

IGI CARBON DIOXIDE BOOKLET LABEL



For Storage and Containment Structures, Outdoor Burrowing Pest Control

ACTIVE INGREDIENT: Carbon Dioxide.....99.9%
OTHER INGREDIENTS:.....0.1%
TOTAL.....100.0%

KEEP OUT OF REACH OF CHILDREN
WARNING

Table with 2 columns: 'If inhaled:' and 'FIRST AID'. Contains instructions for emergency response and a note to keep the product container.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING: May be fatal if inhaled. Do not breathe vapor. Exposure may cause suffocation and death. Ventilate areas before entering. For handling activities in enclosed areas during and after application, use either a supplied-air respirator with NIOSH approval number TC-19C or a self-contained breathing apparatus (SCBA) with NIOSH approval number TC-13F. Wear eye protection when connecting or adjusting regulator and gauge assemblies and when applying carbon dioxide. Do not attempt to use the system with the cylinder in a horizontal position as liquid carbon dioxide could leak, resulting in frostbite from contact with the liquid carbon dioxide or frozen metal parts.

EPA Reg. No.: 7173-313

EPA Est. No.:

- 89867-CA-1 69180-TX-1 89867-MD-1 89867-IL-1 89867-WA-1 8536-SC-1
89867-CA-2 69180-OH-1 89867-NJ-1 89867-LA-1 89867-NC-1
89867-CA-3 74979-FL-1 89867-FL-1 89867-MA-1 89867-SC-1

Net Wt.: See CO2 Cylinder Label

Lot No.: See CO2 Cylinder Label

Manufactured for:
Liphatech, Inc.
3600 W. Elm Street
Milwaukee, WI 53209

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## DIRECTIONS FOR USE

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.

## PRODUCT INFORMATION

This product is used to asphyxiate burrowing pests in underground burrow or tunnel systems and to fumigate silos, storages, trucks, trailers, sealed railroad cars, and cargo ships. Listed burrowing pests are common on golf courses, sports complexes, farms, rangelands, public parks and lands, school yards, levees, highway, roadside, and railroad rights-of-way, and private lands where burrowing pests damage landscape and destroy public land improvements.

The following agricultural commodities and other products may be treated: corn, including popcorn, barley, oats, rice (milled and/or enriched), sorghum, wheat, rye and other small grains, cocoa beans, coffee beans, flour, cereal and related products, all dry beans, peas, macaroni and pasta products, dry milk and products made with dry milk, nuts including peanuts, almonds, walnuts, pecans, filberts, cashews and brazil nuts, dried fruits including apples, apricots, currants, dates, figs, peaches, prunes, pears and raisins, raw and processed tobacco, brewer's grits, candy, all spices, all herbs, animal feed in bulk or bags, birdseed, mammal skins, stuffed animals, herbarium, specimens, rare books and wood products such as carvings.

This product is effective against the following types of pests that occur in stored products, in structures, in burrows or underground tunnel networks:

- 1) **Beetles**, including the granary weevil, rice weevil, broadnosed grain weevil, lesser grain borer, larger grain borer, confused flour beetle, red flour beetle, American black flour beetle, khapra beetle, warehouse beetle, longheaded flour beetle, slender-horned flour beetle, larger black flour beetle, yellow mealworm, dark mealworm, black carpet beetle, rusty grain beetle, flat grain beetle, saw-toothed grain beetle, merchant grain beetle, foreign grain beetle, corn sap beetle, cigarette beetle, drugstore beetle, cowpea weevil, bean weevil, pea weevil, broadbean weevil, coffee bean weevil and cadelle.
- 2) **Psocoptera**, including the book louse.
- 3) **Moths**, including the Angoumois grain moth, Indian meal moth, almond moth, raisin moth, tobacco moth, Mediterranean flour moth, meal moth, rice moth, navel orangeworm, webbing clothe moth, casemaking clothes moth and carpet moth.
- 4) **Agricultural pests**<sup>†</sup>, including thrips and spider mites.
- 5) **Burrowing pests**, including pocket gophers, ground squirrels, groundhogs<sup>†</sup>, rats, ants (except carpenter, harvester, fire, and pharaoh), voles<sup>†</sup> and moles that occupy underground tunnels and burrows.

<sup>†</sup>Not permitted for use against the following species in California: Agricultural pests, including thrips and spider mites, groundhogs, and voles.

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## Burrowing Pest Control

**USE RESTRICTIONS:** For control of pocket gophers, ground squirrels, rats (including Norway rats, roof rats, and Polynesian rats), voles<sup>†</sup>, moles, ants (except carpenter, harvester, fire, and pharaoh), and groundhogs<sup>†</sup> on golf courses, sports complexes, farms, rangelands, public parks and lands, commercial nurseries, commercial and industrial areas, school yards, levees, highway, roadside, and railroad rights-of-way, residential areas, and private lands where burrowing pests damage landscape and destroy public land improvements.

Use IGI Carbon Dioxide only with the IGI Eliminator™ Injection Device. The Eliminator Injection Device has been specially designed for use in the treatment of underground burrows and tunnel systems for burrowing rodent control. Read the operator's manual for the Eliminator in its entirety and follow the directions to assemble and use the Eliminator. Retain the Eliminator operator's manual for future or regular reference and for ordering replacement parts.

**PREPARATION FOR USE:** Follow these directions for all burrowing pests except for Voles<sup>†</sup>; see that section for additional directions first. Attach the threaded end of the rubber hose to the threaded port on the regulator and gauge assembly. Teflon thread sealing tape is NOT needed. Tighten snugly with an adjustable wrench or pliers but do not overtighten. Make sure there is a gasket in the pressure regulator and gauge assembly connection point to the cylinder. This gasket is necessary to prevent gas leakage. Remove the safety cap or bonnet from the cylinder valve, if there is one. Attach the regulator and gauge assembly to the cylinder by holding the regulator and gauge assembly in one hand while turning the fitting nut clockwise with the other. Position gauges so you can read them. Tighten snugly with wrench or pliers but do not overtighten. Attach the Eliminator Injection Device quick connect fitting to the corresponding fitting on the rubber hose. Make sure that the valve on the control arm is in the off position by rotating it so it is perpendicular (90°) to the control arm. Slowly open the cylinder valve until completely open. Listen and feel for gas leaks in fittings and the hose. If a leak is noted, close the valve and tighten leaking fittings before proceeding. Repair or replace a leaking hose.

**SELECTION OF TREATMENT AREAS:** Identifying the pest species and treating all active burrow entrances is necessary to effectively control the target pests. Signs of activity include rodent sightings, visible runways, presence of burrow holes and soft soil undermined with tunnels. Consult sources such as pest control texts, university websites, and/or county extension agents for detailed information about the burrowing habits of local species. *Do not apply product to burrows or dens known or believed to contain non-target vertebrate animals.*

### **APPLICATION DIRECTIONS:**

**Rats, ground squirrels and groundhogs<sup>†</sup>:** Temporarily plug each burrow opening with a shovelful of dirt or wad of newspaper. Turn the Eliminator Control Arm so it is perpendicular (90°) to the T-Handle. This will close the Injection Ports and prevent them from becoming clogged with dirt. Push the Eliminator Injection Device into the burrow opening through the dirt or past the paper wad until the injection ports are within the burrow and un-obstructed. Turn the Eliminator Control Arm so it is parallel to the T-Handle. This will open the injection ports and allow the gas to flow freely into the burrow. Turn the gas valve on the control arm to parallel with the control arm to turn on the gas. Adjust the flow rate to 20 – 30 liters per minute (lpm), as indicated on the chart below, by turning the adjustment screw clockwise for a higher flow rate and counter-clockwise for a lower flow rate. Inject the gas into the burrow for 2 to 3 minutes. Extensive burrow systems and large burrows will require the maximum application time.

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SPECIES	PRESSURE	FLOW RATE (Liters/Minute)	DURATION
Rats	20-30 psi	20 – 30 lpm	2 – 3 minutes
Ground Squirrels	20-30 psi	20 – 30 lpm	2 – 3 minutes
Groundhogs†	20-30 psi	20 – 30 lpm	2 – 3 minutes

After the injection is finished, turn the valve to the off position by rotating it perpendicular (90°) to the control arm, rotate the control arm to perpendicular (90°) to the T-handle, remove the Eliminator Injection Device from the burrow opening and cover the hole with dirt or plug with a wad of paper, to detect whether the burrow entrance is reopened during follow-up inspection of the site. Due to the potential for rapid reinvasion by these species, it is recommended that the site be revisited within two (2) – three (3) days for additional treatment, if needed. Use flags or utility marking paint to keep track of treated burrow openings. Once all the burrows are treated, turn off the gas valve on the cylinder and depressurize the system by opening the valve on the control arm to parallel with the control arm. Store cylinder according to the storage directions.

**Pocket gophers and moles:** These rodents “plug” their entry/exit holes. Use the Soil Piercing Probe to locate the burrow by probing around within the soil apron, approximately 2 - 3 feet away from the “plug”, noting a drop of a few inches when the probe enters the burrow. Once the burrow is located, slowly remove the probe. Turn the Eliminator Control Arm so it is perpendicular (90°) to the T-Handle. This will close the Injection Ports and prevent them from becoming clogged with dirt. Push the Eliminator Injection Device into the burrow through the hole left by the Soil Piercing Probe until the injection ports are within the burrow and unobstructed. Turn the Eliminator Control Arm so it is parallel to the T- Handle. This will open the injection ports and allow the gas to flow freely into the burrow. Turn the gas valve on the control arm to parallel with the control arm to turn on the gas. Adjust the flow rate to 15 - 25 liters per minute (lpm) for pocket gophers, or 5 - 30 lpm for moles, as indicated on the chart below, by turning the adjustment screw clockwise for a higher flow rate and counter-clockwise for a lower flow rate. Inject the gas for the duration time indicated on the chart below for the target pest. Extensive burrow systems will require the maximum application time.

SPECIES	PRESSURE	FLOW RATE (liters/minute)	DURATION
Pocket Gopher	15-25 psi	15 – 25 lpm	45 seconds – 1 ½ minutes
Moles	5-30 psi	5 – 30 lpm	45 seconds – 3 minutes

After the injection is finished, turn off the valve, rotate the control arm to perpendicular to the T-handle, remove the Eliminator Injection Device from the burrow opening and cover the hole with dirt or plug with a wad of paper, to detect whether the burrow entrance is reopened during follow-up inspection of the site. Use flags or utility marking paint to keep track of treated burrow openings. Once all the burrows are treated, turnoff the gas valve on the cylinder and depressurize the system by opening the valve on the control arm to parallel with the control arm. Store cylinder according to the storage directions.

**Voies† and other rodent burrows with open (unplugged) entrances:** Remove the pointed end of the Eliminator Injection Device with pliers. Attach the Flexible Extension Tube to the now open end of the Eliminator until the injection ports are covered and secure with a Zip Tie. Follow the Preparation for Use Directions. Insert the open end of the Flexible Extension Tube into the burrow opening. (Note: closing and opening the injection ports is not needed with the Flexible Extension Tube in place.) Turn the gas valve on the control arm to parallel with the

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control arm to turn on the gas. Adjust the flow rate to 5 - 30 liters per minute (lpm), as indicated on the chart below, by turning the adjustment screw clockwise for a higher flow rate and counter-clockwise for a lower flow rate. Inject the gas for 45 seconds to 3 minutes. Extensive burrow systems will require the maximum application time.

SPECIES	PRESSURE	FLOW RATE (liters/minute)	DURATION
Voles†	5-30 psi	5 – 30 lpm	45 seconds - 3 minutes

After the injection is finished, turn off the valve and remove the Eliminator Injection Device from the burrow opening and cover the hole with dirt or plug with a wad of paper, to detect whether the burrow entrance is reopened during follow-up inspection of the site. Due to the potential for rapid reinvasion by these species, it is recommended that the site be revisited within two (2) – three (3) days for additional treatment, if needed. Use flags or utility marking paint to keep track of treated burrow openings. Once all the burrows are treated, turn off the gas valve on the cylinder and depressurize the system by opening the valve on the control arm to parallel with the control arm. Store cylinder according to the storage directions.

**Ants (except carpenter, harvester, fire, and pharaoh ants):** Turn the Eliminator Control Arm so it is perpendicular (90°) to the T-Handle. This will close the Injection Ports and prevent them from becoming clogged with dirt. Push the Eliminator Injection Device into the ant nest opening. Turn the Eliminator Control Arm so it is parallel to the T-Handle. This will open the injection ports and allow the gas to flow freely into the nest. Turn the gas valve on the control arm to parallel with the control arm to turn on the gas. Adjust the flow rate to 20 - 30 liters per minute (lpm), as indicated on the chart below, by turning the adjustment screw clockwise for a higher flow rate and counter-clockwise for a lower flow rate. Inject the gas for 2 – 3 minutes, as indicated on the chart below.

SPECIES	PRESSURE	FLOW RATE (Liters/minute)	DURATION
Ants*	20-30 psi	20 – 30 lpm	2 - 3 minutes

(\*Except carpenter, harvester, fire, and pharaoh ants)

After the injection is finished, turn off the valve, rotate the control arm to perpendicular (90°) to the T-handle, and remove the Eliminator Injection Device from the soil. Use flags or utility marking paint to keep track of treated ant mounds/nests. Once all the mounds/nests are treated, turn off the gas valve on the cylinder and depressurize the system by opening the valve on the control arm to parallel with the control arm. Store cylinder according to the storage directions.

**Follow Up:** Watch post application for any signs of escaping pests from the treated burrows. Perform a follow-up inspection within seven (7) days or as otherwise recommended on this label. Dead rodents may not be visible in treated areas as they may likely die within the underground burrows. Signs of rodent activity (reopening of closed burrow entrances) indicate additional treatments are required. Retreat any remaining active burrows.

**Endangered Species:** It is against Federal Law to use any pesticide in a manner that results in the death of an endangered species. Use of this product may pose a hazard to endangered or threatened species. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. To obtain Bulletins, no more than six months before using the product, consult <http://www.epa.gov/espp/> or call 1-844-447-3813. You must use the Bulletin valid for the month in which you will apply the product.



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### Storage, Transport, and Containment Fumigation Structure Pest Control

For storage and structural fumigation, dosage rates vary from 60% atmosphere to 88% atmosphere. Treatment times vary from 24 hours to 4 days. Do not fumigate if temperature is less than 40°F. Structure should be as gas tight as possible before treatment. Maintain as near as 60% ±10% CO<sub>2</sub> as possible.

**Storage Vessels:** Purge storage vessel (bin, silo, or sealed railcar) to a minimum concentration of 60% (600,000 ppm) atmosphere. Use a two-day treatment for killing adult insects and a four-day treatment for killing all life stages of insects. For specific flows to use, contact a qualified fumigation specialist.

**Trucks & Trailers:** Treat as indicated above in Storage Vessels. Do not move truck or trailer during treatment. Trucks and trailers must be aerated before movement is allowed.

**Shipboard, In-transit Ship, or Cargo Hold Fumigation:** Treat as indicated above in Storage Vessels. **IMPORTANT:** Shipboard, in-transit ship, or cargo hold fumigation is also governed by U.S. Coast Guard Regulations. Refer to and comply with these regulations prior to fumigation.

#### Pre-fumigation Procedures

1. Prior to fumigating a vessel for in-transit cargo fumigation, the master of the vessel or his/her representative and the fumigator must determine whether the vessel is suitably designed and configured so as to allow for safe occupancy by the ship's crew throughout the duration of the fumigation. If it is determined that the design and configuration of the vessel does not allow for safe occupancy by the ship's crew throughout the duration of the fumigation, then the vessel will not be fumigated unless all crew members are removed from the vessel. The crew members will not be allowed to reoccupy the vessel until the vessel has been properly aerated and a determination has been made by the master of the vessel and the fumigator that the vessel is safe for occupancy.
2. The person responsible for the fumigation must notify the master of the vessel, or his representative, of the requirements relating to personal protection equipment, detection equipment and that a person qualified in the use of this equipment must accompany the vessel with cargo under fumigation. Emergency procedures, cargo ventilation, periodic monitoring and inspections, and first aid measures must be discussed with and understood by the master of the vessel or his representative.
3. During the fumigation or until a manned vessel leaves port or the cargo is aerated, the person in charge of the fumigation must ensure that a qualified person using gas or vapor detection equipment tests spaces adjacent to spaces containing fumigated cargo and all regularly occupied spaces for fumigation leakage. If leakage of the fumigant is detected, the person in charge of the fumigation must take action to correct the leakage, or shall inform the master of the vessel, or his representative, of the leakage so that corrective action can be taken.
4. If the fumigation is not completed and the vessel is not aerated before the manned vessel leaves port, the person in charge of the vessel must ensure that at least two units of personal protection equipment, one gas or vapor detection device, and a person qualified in the operation be on board the vessel during the voyage.

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### Precautions and Procedures During Voyage

Using appropriate gas detection equipment, monitor spaces adjacent to areas containing fumigated cargo and all regularly occupied areas for fumigant leakage. If leakage is detected, the area should be evacuated of all personnel, ventilated, and action taken to correct the leakage, before allowing the area to be occupied. If necessary to enter a fumigated area, appropriate personal protection equipment must be used. Never enter fumigated areas alone. At least one other person, wearing personal protection equipment, should be available to assist in case of an emergency.

### Precautions and Procedures During Discharge

If necessary to enter hold prior to discharge, test spaces directly above surface for fumigant concentration, using appropriate gas detection and personal protection equipment. Do not allow entry to fumigated areas without personal safety equipment unless fumigant concentrations are at safe levels, as indicated by a suitable detector. Personal protection equipment for the fumigant means a supplied-air respirator with NIOSH approval number TC-19C or a self-contained breathing apparatus (SCBA) with NIOSH approval number TC-13F.

### **AERATION**

After application of product in enclosed spaces, aerate treated areas until the level of CO<sub>2</sub>, as measured by commercially available analyzers, is below 5,000 ppm. Follow the instructions as written in the manufacturer's operation manual.

#### RE-ENTRY (below 5,000 ppm CO<sub>2</sub>):

Persons may re-enter the treated area without respiratory protection.

#### RE-ENTRY (between 5,000-30,000 ppm CO<sub>2</sub>):

Persons may re-enter the treated area without respiratory protection, provided that the exposure period is 15 minutes or less. For periods longer than 15 minutes, persons must wear the respiratory protection device specified in the PRECAUTIONARY STATEMENTS.

#### RE-ENTRY (greater than 30,000 ppm CO<sub>2</sub> or if the concentration is unknown):

Persons must always wear the respiratory protection device specified in the PRECAUTIONARY STATEMENTS.

### **TRAINING**

All persons working with this product must be knowledgeable of the hazards of this product and trained in the use of required respirator equipment and detector devices, emergency procedures, and use of the product. When used for fumigation of enclosed spaces (boxcars, silos, ship containers, and other transport vehicles), two persons familiar with the use of this product must be present during the initial introduction of the fumigant, initiation of aeration, and after aeration when testing for reentry. Two persons do not need to be present if monitoring is conducted remotely (outside of area being fumigated).

### **PLACARDING STATEMENT**

The applicator must placard or post all entrances to all enclosed fumigated areas with signs conforming to the following requirements:

- a) The sign must be at least 14 inches by 16 inches in size and the letters must be at least 1 inch in height unless a smaller size sign is necessary because the treated area is too

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- small to accommodate a sign of this size. Letters must be clearly legible.
- b) The word, "DANGER/PELIGRO" and the skull and crossbones symbol must be on the placard.
  - c) The statement, "Area under fumigation, DO NOT ENTER/NO ENTRE."
  - d) The date of fumigation.
  - e) The name of the fumigant (carbon dioxide).
  - f) Name, address and telephone number of the applicator or pesticide handler.

These signs must be posted at eye level and must be visible from all visible points of entry to the treated area. They must remain posted during application and throughout the restricted-entry interval until the concentration of carbon dioxide is below 5,000 ppm. Each separate treated area (i.e., boxcar, silo, ship container) must be posted or placarded with this sign.

The applicator or person responsible for monitoring levels of carbon dioxide may remove the placard when the concentration of carbon dioxide is at or below 5,000 ppm.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area. Store cylinders upright, secured to a rack or wall to prevent tipping. Do not subject cylinders to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs or similar devices to unload cylinders. Transport cylinders by hand, using hand truck or fork truck to which the cylinder can be firmly secured. Do not remove valve protection bonnet or safety cap until immediately before installing the regulator and gauge assembly. Replace safety cap or valve protection bonnet when the regulator and gauge assembly is not installed.

**PESTICIDE DISPOSAL:** Vent unusable carbon dioxide to open air.

**CONTAINER HANDLING:** Refillable container. Refill this container with pesticide (carbon dioxide) only. Do not reuse this container for any other purpose. Return empty cylinders for reuse or disposal. When cylinder is empty, close the valve and replace the valve protection bonnet or safety cap before returning to supplier. Follow registrant's instruction for return of empty or partially empty cylinders.

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

Evacuate immediate area of leak. Use respiratory device (see PRECAUTIONARY STATEMENTS) for entry into affected enclosed area to correct problem. Move leaking or damaged cylinders outdoors or to an isolated location, observing strict safety precautions. When completely empty, return to manufacturer or, if instructed, recycle/dispose of leaking or damaged cylinders or containers in accordance with State and Local waste disposal regulations. Do not permit entry into spill area by unprotected persons until concentration of carbon dioxide is determined to be less than 5,000 ppm.