.

See label booklet for additional Precautionary Statements.

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.

# **Chloropicrin 100 Fumigant**

#### **ACTIVE INGREDIENT:**

Chloropicrin	. 99%
OTHER INGREDIENTS:	1%
TOTAL:	100%

This product weighs 13.88 lbs./gal. at 68°F (20°C).

#### KEEP OUT OF REACH OF CHILDREN

**DANGER** 



**PELIGRO** 

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

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

#### **FIRST AID** IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice. IF ON SKIN OR • Take off contaminated clothing. **CLOTHING:** Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. IF IN EYES: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

NOTE: 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.

#### NOTE TO PHYSICIAN

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.

EMERGENCY PHONE NUMBER: Infotrac, 1-800-535-5053

Produced for:

Soil Chemicals Corporation D/B/A Cardinal Professional Products

P. O. Box 782 • Hollister • CA 95024-0782 • (831) 630-2258

#### 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 handlers may be in the application block from the start of the application until the entry restricted period ends, and in the buffer zone during the buffer zone period. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

#### Storage and Disposal

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

**Pesticide Storage:** Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

**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.

Container Handling: 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.

**Return of Containers:** Cylinders are the property of the registrant or distributor and must be returned promptly after use. 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.

See label booklet for complete Directions for Use.

#### 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.

EPA Est. 11220-CA-8 NET CONTENTS EPA Reg. No. 8536-2

September 20, 2012

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#### Produced for:

# Soil Chemicals Corporation D/B/A Cardinal Professional Products

P. O. Box 782 • Hollister • CA 95024-0782 (831) 630-2258



EPA Reg. No. 8536-2 EPA Est. 11220-CA-8

32

#### 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.

# **Chloropicrin 100 Fumigant**

#### **ACTIVE INGREDIENT:**

Chloropicrin	. 99%
OTHER INGREDIENTS:	
TOTAL:	

This product weighs 13.88 lbs./gal. at 68°F (20°C).

#### KEEP OUT OF REACH OF CHILDREN

**DANGER** 



**PELIGRO** 

#### 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.)

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

	FIRST AID
	<ul> <li>Move person to fresh air.</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>
CLOTHING:	<ul> <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>
	<ul> <li>Hold eyes 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 eyes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>

NOTE: 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.

#### **NOTE TO PHYSICIAN**

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.

EMERGENCY PHONE NUMBER: Infotrac, 1-800-535-5053

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Date of Labeling: September 20, 2012

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# PERSONAL PROTECTIVE EQUIPMENT (PPE)

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- · Long-sleeved shirt and long pants, and
- · Shoes and socks.

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- · Long-sleeved shirt and long pants,
- Chemical-resistant gloves.
- · Chemical-resistant apron,
- 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* sections, handlers must wear at minimum either:

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

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 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. Wash the outside of gloves before removing. 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 and System Controls and Integrity sections 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 handlers may be in the application block from the start of the application until the entry restricted period ends, and in the buffer zone during the buffer zone period. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, 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.

(continued in next column)

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

#### Terms Used in This Labeling

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

Fumigant Safe Handling Information: Information that must be provided annually to handlers must include the following: (1) what fumigants are and how they work, (2) safe application and handling of soil fumigants, (3) air monitoring and respiratory protection requirements for handlers, (4) early signs and symptoms of exposure, (5) appropriate steps to take to mitigate exposures, (6) what to do in case of an emergency, and (7) how to report incidents. Application Block: Area within the perimeter of the fumigated portion of a field (including furrows, irrigation ditches, roadways). The perimeter of the application block is the border that connects the outermost edges of total area treated with the fumigant product.

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

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

<u>Application is Complete:</u> The time at which the fumigant has stopped being delivered/dispensed into the soil and the soil has been sealed; drip lines have been purged (if applicable).

(continued on next page)

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

<u>Buffer Zone:</u> 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. <u>Buffer Zone Period:</u> 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.

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

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

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

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

#### **Application Restrictions**

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

#### **Product Information**

CHLOROPICRIN 100 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 *Pythium*, *Phytophthora*, *Fusarium*, and *Verticillium*.

#### **Use Precautions**

- 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.
- 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 accidently 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 driver while fumigating.
- Handle this fumigant in the open, when possible, with the operator "upwind" from the container where there is good ventilation.
- 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, 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° 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 <a href="www.epa.gov/fumiganttraining">www.epa.gov/fumiganttraining</a> for the active ingredient(s) in this product. The training must be completed in the time slisted on the website. The FMP must document the date and location where the soil fumigant training program was completed.

#### Handlers

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

- · Monitoring fumigant air concentrations;
- Cleaning up fumigant spills (this does not include emergency personnel not associated with the 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 in the application block from the start of the application until the entry restricted period ends and in the buffer zone during the buffer zone period by anyone other than persons who have been appropriately trained and equipped as handlers in accordance with the requirements in WPS (40 CFR Part 170). (NOTE: persons repairing and monitoring tarps are considered handlers for the duration listed below). Prohibited activities (except for trained and equipped handlers) include:

- Participating in the application as supervisors, loaders, drivers, tractor co-pilots, shovelers, cross ditchers, or as other direct application participants;
- Installing, repairing, operating, or removing irrigation equipment;
- Performing scouting, crop advising, or monitoring tasks:
- Installing, perforating (cutting, punching, slicing, poking), or removing tarps; and
- Repairing or monitoring tarps until 14 days after application is complete if tarps are not perforated and removed during those 14 days.

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

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

### Protection for Handlers

#### Supervision of Handlers:

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

For handling activities that take place after the application is complete until the entry restricted period expires, the certified applicator is not required to be on-site, but must have communicated in a manner that can be understood by the site owner and handlers

responsible for carrying out those activities the information necessary to comply with the label and procedures described in the FMP (e.g., emergency response plans and procedures).

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

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

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/canisters 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/canisters 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.

Cartridges or canisters must be replaced when odor or sensory irritation from this product becomes apparent during use, if the measured concentration of chloropicrin is greater than or equal to 1.5 ppm, or after 8 hours of cumulative use, whichever occurs first.

### Respirator Fit Testing, Medical Qualification, and Training:

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

- · Fit-tested and fit-checked.
- · Trained, and
- Examined by a qualified medical practitioner to ensure physical ability to safely wear the style of respirator to be worn. A qualified medical practitioner is a physician or other licensed health care professional who will evaluate the ability of a worker to wear a respirator. The initial evaluation consists of a questionnaire that asks about medical conditions (such as a heart condition) that would be problematic for respirator use. If concerns are identified, then additional evaluations, such as a physical exam, might be necessary. The initial evaluation must be done before respirator use begins. Handlers must be reexamined by a qualified medical practitioner if their health status or respirator style or use-conditions change.
- Upon request by local/state/federal/tribal enforcement personnel, employers must provide documentation demonstrating how they have complied with these requirements.

### Respiratory Protection and Stop Work Triggers:

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

 If at any time any handler experiences sensory irritation (tearing, burning of the eyes or nose), then either:

- An air-purifying respirator (full facepiece or gas mask) must be worn by all handlers who remain in the application block or surrounding buffer zone, or
- Operations must cease and handlers not wearing an air-purifying respirator must leave the application block and surrounding buffer zone.
- Handlers can remove air-purifying respirators (full facepiece or gas mask) 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, an air-purifying respirator (full facepiece or gas mask) must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced.
- When using monitoring devices to monitor air concentration levels, a direct read detection device, such as an electronic device or a colorimetric device (e.g., Matheson-Kitagawa, Draeger, or Sensidyne) must be used. The devices must have sensitivity of at least 0.15 ppm for chloropicrin. Persons using direct read detection devices must follow the manufacturer's directions.
- When breathing zone samples are required, they
  must be taken outside respiratory protection
  equipment and within a 10 inch radius of the
  handler's nose and mouth.
- When air-purifying respirators (full facepiece or gas mask) are worn, air monitoring samples must be collected at least every 2 hours in the breathing zone of a handler performing a representative handling task.
- If at any time: (1) a handler experiences sensory irritation when wearing an air-purifying respirator (full facepiece or gas mask), or (2) a chloropicrin 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 and surrounding buffer zone.
- Handlers can resume work activities without airpurifying respirators (full facepiece or gas mask) 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 (full facepiece or gas mask) must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced or where the sample(s) were greater than or equal to 1.5 ppm.
- Handlers can resume work activities if all of the following conditions exist provided an airpurifying respirator (full facepiece or gas mask) 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.
- handlers do not experience sensory irritation while wearing the air-purifying respirator (full facepiece or gas mask), and
- filter cartridges/canisters have been changed.
- During the collection of air samples an airpurifying respirator (full facepiece or gas mask) must be worn by the handler taking the air samples. Samples must be taken at the location where the irritation was first experienced or where the sample(s) were greater than or equal to 1.5 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.

- Tarps must not be perforated until a minimum of 5 days (120 hours) have elapsed after the application is complete, unless a weather condition exists which necessitates early tarp perforation or removal (see Early Tarp Removal for Broadcast Applications Only and Early Tarp Perforation during Flood Prevention Activities for Bedded Applications Only requirements).
- If tarps are perforated within 14 days after the application is complete, tarp removal must not begin until at least 2 hours after tarp perforation is complete.
- If tarps are perforated but not removed within 14 days after the application is complete, planting or transplanting must not begin until at least 48 hours after the tarp perforation is complete.
- If tarps are not perforated or removed within 14 days after the application is complete, planting or transplanting may take place while the tarps are being perforated.
- Each tarp panel used for broadcast application must be perforated.
- Tarps may be perforated manually ONLY for the following situations:
  - At the beginning of each row when a coulter blade (or other device which performs similarly) is used on a motorized vehicle such as an ATV.
- In fields that are 1 acre or less.
- o 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 applications must be completed before noon.

- two consecutive breathing zone samples for chloropicrin taken at the handling site at
   For broadcast applications, tarps must not be perforated if rainfall is expected within 12 hours.
  - Early Tarp Removal for Broadcast Applications Only:
    - o Tarps may be removed before the required 5 days (120 hours) if adverse weather conditions have compromised the integrity of the tarp, provided that the compromised tarp poses a safety hazard. Adverse weather includes high wind, hail, or storms that blow tarps off the field and create a hazard, e.g., tarps blowing into power lines and onto roads. A compromised tarp is a tarp that due to an adverse weather condition is no longer performing its intended function and is creating a hazard.
  - Early Tarp Perforation during Flood Prevention Activities for Bedded Applications Only:
    - Tarp perforation is allowed before the 5 days (120 hours) have elapsed.
    - Tarps must be immediately retucked and packed after soil removal.

## Entry Restricted Period and Notification

#### **Entry Restricted Period**

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

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

#### NOTES:

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

[See Notification section on next page.]

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#### 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:

			RO."

- "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.
- □ "CHLOROPICRIN 100 FUMIGANT", and
   □ Name, address, and telephone number of the certified applicator in charge of the fumigation.

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

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

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

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

# Mandatory Good Agricultural Practices (GAPs)

The following GAPs must be followed during all fumigant applications.

**Tarps** (when tarps are used in CHLOROPICRIN 100 FUMIGANT applications)

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

#### 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: <a href="http://www.nws.noaa.gov">http://www.nws.noaa.gov</a>, 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 surrise 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 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 to the start of the application as possible to limit the length of time that the soil would be exposed to potentially erosive weather conditions.

# CHLOROPICRIN 100 FUMIGANT Bedded and Broadcast Shank Applications: Additional GAPs

In addition to the GAPs required for all CHLOROPICRIN 100 FUMIGANT soil fumigation applications, the following GAPs apply for injection applications:

**Tarps** (when tarps are used in CHLOROPICRIN 100 FUMIGANT applications)

 Tarps must be installed immediately after the fumigant is applied to the soil.
 For Tarped Applications: The use of a tarp does not eliminate the need to minimize chisel traces

#### 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° F at the beginning of the application.
- o 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.

#### **Application Methods and Equipment**

- Apply CHLOROPICRIN 100 FUMIGANT with chisel equipment or a Noble plow.
- For shallow (injection depth minimum 8-10 inches) broadcast work, use a shank spacing of 9-12 inches.
- For deep applications (injection depth minimum 18 inches), a shank spacing up to 24 inches may be used; however, it is recommended that the shank spacing not exceed 18 inches.
- When applying CHLOROPICRIN 100 FUMIGANT with a Noble plow, use an outlet spacing of 9-12 inches along the sweeps.

#### 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.

#### 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 Noble plow or other injection shank that disrupts the chisel traces.

#### 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:
- the USDA Feel and Appearance Method for testing (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 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 the start of the application. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as close 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 medium textured soils (sandy clay loam, loam, and silt loam), the soil is moist enough (50 to 75% available water capacity) to form a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.
- For fine textured soils (clay, clay loam, and silty clay loam), 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, 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 9

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 conservationist, or pest control advisor (agriculture consultant) should be consulted for assistance.

#### 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 pressurizing cylinder 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:
  - o 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 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.)
- o 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
- In case of the rupture of a hose or fitting while applying the fumigant, immediately stop the tractor or 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 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. If the rig uses a centrifugal pump instead of compressed gas to inject fumigant into the soil. vou may clear residual fumigant from the fumigant lines using an application wand connected to the system's low point 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.

#### 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.

#### **CHLOROPICRIN 100 FUMIGANT**

#### Tree Replant Application

#### Using Handheld Equipment: GAPs

This application method is used when CHLOROPICRIN 100 FUMIGANT is applied to individual tree sites in an existing orchard where shank or drip applications are not possible.

In addition to the GAPs required for all CHLOROPICRIN 100 FUMIGANT soil fumigation applications, the following GAPs apply for CHLOROPICRIN 100 FUMIGANT tree replant applications:

#### Site Preparation

- Remove the tree stump and primary root system in each individual tree-site with a back-hoe or other similar equipment, for example an auger.
- The hole must be backfilled with soil before application.

#### **Application Depth**

- Using a probe, inject 0.5 to 1.0 lbs of CHLOROPICRIN 100 FUMIGANT to a depth of 18-24 inches into the center of the area being treated.
- The fumigant must be injected at least 18 inches into the soil.

#### System Flush

 Before removing the application wand from the soil the wand must be cleared using nitrogen or compressed air.

#### Soil Sealing

 After the wand is cleared and removed from the soil, the injection hole must be either covered with soil and tamped or the soil must be compacted over the injection hole.

#### Planting Interval

Aerate the soil before planting.

## TABLE 1<sup>1</sup> PREPLANT SOIL FUMIGATION USES

Field soils to be planted to	Application rate (pounds product/ treated acre) <sup>3</sup> for un- tarped shank broad- cast applications	Application rate (pounds product/ treated acre) <sup>3</sup> for tarped shank bed, strip and broadcast; untarped shank bed; and untarped deep shank broadcast applications
Floral crops, nursery crops (including forest nursery seedlings)	175	350
Plant and seed beds	175	300 - 350
Eggplant, cucumbers, melons, tomatoes	175	300 - 350
Sweet potatoes, yams	175	150 - 350
Onions	175	200 - 350
Strawberries	175	150 - 350
All other crops <sup>2</sup>	175	150 - 350
Miscellaneous uses	Application rate	
Tree Hole Replant	1 lb./100 sq. ft.	

- <sup>1</sup> Do not exceed specified maximum application rates in Table 1.
- <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® D-80 is allowed. The maximum rate of Exxsol® D-80 shall not exceed 150 lbs./acre.

#### **Calculating the Broadcast Equivalent Application Rate**

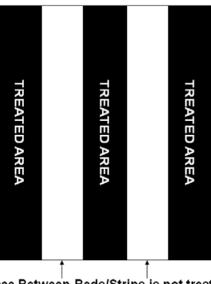
To calculate the broadcast equivalent rate for bedded or strip applications the following information is needed:

- · 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.

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



Space Between Beds/Strips is not treated

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

broadcast equivalent rate (pounds (or gallons) = product/acre)

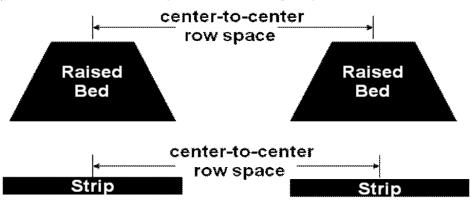
strip or bed bottom width (inches)

pounds (or gallons) of product / treated acre applied in the strip or bed

center-to-center row spacing (inches)

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

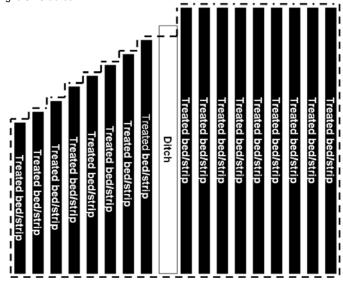
Figure 2. Center Row Spacing



#### Sample broadcast equivalent rate calculation

#### Assumptions:

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



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broadcast equivalent rate strip or bed bottom width area of strips or pounds product/ (pounds product/acre) (inches) x beds + row spacing x treated acre applied in the bed application block size center-to-center row spacing (inches) 200 pounds \_30-inch width beds 9.75 acres 60-inch row spacing 10 acres product/ treated acre

12 = 97.5 pounds product/acre

#### **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).
  - o 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
- . The buffer zone period begins at the start of the application and lasts for a minimum of 48 hours after the application is complete.

#### Buffer zone proximity

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

#### Structures under the control of the owner of the application block

- · Buffer zones must not include buildings used for storage, (e.g., sheds, barns, garages) UNLESS:
- 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
- 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 chloropicrin 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
- · 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

- Vehicular and bicycle traffic on public and private roadways through the buffer zone is permitted. (NOTE: Buffer zones are not permitted to include bus stops or other locations where persons wait for public transit.)
- For all other publicly owned and/or operated areas such as parks, sidewalks, permanent walking paths, playgrounds, and athletic fields, buffer zones must not include these areas UNI FSS:
  - 1. The area is not occupied during the buffer zone period.
  - 2. Entry by non-handlers is prohibited during the buffer zone period, and
  - 3. Written permission to include the public area in the buffer zone is granted by the appropriate state and/or local authorities responsible for management and operation of the area.

Certified applicators must comply with all local laws and regulations. See the Posting section for additional requirements that may apply.

#### **Buffer Zone Distances**

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

- · Buffer zone distances must be based on lookup tables in this labeling (25 feet is the minimum distance regardless of site-specific application parameters).
- If after applying all applicable buffer zone credits the buffer zone is greater than ½ mile (2,640 ft), then the application is prohibited.

- For selective tree replant fumigation in an zone credits since the soil organic content is 1.5% orchard using handheld application methods, the minimum buffer zone will be 25 feet measured from the center of each injection site.
- For all other applications Tables 2 to 7 must be used to determine the minimum buffer distances as appropriate for the method of application. Round up to the nearest rate and block size, where applicable. Applications are prohibited for rates or block sizes that exceed what is presented in the buffer zone tables.

#### **Buffer Zone Credits**

The buffer zone distances for CHLOROPICRIN 100 FUMIGANT applications may be reduced by the percentages listed below. Credits may be added, but credits cannot exceed 80%. Also, the minimum buffer zone distance is 25 feet. regardless of buffer zone credits available.

- See www.tarpcredits.epa.gov for a list of tarps that have been tested and determined to qualify for buffer reduction credits. Only tarps listed on this website qualify for buffer reduction credits.
- · 10% reduction in buffer zone distance IF the Symmetry<sup>™</sup> application system is used with a tarp that qualifies for a credit and the application rate is d" 100 pounds a.i./treated acre. The 10% credit for the Symmetry™ application system is added to the buffer zone credit for the tarp. For example if the Symmetry™ application system is used with a tarp that qualifies for a 40% credit the total credit for the tarp and the application system would be 50%.
- 15% reduction in buffer zone distance. IF potassium thiosulfate (KTS) is applied at a minimum rate of 300 pounds per acre.
- 15% reduction in buffer zone distance, IF 1/4 to ½ inch of water is applied.
- 10% reduction in buffer zone distance, IF the organic content of the soil in the application block is ≥ 1% - 2%; a 20% reduction in buffer zone distance, IF the organic content of the soil in the application block is > 2% - 3%; and a 30% reduction in the buffer zone distance. IF the organic content of the soil in the application block is > 3%.
- · 10% reduction in buffer zone distance. IF the soil temperature is measured to be 50°F or less. Record temperature measurements at the application depth or 12 inches, whichever is shallower.
- · 10% reduction in the buffer zone distance. IF the clay content of the soil in the application block is greater than 27%.

#### Examples of Buffer Zone Calculations with Credits Applied

If the buffer zone is 50 feet, and the application qualifies for a buffer zone 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 50feet, and the application qualifies for two buffer has expired.

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
- o Some examples of points of entry include, but are not limited to, roadways, sidewalks, paths, and bike trails.
- o 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.
- o 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:
- o The printed side of the sign must face away from the application block toward areas from which people could approach.
- o 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).
- o 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.
- o Signs must be removed within 3 days after the end of the buffer zone period.
- o 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
- o The Buffer Zone signs must contain the following information:

☐ The 'Do Not Walk' symbol

☐ DO NOT ENTER/NO ENTRE,

☐ CHLOROPICRIN 100 FUMIGANT (Chloropicrin) BUFFER ZONE.

☐ Contact information for the certified applicator in charge of the fumigation.

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

Table 2. Strip Tarp Buffer Zone Distances in Feet

	160	35	47	09	28	133	173	200	233	279	331	397	463	543	595	647	669	751	803	855	200	961	1015	1070
	150	35	44	99	81	125	163	188	219	261	311	373	435	909	558	909	929	704	753	801	850	901	952	1003
	140	30	11	23	92	117	152	175	504	244	290	348	406	475	520	999	611	<i>L</i> \$9	702	748	793	841	888	936
	130	30	38	49	20	108	141	163	061	226	269	323	377	441	483	525	998	610	652	694	737	781	825	869
	120	52	35	45	99	100	130	150	5/_1	500	249	298	348	407	446	485	524	563	602	641	089	721	761	802
	110	25	30	40	9	85	115	135	160	194	232	279	326	382	419	456	493	529	566	603	640	677	714	751
	100	25	25	35	55	75	100	125	145	179	214	258	302	355	389	424	458	492	526	561	595	629	664	869
	90	25	25	30	50	09	75	110	130	164	196	236	277	325	356	388	419	451	482	514	545	577	609	641
	80	25	25	30	36	43	50	83	116	149	184	221	258	295	306	318	329	358	404	449	495	525	555	585
	70	25	25	30	30	34	38	70	102	134	166	198	230	263	280	297	314	340	375	410	445	474	504	533
	09	25	25	25	25	25	25	99	88	119	149	176	203	230	253	276	299	322	346	371	395	424	452	481
	50	25	25	25	25	25	25	46	89	68	114	142	170	198	218	239	260	281	302	324	345	371	398	424
cres)	40	25	25	25	25	25	25	36	48	59	79	108	136	165	184	202	221	239	258	276	295	319	344	368
Size (A	35	25	25	25	25	25	25	32	39	46	65	94	123	153	170	188	206	224	243	261	280	301	321	342
Application Block Size (Acres)	30	25	25	25	25	25	25	30	31	34	50	80	110	140	157	174	191	209	228	246	265	282	299	316
ation I	25	25	25	25	25	25	25	25	30	30	41	64	87	110	129	147	166	182	195	209	223	238	254	270
Applica	20	25	25	25	25	25	25	25	25	25	33	49	49	80	100	120	140	154	163	171	180	194	209	223
15														117	129	140	154	169	183					
																114	129	143						
	6	25	25	25	25	25	25	25	25	25	25	25	25	25	31	36	42	51	62	74	85	66	112	126
	8	25	25	25	25	25	25	25	25	25	25	25	25	25	30	34	38	44	53	19	70	83	96	109
	7	25	25	25	25	25	25	25	25	25	25	25	25	25	30	31	34	38	4	49	55	89	08	93
	9	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	31	34	37	40	52	2	9/
	5	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	36	48	59
	4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	34	42	51
	3	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	31	36	42
	2	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	31	34
	-	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
		45	95	55	09	65	70	75	08	85	06	95	100	105	110	115	120	125	130	135	140	145	150	155
		-			лэА								ddy	/ 1u	/ale	iup	H 1s	рсэ	soa	I				

1124	178	1232	1287	1323	1360	1397	1434	1470	1507	<del>\$</del>	1881	8191	1654	1691	1728	1765	1801	1838	1875	1912	1948
1054	1104	1155	1206	241	1275 1	1310 1	1344	1379	1413 1	448 1	1482	1516	551 1	585	1 0 1	1654	689	723	1758 1	792	1827
983 1	1031	1078 1	1126 1.	1158 1	1190	1222	1255 1	1287	1319	1351	383 1	415 1	1448	1 1 1 1	1512	544	1276	1 809	1641	1673	1705
913 9	957 10	1001	1045	1075 1	105	135 L	165	1195	1225	1255 1	284 1	314 1	344	1374 1	404	1434	1 494	1493	523	553 1	583
843 9	884 9	924 10	965	993 10	1020	1048	1075	1103	1130	158 1	186	213 1	1241	268 13	296 1	1323 14	1351 14	379 1	1406	1434 1:	1461
8 682	8 978	863 9	6 006	926	951 10	977 10	1003	1029	1054	1080	1106	1131 L	1157 12	183 12	209 1	1234 13	1260 13	1286 13	1311 14	1337 1	1363 1
732 7	8 992	801 8	835 9	6 658	883 9	6   206	930 10	954 10	978 10	1002	1026	1050	1074 11	1097	121 12	1145 12	169 12	1193 12	1217 13	1241	1.764
674 7	706	738 8	770 8	792 8	814 8	836 9	828	6 088	902	924 10	946 10	968 10	990 10	1012 10	1034	1056 11	1078 11	1100 11	1122 12	1144 12	1166
5	645 7	675 7.	705 7	725 7	745 8	765 8	785 8	802 8	825 9	846 9	6 998	6 988	6 906	927 10	947 10	967 10	987 10	1007	1027	1047	1067
561 61	587 6	614 6	640 74	658 7.	7 2	695 74	713 7	731 8	750 8	8 89/	8 98/	802 8	823 9	841 9.	859 9	878	6 968	914 10	933 10	951 10	969 10
909	529 58	552 6	575 6	591 6	.9 809	624 6	541 7	657 7.	674 7.	2 069	7 907	723 8	739 8	95/	772 8:	8 82	802 8	821 9	838 9.	854 9.	6 0/8
448 50	469 52		510 57	525   59	936 (6	554 6	9 895	583 65	.9   165	612 6	627 70	641 7.	656 7.	670 75	685 77		714 80	729 82	743 8	758 85	772 87
$\vdash$		6 489						509 58			547 6	559 6	572 6:			669 0			648 74		674 77
389	408	3 426	3 445	5 457	5 470	3 483	9 496		2 521	4 534				585	1 598	3 610	4 623	5 636		9 661	
360	374	388	403	415	426	438	449	461	472	484	495	507	518	530	142	. 553	564	576	587	599	610
330	340	350	360	370	381	391	401	411	422	432	442	453	463	473	483	494	504	514	525	535	545
283	293	303	313	322	331	340	349	358	367	376	385	393	402	411	420	429	438	447	456	465	474
235	245	255	265	273	280	288	295	303	310	318	326	333	341	348	356	363	371	379	386	394	401
194	201	208	215	221	227	233	240	246	252	258	264	270	276	283	289	295	301	307	313	319	326
152	156	161	591	170	174	6/1	184	189	193	861	203	207	212	217	222	226	231	236	240	245	250
135	140	144	149	153	158	162	166	170	175	179	183	187	192	196	200	204	209	213	217	221	225
118	123	128	133	137	141	144	148	152	156	160	163	167	171	175	179	182	186	190	194	198	201
102	107	112	117	120	124	127	131	134	137	140	144	147	150	154	157	160	164	167	171	174	177
85	90	96	101	104	107	110	113	115	118	121	124	127	130	133	136	139	141	144	147	150	153
89	74	79	85	87	90	92	95	97	100	102	104	107	109	112	115	117	119	121	124	126	129
57	61	99	0/	72	74	92	78	08	82	8	98	88	90	92	94	96	86	100	102	104	106
46	49	52	55	57	58	9	61	63	64	99	89	69	71	72	74	75	77	79	80	82	83
36	37	39	40	41	42	43	45	46	47	48	49	50	51	53	32	55	99	57	28	59	61
25	25	25	25	25	25	25	25	25	25	30	30	31	32	33	34	34	35	36	36	22	38
160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265

Broadcast Equivalent Application Rate (lbs Product/Acre)

Table 3. Bed Tarp Buffer Zone Distances in Feet

																							_
	160	45	80	127	193	260	297	333	420	460	500	583	299	700	733	773	813	823	883	913	957	1000	1029
	150	40	75	119	181	244	278	313	394	431	469	547	625	959	889	725	292	800	828	928	897	938	964
	140	35	0/	111	169	228	260	292	368	403	438	510	583	613	642	<i>LL</i> 9	712	747	773	799	837	875	006
	130	30	99	103	157	211	241	271	341	374	406	474	542	995	969	628	199	663	718	742	777	813	836
	120	25	09	95	145	195	223	250	315	345	375	438	200	525	550	580	610	640	693	982	718	750	771
	110	25	51	8/	119	160	193	225	283	310	338	388	438	463	488	528	555	283	613	643	8/9	713	733
	100	25	43	09	86	125	163	200	250	275	300	338	375	400	425	475	009	525	£9 <b>5</b>	009	829	675	694
	06	25	34	43	74	105	143	180	230	256	283	315	348	374	400	438	466	495	523	055	889	625	643
	80	25	25	25	55	85	123	160	210	238	265	293	320	348	375	400	433	465	483	500	538	575	591
	70	25	25	25	40	55	93	130	183	203	223	251	280	300	320	350	379	408	428	448	474	500	514
	09	25	25	25	25	25	63	100	155	168	180	210	240	253	265	300	325	350	373	395	410	425	437
	50	25	25	25	25	25	45	99	135	145	155	188	220	230	240	275	298	320	330	340	360	380	391
(cres)	40	25	25	25	25	25	25	25	65	95	125	143	160	180	200	220	248	275	283	290	310	330	339
Size (4	30 35 25 25 25 26 26 0 26 0 26 0 27 26 0 27 26 0 27 26 0 27 26 0 27 26 0 27 27 27 27 27 27 27 27 27 27 27 27 27 2															295	303						
Block																245	260	267					
ation ]	2														213	230	237						
Application Block Size (Acres																180	185						
4																135	139						
	0															29							
	6	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	41	57	59
	8	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	37	49	20
	7	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	33	41	42
	9	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	29	33	¥
	5	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	3	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	2	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	-	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
		75	08	85	06	95	001	105	110	115	120	125	130	135	40	145	50	25	09	99	170	175	081
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_	9	4	ι		0	6	7	9	4	<u>5</u>	1	9	6	7	9	Ā
1057	1086	1114	1143	1171	1200	1229	1257	1286	1314	1343	1371	1400	1429	1457	1486	1517
991	1018	1045	1071	8601	1125	1152	1179	1205	1232	1259	1286	1313	1339	1366	1393	1/20
925	950	975	1000	1025	1050	1075	1100	1125	1150	1175	1200	1225	1250	1275	1300	1225
859	882	506	929	756	<i>\$</i> 26	866	1001	1045	1068	1601	1114	1138	1911	1184	1207	1230
793	814	988	857	628	006	176	843	196	986	1007	1029	1050	1/01	8601	1114	1136
753	774	794	814	\$35	\$\$8	<i>\$</i> 28	968	916	936	156	776	866	8101	1038	1059	1070
714	733	752	771	791	810	829	849	898	887	906	926	945	964	984	1003	1002
199	629	969	714	732	750	292	98/	804	821	839	857	875	893	911	929	976
809	624	641	657	674	069	902	723	739	756	772	789	805	821	838	854	871
529	543	557	571	586	009	614	679	643	657	671	989	200	714	729	743	757
449	461	474	486	498	510	522	534	546	559	571	583	595	209	619	631	644
402	413	423	434	445	456	467	478	489	499	510	521	532	543	554	595	575
349	358	368	377	387	396	405	415	424	434	443	453	462	471	481	490	200
312	320	329	337	346	354	362	371	379	388	396	405	413	421	430	438	447
275	282	290	297	305	312	319	327	334	342	349	357	364	371	379	386	304
243	250	256	263	269	276	283	289	296	302	309	315	322	329	335	342	348
190	195	201	206	211	216	221	226	231	237	242	247	252	257	262	267	273
143	147	150	154	158	162	166	170	174	177	181	185	189	193	197	201	204
69	71	72	74	9/	78	80	82	84	85	87	89	16	93	62	76	86
09	79	64	65	<i>L</i> 9	89	70	72	73	75	77	78	80	81	83	85	98
52	53	55	56	57	59	09	62	63	64	99	29	69	70	71	73	7.4
43	45	46	47	48	49	50	52	53	54	55	56	57	59	09	19	$\omega$
35	36	37	38	68	40	41	41	42	43	44	45	46	47	84	49	20
25	22	30	30	30	30	30	30	35	35	35	35	35	32	40	40	40
25	25	25	25	90	30	30	30	30	30	30	30	30	30	32	35	35
25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	30	30
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	35
185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	3,45

Table 4. Bed Untarp (both preformed beds and beds listed/disk hilled at the time of application) Buffer Zone Distances in Feet

_																			_	_	_		_			
	160	75	100	197	293	333	373	507	640	753	810	<i>L</i> 98	950	1033	1100	1167	1287	1343	1400	1440	1480	1523	1567	1767	1917	1938 2067
	150	09	94	184	275	313	350	475	009	902	759	813	891	696	1031	1094	1206	1259	1313	1350	1388	1428	1469	1656	1797	1938
	140	50	88	172	257	292	327	443	999	629	709	758	831	904	696	1021	1126	1175	1225	1260	1295	1333	1371	1546	1677	1808
	130	40	81	160	238	271	303	412	520	612	658	704	772	840	894	948	1045	1001	1138	1170	1203	1238	1273	1435	1557	1679
	120	25	75	148	220	250	280	380	480	595	809	059	713	775	825	875	965	1008	1050	1080	1110	1143	1175	1325	1438	1550
	110	25	25	121	193	229	265	349	433	520	999	613	899	723	9//	830	868	928	958	1000	1043	1090	1138	1250	1340	1430
	100	25	25	95	165	208	250	318	385	475	525	575	623	0/9	728	785	830	848	865	920	975	1038	1100	1175	1243	1310
	90	25	25	93	160	198	235	285	335	425	475	525	576	628	629	730	778	799	820	873	925	696	1013	1068	1149	1230
	80	25	25	6	155	188	220	253	285	375	425	475	530	585	630	675	725	750	775	825	875	006	925	960	1055	1150
	70	25	25	65	105	148	190	223	255	325	378	430	481	533	570	809	920	629	708	743	778	815	853	915	974	1033
	09	25	25	40	55	108	160	193	225	275	330	385	433	480	510	540	575	809	640	099	089	730	780	870	893	915
	50	25	25	25	25	88	150	183	215	240	278	315	350	385	418	450	490	533	575	613	650	899	685	775	805	835
(cres	40	25	25	25	25	55	82	120	155	215	240	265	293	320	350	380	435	455	475	513	550	565	580	625	650	675
Application Block Size (Acres)	35	25	25	25	25	43	09	100	140	200	225	250	268	285	318	350	400	418	435	460	485	510	535	575	009	625
3lock	30	25	25	25	25	25	25	63	100	150	183	215	233	250	280	310	350	365	380	415	450	468	485	540	553	595
ation l	25	25	25	25	25	25	25	53	80	125	155	185	203	220	238	255	310	330	350	368	385	405	425	440	463	485
\pplic	20	25	25	25	25	25	25	25	25	95	123	150	168	185	200	215	250	268	285	303	320	335	350	385	393	400
1	15	25	25	25	25	25	25	25	25	45	89	06	115	140	153	165	200	213	225	243	260	273	285	315	328	340
	10	25	25	25	25	25	25	25	25	25	25	25	53	80	86	115	130	145	160	173	185	198	210	225	238	250
	6	25	25	25	25	25	25	25	25	25	25	25	46	99	62	93	104	119	135	149	163	174	185	199	211	224
	8	25	25	25	25	25	25	25	25	25	25	25	39	53	61	70	78	94	110	125	140	150	160	173	185	198
	7	25	25	25	25	25	25	25	25	25	25	25	32	39	43	48	51	89	85	101	118	126	135	146	159	171
	9	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	43	09	78	95	103	110	120	133	145
	5	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	39	53	89	82	88	95	104	115	126
	4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	36	46	59	69	74	80	88	86	107
	3	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	32	39	49	99	59	92	72	80	88
	2	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	32	40	43	45	90	99	63	69
	1	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	30	35	40	45	50
		35	40	45	50	55	09	65	70	75	80	85	06	95	100	105	110	115	120	125	130	135	140	145	150	155

Broadcast Equivalent Application Rate (lbs Product/Acre)

10   10   10   11   11   12   12   13   13   13   13	2150	2233	2267	2300	99	31	76:	63	2629	4	09,	2826	2891	2957	3023	3089	3154	20	3286	51	3417	3483		
18.   1.   1.   1.   1.   1.   1.   1.	16 21		5 22	:6 23	8 23	79 24	11 2497	13 25	34 26	26 2694	38 2760	19 28				90		9 3220		12 3351		55 34		
14   15   15   15   15   15   15   15									) 246														1.	
1.   1.   1.   1.   1.   1.   1.   1.						5 2128	218	224	5 2300	3358	3 2415	5 247.	) 253(			2703		5 2818		3 2933	5 299(	3048	ubitea	نب
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	174			_				2082				229				2509	2563	2616		2723	2776	2830	prol	5 fee
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	1613										2070	2119				2316	2366	2415	2464	2514	2563	2612	ion is	) is 2
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101		1528			1692	1739	1786				1974	2021				2209	2256	2303	2350	2397	2444	2491	olicat	pass
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	1345	1380	1473	1565	1610	1654	1699	1744	1789		1878				2057	2102	2146	2191	2236	2280	2325	2370	e ap	ı one
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	1255	1280	1363	1445	1486	1528	1569	1610	1651	1693	1734	1775	1817	1858	1899			2023	2064	2106	2147	2188	nen th	tion ii
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	1165	1180	1253	1325	1363	1401		1476	1514	1552		1628	1666	1704	1741	1779	1817				1969	2006	et), tl	plicat
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	1056		1164	1248		1319	1354	1390	1426			1533	1568	1604	1640	1675		1747	1782	1818	1853	1889	40 fe	of ap
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	948	086	1075	1170	1203	1237		1304	1337	1371			1471	1504	1538	1571	1605	1638	1671	1705	1738	1772	e (2,6	e time
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	855	875	925	975	1003	1031	1059	1086	1114	1142	1170	1198	1226	1254	1281	1309	1337	1365	1393	1421	1449	1476	/2 mil	at the
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	720	765	778	190	813	835	828	880	903	925	948	971	993	1016	1038	1001	1083	1106	1129	1151	1174	1196	than	cted
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	645	999	208	750	771	793	814	836	857	879	006	921	943	964	986	1007	1029	1050			1114	1136	eater	guio
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	878	590	633	675	694	714	733	752	771	791	810	829	849	898	887	906	926	945	964	984	1003	1022	till gre	and c
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	808	530	555	580	597	613	630	646	699	629	969	713	729	746	762	6/1	795	812	829	845	862	878	ares	hilled
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	418	435	460	485	499	513	527	540	554	995	582	969	610	624	637	651	999	629	693	707	721	734	ances	disk
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	358	375	418	460	473	486	499	513	526	539	552	565	578	591	605	618	631	644	657	0/9	683	269	e dist	listed/
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	268	285	305	325	334	344	353	362	371	381	390	399	409	418	427	436	446	455	464	474	483	492	r zon	spac
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	239	254	274	294	302	311	319	327	336	344	353	361	369	378	386	394	403	411	420	428	436	445	buffe	eds (
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	210	223	243	263	270	278	285	293	300	308	315	323	330	338	345	353	360	368	375	383	390	398	its the	arp B
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	181	191	211	231	238	244	251	258	264	271	278	284	291	297	304	311	317	324	330	337	344	350	credi	i Unt
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	153	160	180	200	206	211	217	223	229	234	240	246	251	257	263	269	274	280	286	291	297	303	cable	actec
55 66 66 67 77 77 77 77 88 88 88 88 88 88 90 90 90 90 90 90 91 91 101 101 101 101	133	140	157	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	appli	Comp
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	114	120	134	150	154	159	163	167	171	176	180	184	189	193	197	201	206	210	214	219	223	227	lying	r for (
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	8	100	111	125	129	132	136	139	143	146	150	154	157	161	164	168	171	175	179	182	186	189	я арр	Buffe
55 66 66 67 77 77 77 77 88 88 88 88 88 90 90 90 90 90 90 90 100 100 100 100 10	75	80	88	100	103	106	109	111	114	117	120	123	126	129	131	134	137	140	143	146	149	151	Ifaffe	
165 170 175 175 188 188 188 199 200 200 215 220 220 220 220 220 220 220 220 220 22	55	09	65	75	77	79	81	84	98	88	90	92	94	96	66	101	103	105	107	109	1111	114		
	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265		

Broadcast Equivalent Application Rate (lbs Product/Acre)

Table 5. Broadcast Tarp Buffer Zone Distances in Feet

					7	7	7	3	0	0	7	9	0	~	7	~	7	(		10	3	2	6	1	3	2	00		
	160	55	73	93	127	167	227	253	280	320	. 367	368	440	473	507	553	587	640	672	715	753	785	819	851	883	915	948	086	666
	150	50	69	88	119	156	213	238	263	300	344	371	413	444	475	519	550	009	630	029	90/	736	292	862	828	828	888	916	937
	140	45	49	82	111	146	198	222	245	280	321	347	385	414	443	484	513	099	288	625	629	687	716	744	773	801	829	828	874
	130	40	09	92	103	135	184	206	228	260	867	322	8SE	385	412	450	477	520	546	189	612	638	599	169	L1L	744	0/_	962	812
	120	35	55	70	95	125	170	190	210	240	275	297	330	355	380	415	440	480	504	536	565	589	614	889	662	989	711	735	749
	110	30	50	70	95	120	160	180	200	230	260	282	310	335	360	390	415	450	474	503	530	554	579	603	627	651	9/9	700	714
	100	30	45	65	88	115	145	165	185	215	241	262	290	315	335	364	385	415	439	465	490	514	539	563	587	611	989	099	674
	06	25	45	65	83	110	130	150	170	195	221	242	268	290	311	335	357	382	404	427	450	474	499	523	547	571	969	620	634
	80	25	43	19	79	76	115	136	158	179	201	222	244	265	286	306	327	348	369	389	410	434	459	483	507	531	929	580	594
	20	25	40	55	70	85	100	120	140	160	180	200	220	240	259	777	296	314	333	351	370	394	417	441	464	488	511	535	549
	09	25	37	49	61	73	85	104	122	141	159	178	196	215	231	248	264	281	297	314	330	353	376	399	421	444	467	490	504
	50	25	32	39	46	53	09	78	95	113	130	148	165	183	198	213	229	244	259	275	290	312	334	355	377	399	421	443	456
cres)	40	25	30	30	31	33	35	51	89	84	101	117	134	150	164	179	193	207	221	236	250	271	291	312	333	354	374	395	409
ize (A	35	25	25	30	30	30	30	45	69	74	68	103	118	133	147	161	175	190	204	218	233	249	265	281	297	313	329	345	359
ock S	30	25	25	25	25	25	25	38	51	64	92	68	102	115	129	144	158	172	981	201	215	226	238	249	261	272	284	295	306
Application Block Size (A cres	25	25	25	25	25	25	25	36	46	57	89	62	68	100	112	124	135	147	159	171	183	194	205	217	228	240	251	263	274
plicat	20	25	25	25	25	25	25	34	42	51	59	89	92	82	94	104	113	122	131	141	150	161	173	184	961	207	219	230	239 2
Α	15	25	25	25	25	25	25	30	34	38	42	46	51	25	64	73	82	91	100	109	118	129	140	151	162	173	184	195	203 2
	10	25	25	25	25	25	25	25	25	25	25	25	25	25	34	42	51	69	1 89	1 9/	85	96	106	117	128	139	149	160	166 2
	6	25	25	25	25	25	25	25	25	25	25	25	25	25	32	36	46	52	65	. 99	73	83	93 1	103	113	123	133	143	149 1
	8	25	25	25	25	25	25	25	25	25	25	25	25	25	30	35	40	46	51	99	, 19	70	08	89 1	98 1	107	117	126 1	132 1
	7	25   2	25 2	25	25	25	25	25	25	25	25	25	25	25	30	32 3	35 2	39 4	42	46	49 (	28	99	75	83	92	100	109	116 1
	9	25 2	25 2	25 2	25 2	25 2	25	25	25	25	25	25	25	25	30 3	30	30	32	34 2	35 4	37 4	45	53 (	. 19	89	92	84 1	92	99 1
	5 (	25 2	25 2	25 2	25 2	25 2	25   2	25   2	25 2	25   2	25 2	25 2	25	25	25 3	25 3	25 3	25 3	25 3	25 3	25 3	32 4	39 5	46 (	54 (	61	89	75 6	82 9
		25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	30 3	36 3	41 4	46 5	52 (	57 (	63	8 89
	4	25 2.	25 2.	25 2.	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2	25 2:	25 2.	25 2.	25 2	25 2	25 2	25 2	30 3	32 3	36 4	39 4	43 5	46 5	9 09	54 6
	(*)									25 2	25 2	25 2		25 2									30 3	30 3	32 3	34 4	36 4	38 5	
	2	5 25	5 25	5 25	5 25	5 25	5 25	5 25	5 25				5 25		5 25	5 25	5 25	5 25	5 25	5 25	5 25	5 30							5 39
	1	25	25	25	25	25	25	25	25	25	, 25	25	52	25	25	25	25	25	25	25	25	25	25	25	5 25	25	5 25	25	25
		20	80	06	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215

Broadcast Application Rate (lbs Product/Acre)

81018	1037	1056	1075	1094	1113	1150	1188	1225	1262	1299	1336	1373	1382	1390	1398	1407	1433	1460	1487	1503	1540	1555	1572	1584	1595	1607
$\vdash$		H	1008	026 10		1079	1113 11	1148 12		1218 12	1253 13	1288 13	1295	1303		1319 14	344 14	369 14	394 14	409 15	1444	1458 15	1474 15	1485 15	1495 15	1506 16
954	972	1 990		П	1044				4 1183				_	1	4 1311			]	_	_			ĺ	ĺ		
891	806	924	941	856	974	1007	1039	1072	1104	1137	911	1202	1209	1216	1224	1231	1254	1278	1301	1315	1348	1360	1376	1386	1395	5 1406
827	843	828	874	688	906	935	596	995	1025	1055	1086	1116	1123	1129	1136	1143	1165	1186	1208	1221	1251	1263	1277	1287	1296	1305
764	778	792	908	821	835	863	891	919	946	974	1002	1030	1036	1043	1049	1055	1075	1095	1115	1127	1155	1166	1179	1188	1196	1205
729	743	757	771	786	800	828	856	884	911	939	296	995	1001	1008	1014	1020	1040	1060	1080	1092	1117	1126	1139	1148	1156	1165
689	703	717	731	746	092	788	816	844	871	668	927	955	961	896	974	086	1000	1020	1040	1052	1077	1086	1094	1053	1111	1120
649	693	212	169	902	720	748	9//	804	831	658	887	915	921	928	934	940	096	086	1000	1012	1027	1036	1044	1053	1061	1070
609	623	637	651	999	089	708	736	764	791	819	847	875	881	888	894	006	920	940	096	696	776	986	994	1003	1011	1020
564	878	592	909	621	635	959	<i>LL</i> 9	869	719	740	761	783	798	814	829	845	862	878	895	906	916	927	938	946	656	026
519	533	547	561	929	969	604	619	633	647	199	9/9	069	715	740	765	062	803	817	830	843	856	698	881	894	907	920
470	484	498	512	526	540	551	563	574	989	597	609	620	642	664	989	80/	718	729	740	752	764	775	787	662	811	823
422	436	449	463	476	490	499	507	516	524	533	541	550	569	588	909	625	633	642	650	199	671	682	693	704	714	725
373	387	401	415	429	443	453	463	474	484	494	505	515	526	538	549	999	573	585	598	809	819	628	889	648	658	899
324	338	352	366	381	395	407	419	431	444	456	468	480	484	488	491	495	512	528	545	554	564	573	582	591	601	610
286	298	310	321	333	345	355	365	375	385	395	405	415	423	430	438	445	460	475	490	498	505	513	520	528	535	543
249	258	267	276	286	295	303	311	319	326	334	342	350	361	373	384	395	408	422	435	441	446	452	458	464	469	475
210	218	225	233	240	248	254	260	266	272	278	284	290	300	310	320	330	341	352	363	367	372	376	381	386	390	395
171	177	183	189	194	200	204	209	213	217	221	226	230	239	248	256	265	273	282	290	294	297	301	304	308	311	315
155	161	167	173	179	185	189	193	197	202	206	210	214	222	230	237	245	253	261	269	273	276	280	284	288	291	295
139	145	151	157	164	170	174	178	182	186	190	194	198	205	212	218	225	233	240	248	252	256	260	263	267	271	275
122	129	135	142	148	155	159	163	167	170	174	178	182	188	194	199	205	212	220	227	231	235	239	243	247	251	255
106	113	119	126	133	140	144	147	151	155	159	162	166	171	176	180	185	192	199	206	210	214	218	223	227	231	235
68	96	104	111	118	125	129	132	136	139	143	146	150	154	158	161	165	172	178	185	189	194	198	202	206	211	215
73	79	84	68	95	100	103	105	108	111	113	116	119	122	124	127	130	136	142	148	151	155	159	163	166	170	174
57	61	49	89	71	75	77	79	80	82	84	98	88	68	91	93	65	100	105	110	113	116	120	123	126	129	133
41	43	45	46	48	90	51	52	53	22	54	55	56	57	28	65	09	64	89	73	75	78	81	83	98	68	91
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	32	35	37	39	41	44	46	48	50
220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350

Broadcast Application Rate (lbs Product/Acre)

Table 6. Broadcast Untarp Buffer Distances in Feet

										_			_					_			_		
	160	70	153	280	440	587	693	780	893	1007	1131	1256	1380	1539	1697	1855	2013	2100	2187	2273	2360	2433	2567
	150	<u>59</u>	144	263	413	550	099	731	838	944	1060	1178	1294	1443	1591	1739	1888	1969	2050	2131	2213	2281	2406
	140	09	134	245	385	513	<i>L</i> 09	883	782	188	686	1099	1208	1346	1485	1623	1762	1838	1913	1989	2065	2129	2246
	130	55	125	228	358	477	563	634	726	818	919	1021	1121	1250	1379	1507	1636	1706	1777	1847	1918	1977	2085
	120	50	115	210	330	440	520	585	0/9	755	848	942	1035	1154	1273	1391	1510	1575	1640	1705	1770	1825	1925
	110	45	105	200	310	405	485	550	630	710	798	887	975	1089	1203	1316	1430	1490	1550	1610	1670	1730	1810
	100	40	95	185	283	370	445	510	585	099	743	827	910	1019	1128	1236	1345	1400	1455	1510	1565	1620	1695
	90	35	85	175	253	335	405	470	540	610	889	767	845	949	1053	1156	1260	1310	1360	1410	1460	1510	1578
	80	25	75	165	233	300	365	430	495	990	633	707	780	879	978	1076	1175	1220	1265	1310	1355	1400	1463
	70	25	63	138	201	265	325	385	448	510	578	647	715	794	873	951	1030	1079	1128	1177	1226	1275	1314
	60	25	50	110	170	230	285	340	400	460	523	587	650	709	768	826	885	938	991	1044	1097	1150	1165
_	50	25	43	80	133	185	238	290	343	395	452	508	565	616	999	717	768	817	867	916	996	1015	1040
Acres	40	25	35	50	95	140	190	240	285	330	380	430	480	523	595	809	650	969	742	788	834	880	915
Block Size (Acres	35	25	30	38	76	115	161	208	253	298	343	389	435	473	510	548	585	628	670	713	755	798	833
Block	30	25	25	25	58	90	133	175	220	265	307	348	390	423	455	488	520	559	598	637	9/9	715	750
pplication	25	25	25	25	41	58	100	143	183	223	263	303	343	366	389	412	435	473	510	548	585	623	651
Applic	20	25	25	25	25	25	89	110	145	180	218	257	295	309	323	336	350	386	422	458	494	530	553
	15	25	25	25	25	25	46	89	95	123	158	194	230	248	265	283	300	325	350	375	400	425	450
	10	25	25	25	25	25	25	25	45	65	86	132	165	186	208	229	250	264	278	292	306	320	348
	9	25	25	25	25	25	25	25	41	57	84	112	139	161	184	206	228	241	254	268	281	294	320
	8	25	25	25	25	25	25	25	37	49	70	92	113	136	160	183	206	218	231	243	256	268	293
	7	25	25	25	25	25	25	25	33	41	56	72	87	111	136	160	184	196	207	219	230	242	265
	9	25	25	25	25	25	25	25	30	33	42	52	19	86	112	137	162	173	184	194	205	216	238
	5	25	25	25	25	25	25	25	25	25	30	32	35	61	88	114	140	150	160	170	180	190	210
	4	25	25	25	25	25	25	25	25	25	30	30	33	52	72	92	111	119	126	134	141	149	164
	3	25	25	25	25	25	25	25	25	25	30	30	30	43	99	69	83	88	93	86	103	108	118
	2	25	25	25	25	25	25	25	25	25	25	30	30	34	41	47	54	56	59	19	29	99	71
	1	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
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140	145	150	155	160	165	170	175	

Table 7. Broadcast Deep (18 inches) Untarp Buffer Zone Distances in Feet

	160	28	681	192	258	324	417	609	265	089	682	162	862	927	286	1047	1167	1259	1325	1361	1456	1251	1615	1680	1768	1855	1943	2044	2145	2232	2320	2365	2412	2484
	150	81	131	180	242	304	391	478	558	889	663	748	808	869	925	186	1094	1180	1243	1304	1365	1426	1514	1575	1658	1739	1821	1916	2011	2093	2175	2218	2261	2329
	140	92	122	168	226	284	365	446	520	595	646	869	754	811	863	916	1021	1101	1160	1217	1274	1331	1413	1470	1547	1623	1700	1789	1877	1953	2030	2070	2111	2174
	130	70	113	156	210	263	339	414	483	553	009	648	700	753	802	850	948	1023	1077	1130	1183	1236	1312	1365	1437	1507	1578	1661	1743	1814	1885	1922	1960	2018 2174
	120	65	105	144	194	243	313	382	446	510	554	869	647	695	740	785	875	944	994	1043	1092	1141	1211	1260	1326	1391	1457	1533	1609	1674	1740	1774	1809	1863
	110	55	92	129	174	218	285	352	411	470	519	899	617	999	710	755	845	606	626	1008	1057	1106	1171	1220	1286	1351	1417	1493	1564	1629	1695	1729	1764	1813
	100	45	80	114	154	193	258	322	381	440	489	538	287	635	089	725	815	874	924	973	1022	1071	1131	1180	1246	1311	1377	1453	1519	1584	1650	1684	1719	
	90	35	29	66	134	168	230	292	351	410	459	808	557	605	650	969	785	839	688	886	286	1036	1091	1140	1206	1271	1337	1413	1474	1539	1605	1639	1674	1713 1763
	80	25	55	84	114	143	203	292	321	380	429	478	526	575	620	999	755	804	854	903	952	1001	1051	1100	1166	1231	1297	1363	1429	1494	1560	1594	1629	1663
	70	25	51	77	103	129	181	233	285	338	384	431	478	525	999	809	069	735	622	824	698	913	856	1003	1061	1120	1178	1237	1295	1354	1413	1452	1491	1530
	99	25	48	70	93	115	160	205	250	295	340	385	430	475	513	920	625	999	705	745	785	825	865	905	926	1008	1059	1111	1162	1214	1265	1309	1354	1398
	20	25	44	63	83	102	140	178	217	255	294	334	373	413	445	478	543	625	615	652	889	725	761	262	841	884	927	026	1014	1057	1100	1139	1179	1218
Acres	9	25	41	57	73	88	120	152	183	215	249	283	316	350	378	405	460	493	526	655	591	624	657	069	725	092	795	830	865	006	935	696	1004	1038
Size (.	35	25	38	51	64	28	104	130	156	183	216	249	282	315	341	368	420	450	481	511	541	572	602	633	664	695	727	758	790	821	853	988	920	953
Block	30	25	35	46	99	29	88	108	129	150	183	215	248	280	305	330	380	408	436	464	491	519	547	575	603	631	629	989	714	742	770	803	836	698
Application Block Size (Acres	25	25	33	40	48	99	71	87	102	118	148	179	209	240	263	285	330	355	379	404	429	453	478	503	527	551	575	009	624	648	673	704	735	767
Appli	20	25	30	35	40	45	55	9	75	85	114	143	171	200	220	240	280	301	323	344	366	387	409	430	451	471	492	513	534	554	575	909	635	999
	15	25	30	30	33	35	40	45	90	25	77	66	121	143	161	179	215	234	253	272	291	310	329	348	365	382	399	416	433	450	468	491	515	538
	10	25	25	25	25	25	25	25	25	25	40	55	70	85	101	118	150	166	183	199	216	232	249	265	279	292	306	319	333	346	360	377	394	411
	6	25	25	25	25	25	25	25	25	25	38	51	63	26	68	102	127	143	160	176	193	209	226	242	255	267	280	293	306	318	331	347	363	379
	8	25	25	25	25	25	25	25	25	25	35	45	55	65	74	84	104	120	137	153	170	186	203	219	231	243	255	266	278	290	302	317	332	347
	7	25	25	25	25	25	25	25	25	25	32	39	46	53	09	29	81	26	114	130	147	163	180	196	207	218	229	240	251	262	273	287	300	314
	9	25	25	25	25	22	25	25	25	25	30	33	37	42	46	09	89	74	16	107	124	140	157	173	183	193	203	214	224	234	244	257	269	282
	5	25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	35	51	89	84	101	117	134	150	159	169	178	187	961	206	215	226	238	249
	4	25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	33	45	23	69	82	64	106	119	126	133	140	147	154	161	168	176	185	193
	3	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	30	38	46	25	63	7.1	62	88	92	26	101	106	111	115	120	126	131	137
	7	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	30	32	36	40	4	48	52	99	59	61	63	99	89	20	73	75	78	81
	-	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
		30	35	40	45	20	55	09	9	20	75	80	82	06	62	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190
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2371	2414	2458	2500	2531	2563	2594	2625	2656	2688	2719	2861	3003	3145	3286	3404	3545	3688	3741	3795	3849	3901	3955	4009	4063	4293	4519	4775	4955	5185	5414	5644	
2213	2253	2294	2333	2363	2392	2421	2450	2479	2508	2538	2671	2802	2935	3067	3177	3309	3442	3492	3542	3592	3641	3691	3742	3792	4006	4218	4457	4625	4839	5053	2568	ited.
2055	2002	2130	2167	2194	2221	2248	2275	2302	2329	2356	2480	2602	2726	2848	2950	3072	3196	3242	3289	3336	3381	3428	3474	3521	3720	3916	4138	4294	4494	4692	4891	rohib
1897	1931	1966	2000	2025	2050	2075	2100	2125	2150	2175	2289	2402	2516	2629	2723	2836	2950	2993	3036	3079	3121		3207	3250	3434	3615	3820	3964	4148	4331	4515	n is p
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1747	1781	1816	1850	1875	1900	1925	1950	1975	2000	2025	2094	2162	2231	2299	2363	2431	2500	2543	2586	2629	2671	2714	2757	2800	2909	3015	3130	3229	3338	3446	3555	hen th
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1570	1609	1648	1688	1721	1755	1788	1822	1855	1889	1923	1962	2002	2041	2081	2121	2160	2200	2243	2286	2329	2371	2414	2457	2500	2559	2619	2678	2737	2796	2856	2915	640 f
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1 294	72 307	319	295 332	307 345	319 358		344 383	968 99	409	422	9 431	7 440	96 449	414 459	423 468	477	440 486	446 493	500	57 507	3 515	9 522	4 529	536	543	3 550	499 557	506 563	512 570	519 577	525 58	plica
202 261	210 272	219 284	228 25	238 30	249 31	260 331	271 34	282 356	293 368	304 380	312 389	320 397	328 406	337 41	345 42	353 431	361 44	366 42	372 451	377 457	382 463	387 469	392 474	398 480	403 486	408 493	413 45	418 50	423 51	429 51	434 52	ing ap
143 20	149 2	154 2	160 22	170 23	179 24	189 20	199 27	208 28	218 29	228 30	235 31	243 32	251 33	259 33	267 34	275 35	283 30	287 36	292 37	296 37	301 38	306 38	310 39	315 39	319 40	323 40	327 4]	331 4	335 42	339 42	343 43	If after applying applicable credits the buffer zone distances are
84 17	87 1.	90 1:	93	101	109	118	126	134 20	143 2	151 22	159 2.	166 2	174 2:	181 2:	189 20	196	204 2:	208 2	212	216 2	220 3	224 30	228 3	233 3	235 3	238 33	241 33	243 3.	246 3.	249 3.	251 3	after
25 8	25 8	25 9	25 9	32 1	39 1	46 1	54 1	61 1.	68 1.	75 1:	82 1:	89	1 96	104	111	118	125 2	129 2	132 2	136 2	139 2	143 2.	146 2.	150 2.	151 2	153 2	154 2	156 2	157 2	159 2	160 2	If
56	200	205	210	215	220	225	230	235 (	240	245	250	255 8	560	265	270 1	275	280	285 1	290	295	300	305 1	310 1	315 1	320 1	325	330 1	335 1	340	345 1	350 1	

Broadcast Application Rate (lbs Product/Acre)

## Restrictions for Difficult to Evacuate Sites

Difficult to evacuate sites are pre-K to grade 12 schools, state licensed daycare centers, nursing homes, assisted living facilities, hospitals, 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 statelicensed 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:

- o The location of the application block.
- Fumigant(s) applied including the active ingredient, name of the fumigant product(s), and the EPA Registration number.
- o 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 <a href="https://www.epa.gov/fumigantstatenotice">www.epa.gov/fumigantstatenotice</a> for a list of states and tribal lead agencies that require notice and information on how to submit the information.

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

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

#### **Emergency Response Plan**

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

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

# Site-Specific Fumigation Management Plan (FMP)

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

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

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

Each site specific FMP must contain the following elements:

- Certified Applicator Supervising the Application
- o Name.
- o Phone number.
- Pesticide applicator license and/or certificate number.
- o Specify if commercial or private applicator,
- o Employer name,
- o 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
  - o Name, address, and phone number of application block owner
  - o 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 nonoccupied)
  - · locations of Buffer Zone signs, and
  - locations of difficult to evacuate sites with distances from the application block labeled.
- General application information
- o Target application date/window,
- o Fumigant Product Name, and
- o EPA registration number.
- Tarp Plan (if tarp is used)
  - o Schedule for checking tarps for damage, tears, and other problems,
  - o Minimum size of damage that will be repaired,
  - o Factors used to determine when tarp repair will be conducted,
  - o Equipment/methods used to perforate tarps,
  - o Target dates for perforating tarps, and
  - o Target dates for removing tarps.
- Soil conditions
  - Description of soil texture and moisture in application block,
  - o Method used to determine soil moisture, and
  - o Soil temperature measurement if air temperatures were above 100° F in any of the 3 days prior to the application.
- Buffer zones
- o Application method,
- o Injection depth,
- o 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

- Symmetry<sup>™</sup> application system
- · Potassium thiosulfate
- · Water seal
- · Organic matter content
- Clay content
- Soil temperature
- o Buffer zone distance, and
- o 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
- o Location of Buffer Zone signs.
- Emergency Preparedness and Response Measures (if applicable)
- o 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).
- o Name and phone number of persons contacted by the certified applicator, and
- o Date contacted.
- Handler (including Certified Applicators)
   Information and PPE
- Names, addresses and phone numbers of handlers
- o Names, addresses, and phone numbers for employers of handlers
- o Tasks that each handler is authorized and trained to perform
- o Date of PPE training for each handler
- o 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/canister type
- SCBAs
  - Respirator make, model, type, style, size
- Other PPE
- For handlers: Confirmation of receipt of Fumigant Safe Handling Information.
- o For certified applicator(s) supervising the application: Completion date and location of the soil fumigant training program listed on the following EPA website <a href="www.epa.gov/fumiganttraining">www.epa.gov/fumiganttraining</a> for the active ingredient(s) in this product.
- o 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/canisters during handler activities, and
  - the employer has confirmed that the appropriate respirator and cartridges/ canisters are immediately available for each handler who will wear one.
- Air monitoring plan
- If sensory irritation is experienced, indicate whether operations will cease or operations will continue with use of an air-purifying respirator
- o For monitoring the breathing zone:
  - Representative handler tasks to be monitored.
  - Monitoring equipment to be used, and
    Timing of the monitoring.
- Good Agricultural Practices (GAPs)
- Identify (e.g., list, attach applicable label section) applicable mandatory GAPs.
- Pesticide Product Labels and Material Safety Data Sheets (MSDS)
- Ensure that labels and MSDS are on-site and readily available for employees to review.

#### **Record-Keeping Procedures**

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

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

- The certified applicator supervising the application has verified that those elements are current and applicable to the application block before it is fumigated.
- Record-keeping requirements are followed for the entire FMP (including elements that do not change). 30

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).
- o Forecast must be checked on the day of, but prior to the start of the application, and on a daily basis during the application if the time period from the start of the application until the application is complete is greater than 24 hours.
- Tarp damage and repair information (if applicable):
- o Date of tarp damage discovery.
- o Location and size of tarp damage,
- o Description of tarp/tarp seal/tarp equipment failure, and
- o Date and time of tarp repair completion.
- Tarp perforation/removal details (if applicable):
- o Date and time tarps were perforated,
- o Date and time tarps were removed, and
- Record if tarps were perforated and/or removed early. Describe the conditions that caused early tarp perforation and/or removal.
- Complaint details (if applicable):
- Person filing complaint (e.g., on-site handler, person off-site),
- o If off-site person, name, address, and phone number of person filing complaint, and
- o Description of control measures or emergency procedures followed after complaint.
- Description of incidents, equipment failure, or other emergency and emergency procedures followed (if applicable).
- Air monitoring results:
  - o When sensory irritation was experienced:
  - Date, time, location, and handler task/activity where irritation was observed and
  - Resulting action (e.g., implement emergency response plan, cease operations, continue operations with air-purifying respirators).

- o When using a direct read detection device:
  - Sample date(s), time(s), location(s), and concentration(s),
  - Handler task/activity monitored (if applicable), and
  - Resulting action (e.g., cease operations, continue operations with air-purifying respirators).
- Fumigant Treated Area and Buffer Zone Signs:
- o Dates of posting and removal.
- Any deviations from the FMP (e.g., changes in emergency response actions, changes in handler information, changes in handlers responsible for completing emergency tasks, changes in communication between certified applicator, owner, and other handlers).

#### Record-Keeping Procedures

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

#### **Spill and Leak Procedures**

Evacuate everyone from the immediate area of the spill or leak. For entry into affected area to correct problems, wear the personal protective equipment specified in the Personal Protective Equipment (PPE) 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. Dispose of contaminated material 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.

#### **Warning Agent**

CHLOROPICRIN 100 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.

CHLOROPICRIN 100 FUMIGANT is compatible when mixed with Chlorinated C<sub>3</sub> Hydrocarbons.