

RESTRICTED USE PESTICIDE

Due to acute toxicity and carcinogenicity.

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.



00004396



Soil Fungicide and Nematicide

A multi-purpose liquid fumigant for preplant treatment of soil to control plant parasitic nematodes, symphylans and to help manage certain soil borne diseases in cropland.

Not for use in greenhouses or other enclosed areas and not for use in drip or other chemigation applications.

Active Ingredients:

1,3-dichloropropene	81.2%
chloropicrin	16.5%
Other Ingredients	2.3%
Total	100.0%

One gallon of Telone C-17 weighs about 10.6 lb at 70°F. Contains 8.6 lb of 1,3-dichloropropene and 1.75 lb of chloropicrin per gallon.

Keep Out of Reach of Children

DANGER PELIGRO

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

Agricultural Use Requirements

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

For additional Precautionary Statements, First Aid, Storage and Disposal and other use information see inside this label.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-12 900-016848 / 00299489

®Trademark of Dow AgroSciences LLC

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268



STORAGE TANK

Check box – or –

Write in EPA Est. No. for producing facility.

☐ EPA Est. No.: 062531-OH-001 Ashtabula, OH

EPA Est. No.: _____

REFILLABLE CONTAINER

Write in EPA Est. No. of repacking or retailer facility.

EPA Est. No.: _____

NET CONTENTS: _____

CUT TO OPEN

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Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER

Hazardous Liquid and Vapor

- **Do not swallow any of this product. May be fatal if swallowed.**
- **Corrosive. Do not get in eyes. Causes irreversible eye damage.**
- **Do not get on skin. May be fatal if absorbed through the skin. Causes skin burns. May cause allergic skin reaction.**
- **Do not breathe vapor. May be fatal if inhaled. May cause lung, liver, and kidney damage and respiratory system irritation upon prolonged contact.**
- **The use of this product may be hazardous to your health. This product contains 1,3-dichloropropene, which has been determined to cause tumors in laboratory animals. Risks can be reduced by exactly following directions for use, precautionary statements, and by wearing the personal protective equipment specified in this labeling.**
- **This product also contains chloropicrin, a strong lachrymator (tear-producing eye irritant), which has the capacity to cause marked eye irritation to the upper respiratory tract. Low concentrations are capable of causing painful eye irritation. The effect may be so powerful that a person may become temporarily blinded and panic-stricken. That, in turn, may lead to accidents.**

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. For more options, follow the instructions for Category H on the chemical resistance category selection chart. PPE constructed of saranex, neoprene, and chlorinated polyethylene provide short-term contact or splash protection against liquid in this product. Longer-term protection is provided by PPE constructed of viton, Teflon, and EVAL barrier laminates (for example, responder suits manufactured by Life-guard or silvershield gloves manufactured by North). Where chemical-resistant materials are required, leather, canvas, or cotton materials offer no protection from this product and must not be worn as the sole article of protection when contact with this product is possible. Where coveralls are required, they must be loose-fitting and constructed of woven fabrics (e.g., tight knit cotton or cotton/polyester), non-woven fabrics (e.g., tyvek or sontara), or fabrics containing microporous Teflon.

When not performing tasks with liquid contact potential, all handlers (including applicators) must wear:

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

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

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant apron
- Protective eyewear (**do not** wear goggles)
- Chemical-resistant footwear and socks

The PPE required when handling liquid must be immediately available and must be worn if the handler is to perform any handling activity with a potential for liquid contact.

1. All handlers (including applicators) must wear a half-face air-purifying respirator (except when handlers are in enclosed cabs or applying the fumigant with equipment that disrupts the chisel trace and seals the soil at the same time, e.g., Yetter applicator) with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (NIOSH approval number prefix TC-23C) or canister approved for pesticides (NIOSH approval number prefix TC-14G). See further respirator requirements in the Directions for Use, Protection for Handlers section on this label.

If sensory irritation (tearing, burning of the eyes or nose) is experienced and handlers remain in the application block, handlers must wear at a minimum either:

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

See Directions for Use, Protection for Handlers, Respiratory Protection and Stop Work Triggers, number 1, Handlers Wearing Half-Face Air-Purifying Respirators for when a full-face respirator is required.

Important: A self-contained breathing apparatus (SCBA) is not permitted for routine handler tasks. Such respirators are only permitted in emergencies such as a spill or leak or when corrective action is needed to reduce air levels to acceptable levels.

2. Handlers using enclosed cabs are not required to wear respiratory protection (**not applicable in California**) provided that the cab has been maintained according to the manufacturer's written operating instructions **and** there is written documentation that the ventilation system has been maintained according to the manufacturer's instructions **and** the enclosed cab is in conformance with the following requirements:

- the enclosed cab must be positive pressure - 6 mm H₂O gauge
- the enclosed cab must have a minimum air intake flow of 43 m³/hour.
- the enclosed cab must be equipped with activated charcoal filter media containing no less than 1000 grams of activated charcoal.
- the filter must be changed after no more than 50 hours of application time.

Conformance with these requirements must be documented in the Fumigant Management Plan (FMP).

See Directions for Use, Protection for Handlers, Respiratory Protection and Stop Work Triggers, number 2, Handlers in Enclosed Cabs for stop work procedures

3. Handlers applying the fumigant with equipment that disrupts the chisel trace and seals the soil with one implement, e.g., Yetter applicator (**not applicable in California**) are not required to wear respiratory unless sensory irritation is experienced.

If sensory irritation (tearing, burning of the eyes or nose) is experienced and handlers remain in the application block, handlers must wear at a minimum either:

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

See Directions for Use, Protection for Handlers, Respiratory Protection and Stop Work Triggers, number 3, Handlers Applying the Fumigant with Equipment That Disrupts the Chisel Trace and Seals the Soil with One Implement, e.g., a Yetter applicator (**not applicable in California**) for when a full-face respirator is required.

4. Handlers exposed to high airborne concentrations of this product, e.g., emergencies such as a spill or leak or when corrective action is needed to reduce air levels to acceptable levels, and exposure to this product in poorly ventilated areas, must wear at a minimum:
- Chemical-resistant suit
 - Chemical-resistant gloves such as barrier laminate (EVAL) or viton

- Chemical-resistant footwear plus socks
- Chemical-resistant headgear
- A self-contained breathing apparatus (SCBA) with NIOSH approval number prefix TC-13F. See further respirator requirements in the Protection for Handlers section on this label.

Note: In-tank cleaning of bulk tanks must be performed only by persons who have been specifically trained for this activity. Refer to OSHA 29 CFR Part 1910.146.

User Safety Requirements

1. **Never fumigate alone:** It is imperative to always have an assistant and proper protective equipment in case of accidents.
2. **Driver's Responsibilities:** 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 safely work with the tractor and driver while fumigating.
3. **Dispose of Contaminated Clothing:** Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.
4. **Clean and Maintain PPE:** 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.
5. **Contact With Mouth:** Never siphon this product by mouth or use mouth to blow out clogged lines, nozzles, etc.
6. **Heat Illness Avoidance:** Use measures to avoid or minimize heat illness while using this product. These measures include gradual adjustment to heat and respirator stress, fans for cooling, cooling vests, frequent breaks to cool down, frequent intake of drinking water, and maintaining weight from day to day.

User Safety Recommendations

Users should:

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

First Aid

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If on skin or clothing: Immediately flush skin with plenty of water for at least 15-20 minutes while removing contaminated clothing and shoes. If water is not immediately available, remove excess chemical from skin with sorbent material such as towel or dry soil, then proceed at once to location where water is available and thoroughly wash contaminated skin with plenty of water. Call a poison control center or doctor for treatment advice.

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

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to physician: Because rapid absorption may occur through lungs if product is aspirated and cause systemic effects, the decision to induce vomiting or not should be made by a physician. If lavage is performed, endotracheal and/or esophageal control is suggested. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

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.

Groundwater advisory: 1,3-dichloropropene is known to move through soil and under certain conditions has the potential to reach groundwater as a result of agricultural use. Application in areas where soils are permeable and groundwater is near the surface could result in groundwater contamination.

Physical or Chemical Hazards

Combustible. Do not use or store near heat or open flame.

Directions for Use

Restricted Use Pesticide

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 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. It also contains specific instructions and exceptions pertaining to the statements in this labeling about personal protective equipment (PPE), restricted entry intervals, and notification to workers. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS). No instructions elsewhere on the labeling relieve users from complying with the requirements of WPS. For the entry restricted period and notification requirements, see the Entry Restricted Period and Notification section of this label.

PPE for Entry During the Entry Restricted Period: PPE for entry that is permitted by this labeling is listed in the Hazards to Humans and Domestic Animals section of this labeling.

Storage and Disposal

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

Pesticide Storage: Store in tightly-closed original container away from dwellings. Prolonged exposure of container to direct sunlight must be avoided. Do not allow contamination of seeds, plants, fertilizers, or other pesticide chemicals.

Storage and Disposal (Cont.)

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide and rinsates 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.

Because Telone C-17 is corrosive under certain conditions, flush all application equipment with fuel oil, kerosene or a similar type of petroleum solvent immediately after use. Fill pumps and meters with new motor oil or a 50% motor oil/fuel oil mixture before storing. **Do not use water.** Dispose of rinsate by applicable Federal, state and local regulations. Never introduce rinsate or unused Telone C-17 into surface or underground water supplies.

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

General Information

Before using this product, carefully read and follow all label precautions and directions.

Telone C-17 is a multi-purpose liquid fumigant for preplant treatment of cropland soil that can be used as part of a nematode and disease management program involving crop rotation, planting resistant varieties, sanitation, and other cultural practices designed to reduce nematode and disease pressure.

Telone C-17 may be applied as a preplant soil treatment as part of a management program to aid in reducing the damaging effects of certain soil borne diseases [soil rot (soil pox) of sweet potatoes; granville (bacterial) wilt, black root rot, black shank diseases of tobacco; verticillium wilt of strawberries, cole crops and mint, pink root of onions, and fusarium crown and root rot of tomatoes]. This is not a complete list of crops and soil borne diseases. Consult your crop advisor for recommendations on specific soil borne diseases.

Telone C-17 must not be used to control diseases in the plastic culture vegetable and fruit market.

Telone C-17 may be applied as a preplant soil treatment as part of a management program to control and aid in reducing the damaging effects of certain soil pests; plant parasitic nematodes (root-knot, root lesion, citrus, cyst formers, golden, sugarbeet, soybean, burrowing, lance, reniform, ring, spiral, sting, pin, stubby root, dagger, and certain others), phylloxera (garden centipedes) and wireworms.

Before fumigation, soil sampling for the type and number of pests present is recommended. In fields where pre-treatment soil samples indicate the presence of high population levels of nematodes, a successful fumigation cannot be expected to eradicate entire populations. Therefore, post-treatment (mid-season and/or preharvest) sampling is recommended to determine the need for additional pest management practices.

Consult State Agricultural Experiment Station or Extension Service specialists for information on other practices such as post-harvest destruction of crop residues, weed control or other cultural practices, and use of nematode resistant crop varieties that may aid in reducing crop losses from soil borne pests.

General Use Precautions

Soil fumigation using Telone C-17 must be conducted only according to directions and conditions of use.

Chemigation

Do not apply Telone C-17 through any type of irrigation system.

Do not formulate and/or tank mix this product into other end-use agricultural products.

Use Restrictions

Do not apply within 100 feet of any well used for potable water. Do not apply this product within 100 feet from the edge of karst topographical features. Karst topography is identified from landscape features that result from the dissolving activity of water in carbonate rock formations (limestone, dolomite and marble). Surface features that are associated with karst topography include sinkholes, caverns, springs, and sinking or disappearing streams. In North Dakota, South Dakota, Wisconsin, Minnesota, New York, Maine, New Hampshire, Vermont, Massachusetts, Utah, and Montana: Where groundwater aquifers exist at a depth of 50 feet or less from the surface, do not apply this product where soils are Hydrologic Group A.

Use Restrictions for Certain Florida Counties
For application of this product in Brevard, Charlotte, Citrus, Collier, DeSoto, Glades, Hardee, Hendry, Hernando, Highlands,

Hillsborough, Indian River, Lake, Lee, Manatee, Martin, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Sarasota, Seminole, St. Lucie, Sumter, and Volusia counties, applicators must have labeling for FIFRA Section 24(c) Special Local Need (SLN) FL-990004 in their possession and comply with stated requirements. Use of Telone C-17 is prohibited in Broward and Dade counties.

Use Restrictions for Certain New York Counties
This product is prohibited from sale, use or distribution in Nassau and Suffolk counties.

Fumigation Handlers

The following activities are prohibited from being performed in the application block (i.e., the field or portion of a field treated with a fumigant in any 24-hour period) by anyone other than persons who have been appropriately trained and equipped as handlers in accordance with the requirements in the Worker Protection Standard (40 CFR Part 170), from the start of the application until the entry restricted period ends. **(Note:** Persons installing, perforating, removing, repairing, and monitoring tarps are considered handlers for the durations listed below.) Those activities include those persons:

- Participating in the application as supervisors, loaders, drivers, tractor co-pilots, shovelers, cross ditchers, or as other direct application participants (the application starts when the fumigant is first introduced into the soil and ends after the fumigant has stopped being delivered/dispensed to the soil).
- Using devices to take air samples to monitor fumigant air concentrations.
- Cleaning up fumigant spills (this does not include emergency personnel not associated with the fumigation application).
- Handling or disposing of fumigant containers.
- Cleaning, handling, adjusting, or repairing the parts of fumigation equipment that may contain fumigant residues.
- Installing, repairing, operating or removing irrigation equipment in the fumigant application block.
- Entering the application site to perform scouting, crop advising, or monitoring tasks.
- Installing, perforating (cutting, punching, slicing, poking), removing, repairing or monitoring tarps:
 - o until 14 days after application is complete if tarps are not perforated and removed during those 14 days or
 - o until tarp removal is complete if tarps are both perforated and removed less than 14 days after application or
 - o until 48 hours after tarp perforation is complete if they will not be removed within 14 days after application. **Note:** See Tarp Perforation

and/or Removal section on this labeling for requirements about when tarps are allowed to be perforated.

- Performing any handling tasks as defined by the WPS.

Recontamination Prevention

Telone C-17 will help manage certain soil borne pests that are present in the soil treatment zone at time of fumigation. It will not control pests that are introduced into soil after fumigation. To avoid reinfestation of treated soil do not use irrigation water, transplants, seed pieces, or equipment that could carry soil borne pests from infested land. Avoid contamination from moving infested soil onto treated beds through cultivation, movement of soil from below the treated zone, dumping contaminated soil in treated fields and soil contamination from equipment or crop remains. Clean equipment carefully before entering treated fields. Cultural practices, which provide post-harvest destruction of crop residues and weeds prior to fumigation and practices which prevent weed infestation following fumigation and prior to planting, will help prevent recontamination.

Equipment Clean-Up

Because Telone C-17 is corrosive under certain conditions, flush all application equipment with fuel oil, kerosene or a similar type of petroleum solvent immediately after use. Fill pumps and meters with new motor oil or a 50% motor oil/fuel oil mixture before storing. **Do not use water.** Dispose of rinsate by incorporation into field just treated or by other approved means. Never introduce rinsate or unused Telone C-17 into surface or underground water supplies.

Fertility Interactions

Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when high rates of fertilizer and fumigant are applied to soils that are either cold, wet, acidic, or high in organic matter. To avoid injury to certain crops including red beets, carrots, corn, radishes, cole crops, legumes (beans), lettuce, onions, and sugarbeets, fertilize when possible as indicated by soil tests made after fumigation. To avoid ammonia injury or nitrate starvation (or both) to crops grown on high organic soils, do not use fertilizers containing ammonium salts.

When using high rates of Telone C-17 as required by certain state nursery regulations, liming of highly acid soils before fumigation may stimulate nitrification and reduce the possibility of ammonia toxicity. Certain nursery crops such as citrus seedlings, *Cornus* sp., *Crataegus* sp., spruce, and vegetable crops such as cauliflower have shown evidence of phosphorus deficiency following fumigation. To avoid this possible effect, additional phosphate fertilizer (foliar applied) is recommended where experience indicates a deficiency may occur.

Protection for Handlers

Respiratory Protection and Stop Work Triggers

1. Handlers Wearing Half-Face Air-Purifying Respirators

The following procedures must be followed to determine whether a full-face air-purifying respirator is required or if operations must cease for handlers wearing a half-face air-purifying respirator:

- If at any time any handler experiences sensory irritation (tearing, burning of the eyes or nose) while wearing a half-face respirator:
 - o a full-face air-purifying respirator must be worn by all handlers who remain in the application block **or**
 - o operations must cease and handlers not wearing full-face air-purifying respirators must leave the application block.
- When full-face air-purifying respirators are worn, then air monitoring samples for chloropicrin must be collected at least every two hours in the breathing zone of a handler performing a representative handling task.
- When using monitoring devices to monitor air concentration levels, a direct reading detection device, such as a Matheson-Kitagawa, Dräger, or Sensidyne device must be used. The devices must have a sensitivity of at least 0.15 ppm for chloropicrin.
- When breathing zone samples are required, they must be taken outside respiratory protection equipment and within a 10-inch radius of the handler's nose and mouth.
- If at any time (1) a handler experiences any sensory irritation when wearing a full-face air-purifying respirator; or (2) an air sample is greater than or equal to 1.5 ppm, then all handler activities must cease and handlers must be removed from the application block. If operations cease, the emergency plan detailed in the FMP must be implemented.
- Handlers can remove full-face air-purifying respirators or resume work if all of the following conditions exist provided that a half-face air-purifying respirator is worn:
 - o two consecutive breathing zone samples for chloropicrin taken at the handling site at least 15 minutes apart must be less than 0.15 ppm
 - o handlers do not experience sensory irritation, and
 - o air-purifying respirator cartridges have been changed
- During the collection of air samples a full-face air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the sensory irritation is first experienced

2. Handlers in Enclosed Cabs (Not Applicable in California)

- If at any time a handler experiences any sensory irritation (tearing, burning of the eyes or nose) while in the enclosed cab, operations must cease and handlers must leave the application block.
- Operations may resume in the enclosed cab provided that:
 - o two consecutive breathing zone samples for chloropicrin taken at the handling site at least 15 minutes apart must be less than 1.5 ppm,
 - o handlers do not experience sensory irritation, and
 - o the filter has been changed.
- During the collection of air samples, a full-face air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the sensory irritation is first experienced.

3. Handlers Applying the Fumigant with Equipment That Disrupts the Chisel Trace and Seals the Soil with One Implement, e.g., a Yetter Applicator (Not Applicable in California)

The following procedures must be followed to determine whether a full-face air-purifying respirator is required or if operations must cease for handlers applying the fumigant with equipment that disrupts the chisel trace and seals the soil with one implement, e.g., a Yetter applicator.

- If at any time any handler experiences sensory irritation (tearing, burning of the eyes or nose) then either:
 - o a full-face air-purifying respirator must be worn by all handlers who remain in the application block **or**
 - o operations must cease and handlers not wearing respiratory protection must leave the application block
- Handlers can remove full-face air-purifying respirators or resume operations if two consecutive breathing zone samples taken at the handling site at least 15 minutes apart show that levels of chloropicrin have decreased to less than 0.15 ppm provided that handlers do not experience sensory irritation. During the collection of air samples, a full-face air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the sensory irritation is first experienced.
- When using monitoring devices to monitor air concentration levels, a direct reading detection device, such as a Matheson-Kitagawa, Dräger, or Sensidyne device, must be used. The devices must have a sensitivity of at least 0.15 ppm for chloropicrin.

- When breathing zone samples are required, they must be taken outside of the respiratory protection equipment and within a 10-inch radius of the handler's nose and mouth.
- When full-face air-purifying respirators are worn, then air monitoring samples must be collected at least every two hours in the breathing zone of a handler performing a representative handling risk.
- If at any time: (1) a handler experiences any sensory irritation when wearing a full-face air-purifying respirator, or (2) an air sample is greater than or equal to 1.5 ppm, then all handler activities must cease and handlers must be removed from the application block. If operations cease, the emergency plan detailed in the FMP must be implemented.
- Handlers can resume work activities without full-face air-purifying respirators if two consecutive breathing zone samples taken at the handling site at least 15 minutes apart show levels of chloropicrin have decreased to less than 0.15 ppm, provided that handlers do not experience sensory irritation. During the collection of air samples a full-face air purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the sensory irritation is first experienced.
- Handlers can resume work activities if all of the following conditions exist provided that a full-face air-purifying respirator is worn:
 - o two consecutive breathing zone samples for chloropicrin taken at the handling site at least 15 minutes apart must be less than 1.5 ppm but are greater than 0.15 ppm
 - o handlers do not experience sensory irritation while wearing the air-purifying respirator, and
 - o air-purifying respirator cartridges have been changed
- During the collection of air samples, a full-face air-purifying respirator must be worn by the handler taking the air samples. Samples must be taken where the sensory irritation is first experienced.

Supervision of Handlers

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

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

understood to the site owner/operator and handlers responsible for carrying out those activities the information necessary to comply with the label and procedures described in the FMP (e.g., emergency response plans and procedures). Communication activities must be captured in the FMP.

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

The certified applicator must provide **Fumigant Safe Handling** information to each handler involved in the application or confirm that each handler participating in the application has received **Fumigant Safe Handling** information in a manner they can understand within the past 12 months.

Fumigant Safe Handling information will be provided where this product is purchased or at <http://www.epa.gov/fumigantraining>.

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

Exclusion of Non-Handlers From Application Block

The certified applicator supervising the application and the owner/operator of the establishment where the fumigation is taking place must make sure that all persons who are not trained and PPE equipped and who are not performing one of the handling tasks as stated in this label are excluded from the application block during the entry-restricted period.

Providing, Cleaning, and Maintaining PPE

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

Air-Purifying Respirator Availability

The employer of any handler must confirm that an air-purifying respirator and appropriate cartridges of the type specified in the PPE section of this label are immediately available for each handler who will wear one. These handlers must be fit-tested, trained, and medically examined. This must be documented in the FMP. Cartridges or canisters must be replaced when odor or irritation from this product becomes apparent, if the measured concentration of chloropicrin is greater than 1.5 ppm, or after 8 hours of use, whichever occurs first.

Availability of Respirators for Emergencies

The employer of any handler must confirm that at least one self-contained breathing apparatus (SCBA) is on site and is ready for use in case of an emergency. This must be documented in the FMP.

Respirator Fit Testing, Medical Qualification and Training

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

- Fit tested and fit checked using a program that conforms to OSHA's requirements (see 29 CFR Part 1910.134).
- Trained using a program that conforms to OSHA's requirements (see 29 CFR Part 1910.134).
- Examined by a qualified medical practitioner to ensure physical ability to safely wear the style of respirator to be worn. A qualified medical practitioner is a physician or other licensed health care professional who will evaluate the ability of a worker to wear a respirator. The initial evaluation consists of a questionnaire that asks about medical conditions (such as a heart condition) that would be problematic for respirator use. If concerns are identified, then additional evaluations, such as a physical exam, might be necessary. The initial evaluation must be done before respirator use begins. Handlers must be reexamined by a qualified medical practitioner if their health status, 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.

Application Requirements

Tarp Perforation and/or Removal

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

Tarps must not be perforated until a minimum of five days (120 hours) have elapsed after the fumigant injection into the soil is complete (e.g., after injection of the fumigant product and tarps have been laid) unless a weather condition exists which necessitates the need for early perforation or removal. See Early Tarp Removal for Broadcast Applications Only and Early Tarp Perforation for Flood Prevention Activities sections.

If tarps will be removed before planting, tarp removal must not begin until at least two hours after tarp perforation is complete. If tarps will not be removed before planting, planting or transplanting must not begin until at least 48 hours after the tarp perforation is complete. If tarps are left intact for a minimum of 14 days after fumigant injection into the soil is complete, planting or transplanting may take place while the tarps are being perforated. Each tarp panel used for broadcast fumigation must be perforated.

Tarps used for fumigations may be perforated manually **only** for the following situations:

- At the beginning of each row when a coulter blade (or other device which performs similarly) is used on a motorized vehicle such as an ATV.
- In fields that are 1 acre or less.
- During flood prevention activities.

In all other instances, tarps must be perforated (cut, punched, poked, or sliced) only by mechanical methods. Tarp perforation for broadcast fumigations must be completed before noon. For broadcast fumigations, tarps must not be perforated if rainfall is expected within 12 hours.

Early Tarp Removal for Broadcast Applications Only

Tarps may be removed before the required five 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 of the field and create a hazard, e.g., tarps blowing into power lines and onto roads. A compromised tarp is a tarp that, due to an adverse weather condition, is no longer performing its intended function and is creating a hazard.

If tarps are removed before the required five days have elapsed due to adverse weather, the events must be documented in the post-application summary.

Early Tarp Perforation for Flood Prevention Activities

Early tarp perforation is allowed before the five days (120 hours) have elapsed for flood prevention. Tarps must be immediately retucked and packed after soil removal.

Mandatory Good Agricultural Practices (GAPs)

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

Application Timing

Apply Telone C-17 at any time of the year when soil conditions permit. Conditions that allow rapid diffusion of the fumigant as a gas through the soil normally give the best results. Because Telone C-17 does not provide residual control of soil pests, use it as a preplant application before planting each crop.

Tarps

When tarps are used in applications of Telone C-17, a written tarp plan must be developed and included in the FMP. The plan must include:

- Schedule and procedures for checking tarps for damage, tears, and other problems.
- Plans for determining when and how repairs to tarps will be made, and by whom.

- Minimum time following injection that tarp will be repaired.
- Minimum size of tarp damage that will be repaired.
- Other factors used to determine how and when tarp repair will be conducted.
- Schedule, equipment and methods used to perforate tarps.
- Aeration plans and procedures following perforation of tarp, but prior to tarp removal or planting/transplanting.
- Schedule, equipment, and procedures for tarp removal.

Weather Conditions

Prior to fumigation, the weather forecast for the day of the application and the 48-hour period following the fumigation must be checked to determine if unfavorable weather conditions exist (see Identifying Unfavorable Weather Conditions section) or are predicted and whether fumigation should begin.

Wind speed at the application site must be a minimum of 2 mph at the start of the application or forecasted to reach at least 5 mph during the application.

Do not apply if a shallow, compressed (low-level) temperature inversion is forecast to persist for more than 18 consecutive hours for the 48-hour period after the start of application, or if there is an air stagnation advisory issued by the National Weather Service in effect for the area in which the fumigation is planned. Detailed local forecasts for weather conditions, wind speed, and air stagnation advisories may be obtained on-line at <http://www.nws.noaa.gov>, or by contacting your local National Weather Service Forecasting Office.

Identifying Unfavorable Weather Conditions:

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

Soil Preparation

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

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

Soil Sealing

Broadcast Untarped Applications: Use a disc or similar equipment to uniformly mix the soil to at least a depth of 4 to 6 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. When using equipment similar to the Yetter applicator (chisel trace disruption and soil sealing are done with one implement), additional tillage and compaction are not required.

Bedded Applications: Preformed beds must be sealed by disruption of the chisel trace using press sealers, bed shapers, cultipackers, or by reshaping (e.g., relisting, lifting and 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. When bedding, prebedders such as ripper hipers, hillers, or other prebedders may be used to disrupt the chisel trace and seal the soil. When using equipment similar to the Yetter applicator (chisel trace disruption and soil sealing are done with one implement), additional tillage and compaction are not required. Beds may be formed following the Yetter-type applicator in a normal interval consistent to area production practices.

Tarped Applications: The use of a tarp does not eliminate the need to minimize chisel traces prior to application of the tarp, such as by using a Nobel plow or other injection shank that disrupts the chisel traces. When bedding, prebedders such as ripper hipers, hillers, or other prebedders may be used to disrupt the chisel trace and seal the soil. When using equipment similar to the Yetter applicator (chisel trace disruption and soil sealing are done with one implement), additional tillage and compaction are not required. Beds may be formed following the Yetter-type applicator in a normal interval consistent to area production practices.

Telone C-17 Bedded and Broadcast Shank Applications – Additional GAPS

In addition to the GAPS required for all soil fumigation applications with Telone C-17, the following GAPS apply for injection applications.

Tarps: When tarps are used in applications of Telone C-17, they must be installed immediately after the fumigant is applied to the soil.

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

Soil Temperature: The minimum soil temperature at the depth of injection is 40°F. The maximum soil temperature at the depth of injection must not exceed 90°F at the beginning of the application. If air temperatures have been above 100°F in any of the three days prior to application, then soil temperature must be measured and recorded in the FMP.

Soil Moisture: The soil must be moist 9 inches below the surface. The amount of moisture needed will vary according to the soil type. Surface soil generally dries rapidly and must not be considered in this determination. Soil moisture must be determined by one of the following methods: (1) The USDA Feel and Appearance Method for testing; or (2) an instrument, such as a tensiometer. If there is insufficient moisture 9 inches below the surface, the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below 9 inches, soil moisture can be adjusted by discing or plowing before fumigant injection. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as close to the time of application as possible. Measure soil moisture at a depth of 9 inches at either end of the field no more than 48 hours prior to application.

Soil Moisture Determination Using the USDA Feel and Appearance Method:

- For **coarse** textured soils (fine sand and loamy fine sand), there must be enough moisture (50 to 75% available soil water moisture) so that the soil is moist, forms a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers and will not ribbon.
- For **moderately coarse** textured soils (sandy loam and fine sandy loam), there must be enough moisture (50 to 75% available soil water moisture) so that the soil is moist, forms a ball with defined finger marks, very light soil/water staining on fingers, and darkened color will not stick.
- For **medium** textured soils (sandy clay loam, loam, and silt loam), there must be enough moisture (50 to 75% available soil water moisture) so that the soil is moist, forms a ball, very light staining on fingers, darkened color, pliable, and forms a weak ribbon between the thumb and forefinger.
- For **fine** textured soils (clay, clay loam, and silty clay loam), there must be enough moisture (50 to 75% available soil water moisture) so that the soil

is moist, forms a smooth ball with defined finger marks, light soil/water staining on fingers, and ribbons between thumb and forefinger.

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

Application Depth

Tarped Broadcast Applications: The injection point must be a minimum of 8 inches from the nearest final soil/air interface.

Tarped and Untarped Bedded Applications: The injection point must be a minimum of 12 inches from the nearest final soil/air interface.

Untarped Broadcast Applications: The injection point must be a minimum of 12 inches from the nearest final soil/air interface. When using the Nobel plow for untarped broadcast applications, the injection point must be a minimum of 15 inches from the nearest final soil/air interface.

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

Application Methods and Equipment

Broadcast Applications: Use chisel (shank) or coulter (e.g., Yetter 30-inch Avenger), offset wing shank, Nobel (sweep) plow, or plow-sole application equipment. For best results when using chisel equipment, use ripper-type, forward-swept shanks. Nobel plow equipment is particularly useful for fall fumigation when the soil still contains some standing undecomposed plant material. Subsoiling may be necessary before application. Choose application equipment that allows the deepest application and best soil seal under existing conditions.

The fumigant outlet spacing varies with the type of application equipment used.

With chisel and coulter equipment, a fumigant shank spacing of 12 to 24 inches is recommended. Do not exceed the maximum shank and outlet spacing of 24 inches. The outlet spacing for this equipment may be up to 1 1/2 times the application

depth but generally should be equal to the application depth and should not exceed the soil-shattering capability of the chisels.

With plow-sole equipment, a 12-inch outlet spacing is recommended. Do not exceed an outlet spacing of 18 inches.

With Nobel (sweep) plow equipment, use an outlet spacing of 9 to 12 inches along the sweeps.

Broadcast application can be made in the same direction or at an angle to the direction of row planting.

Refer to Table 1 for broadcast treatment rates for various crops.

Bedded Applications (for Row Spacing Greater Than 24 Inches): Use chisel equipment to treat a band of soil where the crop is to be planted, i.e., the plant row. When multiple chisels per plant row are used, space the chisels (fumigant outlets) no more than 12 inches apart.

With certain deeper rooted crops such as potatoes and sugarbeets, higher flow rates may be necessary to ensure adequate treatment of the zone of soil where primary root growth occurs.

To prevent seed germination problems caused by improper seed-to-soil contact or improper planting depth, do not place the seed directly over the furrow left by the applicator chisel(s). When one chisel is used per plant row, place the seed about 4 inches to one side of the chisel furrow. When two chisels are used per plant row, plant the seed offset from the chisel trace.

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.

The dispensing system must shut off the feed stream when chisels are raised out of the ground. Do not stop or park near any area where dribble from chisel tips has fallen.

- A flow shutoff device must be placed as close as is technically feasible to the fluid discharge point. This can be a ball, poppet, or diaphragm check valve, or full flow shutoff device such as an electric or pneumatically actuated valve.
- Service any system immediately if continuous drip occurs.
- If mechanical check valves and orifices are used, place the check valve above the orifice. Also, isolate the check valve from upstream pressure

by installing a main line shut off or bypass valve prior to the manifold.

- Pipe diameter from check valve to injection point must not exceed 1/4 inches ID National Pipe Standard (NPS). Preferably, use the smallest diameter pipe or tubing possible which achieves the required flow rate.
- Alternative end-row spillage devices or methods, such as, but not limited to, micro-bore restricted flow tubing or line purge systems may be used if they provide equal or superior control versus check valves.

Calibration, Set Up, Repair and Maintenance for Application Rigs

Compatible Materials:

- Copper, stainless steel, stainless steel braided hose, steel, brass, Kynar, Kalrez, Chemraz, Santoprene, Hasteloy, Monel, polypropylene, polyethylene, nylon, Teflon, rigid PVC and viton (F/G best).
- Do not expose rigid PVC to undiluted Telone C-17 or more than 1500 ppm of Telone C-17 in the diluted form.

The following materials must **not** be used with Telone C-17:

- Do not use containers, pumps, or other transfer equipment made of aluminum, magnesium, zinc (including galvanized), cadmium, tin and alloys, or vinyl as under certain conditions Telone C-17 may be severely corrosive to such materials. Unless referring to plasticized vinyl, vinyl and PVC are the same. PVC is listed above under Compatible Materials.
- Buna-N, neoprene and fiberglass have the potential to disintegrate and must not be used with Telone C-17.

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 flowmeter or a constant pressure system with orifice plates to insure the proper amount of fumigant is applied.

To prevent the backflow of fumigant into the compressed gas cylinder (e.g., nitrogen, other inert gas or compressed air), if used, applicators must:

- Ensure that positive pressure is maintained in the 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.)
- Ensure that application rigs are equipped with properly functioning check valves between the compressed gas cylinder or compressed air

system and the fumigant cylinder. The check valve is best placed on the outlet side of the pressure regulator and is oriented to only allow compressed gas to flow out of the cylinder or compressed air out of the compressed air system.

- Always pressurize the system with compressed gas or by use of a compressed air system before opening the fumigant cylinder valve.

Before using a fumigation rig for the first time, or when preparing it for use after storage, the operator must check the following items carefully:

- Check the filter and clean or replace the filter element as required.
- Check all tubes and chisels to make sure they are free of debris and obstructions.
- Check and clean the orifice plates and screen checks if installed.
- Pressurize the system with compressed gas or compressed air, and check all fittings, valves, and connections for leaks using soap solution.

Install the fumigant cylinder and connect and secure all tubing. Slowly open the compressed gas or compressed air valve and increase the pressure to the desired level. Slowly open the fumigant cylinder valve, always watching for leaks.

When the application is complete, close the fumigant cylinder valve and blow residual fumigant out of the fumigant lines into the soil using compressed gas or compressed air. At the end of the application, disconnect all fumigant cylinders from the application rig. At the end of the season, seal all tubing openings with tape to prevent 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

Leave the soil undisturbed and unplanted for at least 7 days after applying Telone C-17. A longer undisturbed interval is required if the soil becomes cold or wet, and for deep-rooted tree, shrub and vine planting sites.

After fumigation to prevent phytotoxicity, allow the fumigant to dissipate completely before planting the crop. Dissipation is usually complete when Telone C-17 can no longer be detected at the application depth. Under optimum soil conditions for dissipation, a period of 1 week for each 10 gallons per treated acre is generally required for complete dissipation. If virtually impermeable films (VIF) are used, a longer dissipation period may be needed. Rapidly germinating seed (i.e., lettuce or radish) and/or seed or transplants to be grown may

be used as a bioassay to determine if Telone C-17 is present in the soil at concentrations sufficient to cause plant injury.

To hasten dissipation especially if heavy rains or low temperatures occur during the treatment period, till the soil to the depth of fumigant application. Use a knife-like chisel without turning the soil to reduce the possibility of recontaminating the treated soil. Dissipation is usually complete when Telone C-17 is no longer evident at the application depth. Seed may be used as a bioassay to determine if Telone C-17 is present in the soil at concentrations sufficient to cause plant injury. Do not plant if Telone C-17 is detected.

Bulk and Non-Bulk Containers

Telone C-17 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with liquid Telone C-17.

- All hoses, piping, and tanks used in connection with Telone C-17 shall be of the type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of Telone C-17 when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move Telone C-17 beyond a pump must not exceed the manufacturer's maximum pressure specification.

Telone C-17 Tree Replant Applications Using Handheld Equipment – Additional GAPS

This application method is used when Telone C-17 is applied to individual tree sites in an existing orchard where shank applications are not possible. In addition to the GAPS required for all soil fumigation applications with Telone C-17, the following GAPS apply for tree replant applications with Telone C-17.

Site Preparation: Remove the tree stump and primary root system in each individual tree site with a backhoe or other similar equipment, for example, an auger. The backhoe site must be dug in the approximate dimensions of 10 x 10 x 10 feet.

Application Depth: The fumigant must be injected at least 18 inches into the soil. For sites where no restrictive soil layers are present, Telone C-17 can be applied to a depth of 5 feet using an injection auger. For tree replant sites in the western U.S., apply Telone C-17 at a single point in the center of each planting site at a depth of 5 feet below the

original soil surface, or into at least three points per planting site, at a depth of 3 feet below the original soil surface.

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: To prevent phototoxicity, assure that the chemical has dissipated completely before planting. Dissipation is slower in cold, wet soils. Prepare and treat planting sites in the fall and plant in the spring. Do not place in groundwater.

Site Specific FMP

Prior to the start of fumigation, the certified applicator supervising the application must verify that a site specific FMP exists for each application block (i.e., field or portion of a field treated with a fumigant in any 24-hour period). In addition, an agricultural operation fumigating multiple application blocks may format the FMP in a manner whereby all of the information that is common to all of the application blocks is captured once and any information unique to a particular application block or blocks is captured in subsequent sections. The FMP must be prepared by the certified applicator, the site owner/operator, registrant, or other party. The certified applicator must verify in writing (sign and date) that the site specific FMP reflects current site conditions before the start of fumigation.

Each site specific FMP must contain the following elements:

• Applicator Information

- o Name
- o Phone number
- o Pesticide applicator license and/or certificate number
- o Employer name and address

• General Site Information

- o Application block location (e.g., county, township-range-section quadrant), address or global positioning system (GPS) coordinates
- o Name, address, and phone number of owner/operator of the application block

• General Application Information

- o Target application date/window
- o Brand name of fumigant
- o EPA registration number

• Tarp Information and Procedures for Repair, Perforation and Removal (if tarp is used)

- o Brand name, lot number, thickness
- o Name and phone number of person responsible for repairing tarps

- o Schedule for checking tarps for damage, tears, and other problems
- o Maximum time following notification of damage that the person(s) responsible for tarp repair will respond
- o Minimum time following application that tarp will be repaired
- o Minimum size of damage that will be repaired
- o Other factors used to determine when tarp repair will be conducted
- o Name and phone number of person responsible for perforating and/or removing tarps
- o Equipment/methods used to perforate tarps
- o Schedule and target dates for perforating tarps
- o Schedule and target dates for removing tarps

• Soil Conditions

- o Description of soil texture in application block
- o Method used to determine soil moisture

• Weather Conditions

- o Summary of forecasted conditions for the day of application
- o Summary of conditions in the 48-hour period following the fumigant application
 - Wind speed
 - Inversion conditions [e.g., shallow, compressed (low-level) temperature inversion]
 - Air stagnation advisory
- Air-purifying respirators, SCBAs, and other personal protective equipment (PPE) for handlers (handler task, protective clothing, respirator make, model, type, style, and size, respirator cartridge type, respirator cartridge replacement schedule, eye protection, gloves, other PPE)
- If using an enclosed cab in lieu of wearing an air-purifying respirator, verify that the cab:
 - o Has positive pressure (6 mm H₂O Gauge)
 - o Has a minimum air intake flow of 43 m³/hour
 - o Is equipped with activated charcoal filter-media containing no less than 1000 grams of activated charcoal.
 - o Document the application hours of the filter to confirm that the filter has been used for no more than 50 hours of application time.
 - o In addition document that the ventilation system has been maintained according to manufacturer's instructions.
- Emergency Procedures
 - o Evacuation routes
 - o Locations of telephones
 - o Contact information for first responders
 - o Local/state/federal/tribal contacts
 - o Key personnel and emergency procedures/responsibilities in case of an incident
 - o Equipment/tarp/seal failure or complaints
 - o Other emergencies

- **Fumigant Treated Area Posting Procedures**

- o Person(s) who will post Fumigant Treated Area signs
 - o Location of Fumigant Treated Area signs
 - o Procedures for Fumigant Treated Area sign removal
- Plan describing how communication will take place between applicator, land owner/operator, and other on-site handlers (e.g., tarp perforators/removers, irrigators) for complying with label requirements (e.g., timing of tarp perforation and removal, PPE)
 - o Name and phone number of persons contacted
 - o Date contacted

- **Authorized On Site Personnel**

- o 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 For handlers designated to wear respirators (air-purifying respirator or SCBA):
 - Date of medical qualification for respirator(s) that each handler is designated to wear
 - Date of training for respirator(s) that each handler is designated to wear and
 - Date of fit testing for respirator (s) that each handler is designated to wear

- **Air Monitoring Plan**

- o If sensory irritation is experienced, indicate whether operations will be ceased or operations will continue with an air-purifying respirator.
- o If the intention is to cease operations when sensory irritation is experienced, provide the name, address, and phone number of the handler that will perform monitoring activities prior to operations resuming.
- o When air-purifying respirators are worn:
 - ◊ Representative handler tasks to be monitored
 - ◊ Monitoring equipment to be used and timing of monitoring

- **Good Agricultural Practices (GAPs)**

- o Description of applicable mandatory GAPs
- o Measurements and documentation to ensure GAPs are achieved (e.g., measurement of soil and other site conditions)

- **Description of Hazard Communication**

- o The application block has been posted in accordance with the label.
- o Pesticide product labels and material safety data sheets are on site and readily available for employees to review.

- **Recordkeeping Procedures**

The owner/operator of the application block as well as the certified applicator must keep a signed copy of the site specific FMP for two years from the date of the application.

For situations where an initial FMP is developed and certain elements do not change for multiple fumigation sites (e.g., applicator information, authorized on site personnel, recordkeeping 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.
- Recordkeeping requirements are followed for the entire FMP (including elements that do not change).

Once the application begins, the certified applicator must make a copy of the FMP available for viewing by handlers involved in the fumigation. The certified applicator or the owner/operator of the application block must provide a copy of the FMP to any local/state/federal/tribal enforcement personnel who requests the FMP. In the case of an emergency, the FMP must be made immediately available when requested by local/state/federal/tribal emergency response and enforcement personnel.

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

The post-application summary must contain the following elements:

- **Application Information**

- o Actual application date
- o Actual application rate
- o Size of application block fumigated

- **Weather Conditions**

- o Summary of weather conditions on day of application
- o Summary of weather conditions during 48-hour period following fumigant application

- **Soil Temperature Measurement**

If air temperatures were above 100°F in any of the three days prior to the application

- **Tarp Damage and Repair Information (if Applicable)**

- o Location and size of tarp damage
- o Description of tarp/tarp seal/tarp equipment failure
- o Date and time of tarp repair

- **Tarp Perforation/Removal Details (if Applicable)**
 - Description of tarp removal (if different than in the FMP)
 - Date tarps were perforated
 - Date tarps were removed
- **Complaint Details (if Applicable)**
 - Person filing complaint (e.g., on site handler, person off site)
 - If off site person filing complaint
 - Name
 - Address
 - Phone number
 - Description of control measures or emergency procedures followed after complaint
- Description of incidents, equipment failure, or other emergency and emergency procedures followed (if applicable)
- **Details of Elevated Air Concentrations Monitored On Site (if Applicable)**
 - Location of elevated air concentration levels
 - Description of control measures or emergency procedures followed
 - Air monitoring results
 - When sensory irritation experienced:
 - Date and time of sensory irritation
 - Handler task/activity
 - Handler location where sensory irritation was observed
 - Resulting action (e.g., cease operations, continue operations with air-purifying respirators)
 - When using a direct read instrument:
 - Sample date and time
 - Handler task/activity
 - Handler location
 - Air concentration
 - Sampling method
- **Date of Fumigant Treated Area Sign Removal**
- **Any Deviations From the FMP**
- **Recordkeeping Procedures**

The owner/operator of the application block as well as the certified applicator must keep a signed copy of the post-application summary for two years from the date of application.

Entry Restricted Period and Notification Requirements

Entry Restricted Period

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

- 5 days (120 hours) after the application is complete for untarped applications or
- 5 days (120 hours) after the application is complete if tarps are not perforated and removed

for at least 14 days following application. **Note:** Persons installing, repairing, or monitoring tarps are handlers until 14 days after the application is complete if tarps are not perforated and removed during those 14 days, or

- 48 hours after tarp perforation is complete if tarps will not be removed for at least 14 days following application or
- tarp removal is completed if tarps are both perforated and removed less than 14 days after application

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

Notification Requirements

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

- “DANGER/PELIGRO”
- “Area under fumigation, DO NOT ENTER/NO ENTRE”
- “1,3-dichloropropene and chloropicrin fumigants in use”
- The date and time of fumigation
- The date and time entry prohibition period is over
- Telone C-17
- Name, address, and telephone number of the certified applicator in charge of the fumigation.

Post the Fumigant Treated Area sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size, and timing of posting and removal. Post the Fumigant Treated Area sign at all entrances to the application block (i.e., field or portion of a field treated with a fumigant in any 24-hour period).

Application Directions

Buffer Zone

An application of Telone C-17 shall not be made within 100 feet of an occupied structure, such as a school, hospital, business or residence. No person shall be present at this structure at any time during the seven consecutive day period following application. **This buffer zone does not apply to use on soils that will not experience an additional 1,3-D treatment for at least three years, for example, on soils to be planted with fruit trees, nut and nursery crops, perennial vines, hops, mint or pineapple.** **Note:** Telone C-17 shall not be applied to soils more frequently than once each year.

Uses

Control of Nematodes

Use Telone C-17 for control of nematodes and symphylans, management of soil diseases, and suppression of wireworms in soils to be planted to vegetable crops, field crops, fruit and nut crops, nursery crops and mint.

Table 1. Broadcast Application Rates for Nematodes, Symphylans, Wireworms, and Certain Soil Borne Diseases

Crops	Soil Type	Broadcast Application Rates ¹ (Gallons/Acre)	
		Untarped Shank Injection	Tarped Shank or Untarped Deep (18" Minimum) Shank Injection
vegetable crops	mineral muck or peat	10.8 to 17.1 ³ 27.4 ⁴ to 30	
potato ^{2, 3} and onion ²	mineral muck or peat	18 to 27.5 ² 30	
field crops ⁵	mineral muck or peat	10.8 to 17.1 ³ 21.6	
fruit and nut crops ^{6, 7} including strawberries	mineral, muck, or peat	32.4 to 37	32.4 to 42
nursery crops	mineral, muck, or peat	---	50.4 to 66
mint	mineral, muck, or peat	27.5	

Note: For control of symphylans (garden centipedes) or suppression of wireworms, consult the Soil Insects section below for more specific directions and application rates.

¹Rates given may be concentrated in the row, but in no case shall the amount applied per acre exceed the maximum broadcast application rates [gallons per acre (gpa)] given in Table 1.

²Potatoes and onions: To control root knot nematode and suppress wireworms in mineral soils, apply Telone C-17 at the rate of 24 gpa. To control northern root knot nematode in mineral soils, apply Telone C-17 at the rate of 18 to 21 gpa. To control stubby root nematode in mineral soils, apply Telone C-17 at the rate of 27.5 gpa. For best results, apply the fumigant consistently at least 18 inches below the final soil/air interface.

Preharvest soil sampling and preharvest tuber sampling is recommended to detect developing nematode populations or early tuber infection. There are a range of soil conditions under which Telone C-17 can be applied. Within that range, product performance will improve as the soil condition moves toward optimum. Using Telone C-17 under soil conditions outside the range will yield less than satisfactory performance.

³Potatoes: Before fumigation, soil sampling for the type and number of pests present is recommended and can help to determine the need for additional treatment with a contact nematicide. Preharvest tuber sampling for nematodes also is recommended. For best timing and sampling methods, consult a local extension service agent, pest control advisor, or Dow AgroSciences representative for assistance. If the nematode population is high enough to damage

the crop, the potatoes can be harvested early. Fumigation cannot be expected to eradicate the entire pest population. Therefore, post-treatment and preplant soil sampling is recommended to determine the need for additional pest population control or other management practices. Do not store potatoes with a detectable nematode infestation. Row treatment is not recommended for potatoes in irrigated areas of western and northwestern states. Do not use plow-sole application.

Using Telone C-17 does not guarantee pest-free potatoes at harvest. Using Telone C-17 according to use directions will control only the nematode populations present within the fumigated zone at the time of fumigation. The fumigated zone can vary depending upon a number of factors such as fumigant rate, application methods used, depth of application, soil moisture, soil type, soil temperature and soil tilth (including soil compaction and soil porosity). Telone C-17 will not control or prevent reinfestation subsequent to treatment. Subsequent pest populations may infest the fumigated zone from irrigation water, equipment or other sources of contamination, or may invade the fumigated zone from surrounding untreated soil such as from beneath the fumigated zone or from unfumigated pockets within the fumigated zone.

Do not plow the ground in the spring in such a way that inverts the soil prior to a spring fumigation. Conduct such tillage operations in the fall to allow winter kill of residual nematode populations in the top 1 to 2 inches of the soil profile. A cover crop, such as wheat or grass, can be planted to reduce the potential for soil erosion following a fall soil fumigation and undisturbed soil interval.

⁴When using the coulter system (e.g., Yetter 30-inch Avenger) in moderate to heavy disease pressure, use the maximum rate of Telone C-17 followed by chloropicrin in-bed. Consult your local certified dealer for rate recommendations.

⁵For muck soils containing less than 30% organic matter use 21.6 gpa. **In New York:** for high organic matter soils, use up to 41 gpa.

⁶Citrus Fruits: For burrowing nematode control, inject Telone C-17 on 18-inch centers at least 12 inches deep. For buffers within existing groves or for tree planting sites within existing groves, do not apply within 5 feet of living trees. Keep the field free of plants susceptible to burrowing nematodes for 2 years before replanting to citrus.

⁷Tree Planting Sites in the U.S. use 31 fl oz of Telone C-17.

Control of Soil Insects

Symphyllans (Garden Centipedes): Use Telone C-17 for treatment of soil to be planted to crops where these pests have been shown to be a problem. Apply the fumigant only as a broadcast treatment at the rate of 21.6 to 42 gpa. For best results, apply during late summer or early fall when the soil is warm.

Wireworms: Use Telone C-17 for treatment of soil to be planted to crops where these pests have been shown to be a problem. Apply the fumigant as a broadcast treatment at 24 gpa by injection at least 18 inches below the final soil surface.

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