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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

OCT 29 2009

Mardel Rose Belotinsky  
Soil Chemicals Corporation  
D/B/A Cardinal Professional Products  
P.O. Box 782  
Hollister, CA 95024

Subject: Pic-Clor 60  
EPA Reg. No. 8536-8  
Your Submission dated July 14, 2009  
EPA Decision Number 421122

Dear Ms. Belotinsky:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable provided the following label revisions are made:

1. On page 2, change the company name to read "Soil Chemical Corporation D/B/A Cardinal Professional Products".
2. On page 3 under (1) Handlers Performing Tasks With Liquid Contact Potential, revise the sixth bullet to read "fumigant transfer (including mechanical transfer systems)"
3. On pages 5, delete the last sentence on the page which references the "Telone Soil Fumigant - A guide to Application"
4. On page 8 under the Mechanical Transfer System section, delete all text and replace it with the following "Contact your product distributor for information on mechanical transfer systems."
5. On page 8 under the End-Row Spillage Control, delete the third and fourth sentences.
6. On page 15 under "Uses", revise the first sentence to read "This product controls nematodes, symphylans. . ."

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One copy of the label stamped "Accepted with comments" is enclosed for your records. Submit one copy of the final printed label before the product is released for shipment. If you have any questions, please contact Mary Waller by phone at 703 308-9354 or at [waller.mary@epa.gov](mailto:waller.mary@epa.gov).

Sincerely,



Mary Waller  
Product Manager, Team 21  
Fungicide Branch  
Registration Division (7505P)

Enclosure

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**RESTRICTED USE PESTICIDE**  
**DUE TO HIGH ACUTE INHALATION TOXICITY AND CARCINOGENICITY**  
 For retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

# Pic-Clor 60

*A multi-purpose liquid fumigant for preplant treatment of soil to control nematodes, symphlyans, wireworms and certain soil-borne diseases in cropland.*

*Not for use in greenhouses or other enclosed areas.*

**ACTIVE INGREDIENTS:**

1,3-Dichloropropene .....	39.0%
Chloropicrin .....	59.6%
<b>OTHER INGREDIENTS:</b> .....	1.4%
<b>TOTAL:</b> .....	100.0%

One gallon of Pic-Clor 60 weighs about 12.1 pounds at 20° C.  
 Contains 4.7 pounds of 1,3-Dichloropropene and 7.2 pounds of Chloropicrin per gallon.

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, the pesticide registered under EPA Reg. No. 8536-8

OCT 29 2009

ADVERTISED  
 with COMMENTS  
 In EPA Letter Dated

**KEEP OUT OF REACH OF CHILDREN**



**DANGER                      PELIGRO**

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

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

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

FIRST AID	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<ul style="list-style-type: none"> <li>• For additional information in case of an emergency, call toll free (1-800-424-9300.)</li> </ul>	

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

**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. Probable mucosal damage may contraindicate the use of gastric lavage. 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.

*SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS.*



**Cardinal Professional Products**

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

**(831) 630-2258**

EPA Reg. No. 8536-8

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

NET CONTENTS.....LBS.

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS:**

**D A N G E R**

**HAZARDOUS LIQUID AND VAPOR**

- DO NOT SWALLOW ANY OF THIS PRODUCT. MAY BE FATAL IF SWALLOWED.
- DO NOT GET IN EYES. CAUSES SEVERE EYE INJURY.
- 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 FUMIGANT HAS THE CAPACITY TO CAUSE MARKED IRRITATION TO THE UPPER RESPIRATORY TRACT. A STRONG LACHRYMATOR (TEAR PRODUCING EYE IRRITANT). 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.

### AIR CONCENTRATION LEVEL

The acceptable air concentration level for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m<sup>3</sup>). If the air concentration level exceeds 0.1 ppm, an air-purifying respirator must be worn. If the air concentration level exceeds 2 ppm, an air-supplied respirator must be worn. The air concentration level is measured by a direct reading detection device, such as a Matheson-Kitagawa, Dräger, or Sensidyne.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Chemical-Resistant Materials:** Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category H on an EPA 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 Lifeguard 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 when contact with this product is possible. Coveralls 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.

**(1) Handlers Performing Tasks With Liquid Contact Potential:** Tasks with liquid contact potential are tasks performed outdoors or in a well-ventilated area. They include:

- equipment calibration or adjustment
- equipment cleanup and repair
- product sampling
- any activity less than 6 feet from an unshielded pressurized hose containing this product
- rinsate disposal
- fumigant transfer
- clean-up of small spills
- preparing containers for aeration
- any other handling task not otherwise listed in (2), (3), or (4), below.

***Handlers performing tasks with liquid contact potential must wear at minimum:***

- coveralls over short-sleeved shirt and short pants
- chemical-resistant gloves, such as barrier laminate (EVAL) or Viton
- chemical-resistant footwear plus socks
- chemical-resistant headgear for overhead exposure
- chemical-resistant apron
- a face shield or safety glasses with brow and temple shields (Do not wear chemical goggles)
- a half-face respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). See further respirator requirements in the "User Safety Requirements" section of this label.
- **If the air concentration level of chloropicrin exceeds 0.1 ppm**, handlers must wear a full-face respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

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**(2a) Handlers Performing Tasks with No Liquid Contact Potential:** Broadcast applications, in-bed applications, or applications at the time of bedding, except as in 2b. Tasks with no liquid contact potential are tasks performed outdoors or in a well-ventilated area. These tasks include:

- tractor driving
- soil sealing
- field activities on the day of application that do not disrupt the soil at the depth of liquid injection

***Handlers performing tasks with no liquid contact potential must wear at minimum:***

- loose fitting or well ventilated long-sleeved shirt and long pants
- shoes and socks
- a face shield or safety glasses with brow and temple shields (Do not wear chemical goggles)
- a half-face respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).
- **If the air concentration level of chloropicrin exceeds 0.1 ppm**, handlers must wear a full-face respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). See further respirator requirements in the "User Safety Requirements" section of this label.
- In addition, the PPE specified in (1) for activities with liquid contact potential must be immediately available and must be worn if the handler is to perform any direct-contact activity with a potential for liquid contact.

**(2b) Handlers Performing Tasks with No Liquid Contact Potential:** Pre-bed, Row product applications, (e.g., Yetter rig). Tasks with no liquid contact potential are tasks performed outdoors or in a well-ventilated area. These tasks include:

- tractor driving
- soil sealing
- field activities on the day of application that do not disrupt the soil at the depth of liquid injection

***Handlers performing tasks with no liquid contact potential must wear at minimum:***

- loose fitting or well ventilated long-sleeved shirt and long pants
- shoes and socks
- a face shield or safety glasses with brow and temple shields (Do not wear chemical goggles)
- **If the air concentration level of chloropicrin exceeds 0.1 ppm**, handlers must wear a full-face respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). See further respirator requirements in the "User Safety Requirements" section of this label.
- In addition, the PPE specified in (1) for activities with liquid contact potential must be immediately available and must be worn if the handler is to perform any direct-contact activity with a potential for liquid contact.

**(3) Handlers In Treated Area 1 to 5 days After Application:** Only the following handler tasks may be performed in the treated area within 5 days after the application is complete:

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- assessing/adjusting the soil seal
  - assessing pest control, application technique, or application efficacy
  - sampling air or soil for this product
  - removing tarp or plastic film

**All other tasks are prohibited until the 5-day period has expired.**

***Handlers in treated area 1 to 5 days after application must wear at minimum:***

- loose fitting or well ventilated long-sleeved shirt and long pants
  - shoes and socks
  - a face shield or safety glasses with brow and temple shields (Do not wear chemical goggles)
  - a half-face respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).
  - **If the air concentration level of chloropicrin exceeds 0.1 ppm**, handlers must wear a full-face respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G). See further respirator requirements in the "User Safety Requirements" section of this label.
  - In addition, the PPE specified in (1) for activities with liquid contact potential must be immediately available and must be worn if the handler is to perform any direct-contact activity with a potential for liquid contact.
- (4) Handlers Exposed to High Concentrations: *Handlers exposed to high airborne concentrations of this product, such as cleanup following large spills and exposure to this product in poorly ventilated areas, must wear:***
- chemical-resistant suit
  - chemical-resistant gloves, such as barrier laminate (EVAL) or Viton
  - chemical-resistant footwear plus socks
  - chemical-resistant headgear
  - supplied-air respirator with MSHA/NIOSH approval number prefix TC-19C or self-contained breathing apparatus (SCBA) with MSHA/NIOSH approval number prefix TC-13F. See further respirator requirements in the "User Safety Requirements" section of this label.

Note: In-tank cleaning of bulk tanks must be performed only by persons who have been specifically trained for this activity according to OSHA guidelines as described in OSHA 29 CFR Part 1910.146. Refer to section on storage tanks in the manual "Telone Soil Fumigant - A Guide to Application", a guide for products containing 1,3-Dichloropropane.

### USER SAFETY REQUIREMENTS

1. **Respirator Requirements:** When a respirator is required for use with this product, the following criteria must be met: (a) Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner; (b) Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134); (c) Respirator users must be trained using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134); (d) Respirator users must be examined by a qualified medical practitioner to ensure physical ability to safely wear the style of respirator to be worn.
2. **Never Fumigate Alone:** It is imperative to always have an assistant and proper protective equipment in case of accidents.
3. **Drivers' 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.
4. **Dispose of Contaminated Clothing:** Discard clothing and other absorbent materials that have been drenched or heavily contaminated with liquid from this product. Do not reuse them.
5. **Clean and Maintain PPE:** Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Wash PPE after each day's use.
6. **Contact With Mouth:** Never siphon this product by mouth or use mouth to blow out clogged lines, nozzles, etc.
7. **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 on clothing. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.



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### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters. See "Storage, Shipment and Disposal" section. In case of spills, properly dispose of contaminated materials.

**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.
- Do not mix or allow coming in contact with oxidizing agent. A chemical reaction hazard may occur.
- Handle carefully! Do not drop or let container be impacted by heavy objects. An explosion hazard may occur.

### ENGINEERING CONTROLS REQUIREMENTS

**MECHANICAL TRANSFER SYSTEM:** Personal protective equipment specified for "Direct Contact Activities" must be worn by the operator of the mechanical transfer system. The operator of the mechanical transfer system must follow instructions on proper operation of the system found in the manual "Telone Soil Fumigant - A Guide to Application", a guide for products containing 1,3-Dichloropropene. Contact your product distributor for more information or for these materials.

**END-ROW SPILLAGE CONTROL:** 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. The applicator must follow instructions on proper operation and maintenance of the system found in the manual "Telone Soil Fumigant - A Guide to Application", a guide for products containing 1,3-Dichloropropene. Contact your product distributor for more information or these materials. (1) 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. (2) Check valves must be replaced immediately if continuous drip occurs. (3) Place check valves above the orifice. (4) Isolate the check valve from upstream pressure by installing a main line shut off or bypass valve prior to the manifold. (5) Do not exceed 1/4 inch diameter tubing. (6) Do not use any method of end-row spillage control other than that stated on this label. (7) An alternative to shutoff devices is a purge system which clears the line of all liquid. Consult your product representative for purge system description.

**WITH ALL BULK AND MINI-BULK CONTAINERS:** This product must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid product.

1. All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
2. External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
3. The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
4. Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of this product 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.
5. The pressure in hoses used to move this product beyond a pump must not exceed the manufacturer's maximum pressure specification.

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**DIRECTIONS FOR USE**

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN ANY MANNER INCONSISTENT WITH ITS LABELING. DO NOT APPLY THIS PRODUCT IN A WAY THAT WILL CONTACT WORKERS OR OTHER PERSONS, EITHER DIRECTLY OR THROUGH DRIFT. ONLY PROTECTED HANDLERS MAY BE IN THE AREA DURING APPLICATION. FOR ANY REQUIREMENTS SPECIFIC TO YOUR STATE OR TRIBE, CONSULT THE AGENCY RESPONSIBLE FOR PESTICIDE REGULATION.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label 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).

**ENTRY RESTRICTION:** Entry (including early entry that would otherwise be permitted under the WPS) by any person—other than a correctly trained and equipped handler who is performing a handling task permitted on this labeling—is prohibited from the start of application until 5 days after application. In addition, if tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

**NOTIFICATION:** Notify workers of the application by warning them orally and by posting fumigant warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state: (1) "DANGER/PELIGRO" (2) "Areas under fumigation", "DO NOT ENTER/NO ENTRE" (3) the date and time of fumigation, (4) "1,3-Dichloropropene and Chloropicrin fumigants in use," and (5) name, address, and telephone number of the applicator. Post the fumigant warning 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.

**PPE FOR REENTRY 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.

**READ ALL DIRECTIONS FOR USE CAREFULLY BEFORE APPLYING.**

**NOTICE:** READ THE ENTIRE LABEL AND LABEL BOOKLET. USE ONLY ACCORDING TO LABEL AND LABEL BOOKLET DIRECTIONS. BEFORE BUYING OR USING THIS PRODUCT, READ "WARRANTY DISCLAIMER" AND LIMITATION OF REMEDIES."

**GENERAL INFORMATION**

This product is a multi-purpose liquid fumigant for preplant treatment of soil to control nematodes, symphylans, wireworms and certain soil borne diseases in cropland. This product, a soil fungicide and nematicide, may be applied as a preplant soil treatment to control or to aid in

reducing the damaging effects of certain soil borne diseases, such as potato scab (caused by *Streptomyces scabies*), soil rot (soil pox) of sweet potatoes, Granville (bacterial) wilt, black root rot and black shank diseases of tobacco; *Verticillium* wilt of mint, pink root of onions, and pod rot of peanuts. This product also controls plant parasitic nematodes, such as root-knot, root lesion, citrus, cyst formers (golden, sugar beet, soybean), burrowing, lance, reniform, ring, spiral, sting, pin, stubby root, stylet, dagger and certain others, as well as symphylans (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 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 THIS PRODUCT MUST BE CONDUCTED ONLY ACCORDING TO DIRECTIONS AND CONDITIONS OF USE DESCRIBED IN THIS LABELING.

Do not apply within 100 feet of any well used for potable water. Do not apply in areas overlying karst geology. 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 PIC-CLOR 60 IN CERTAIN FLORIDA COUNTIES**

**NOTE:** Additional use restrictions listed below apply to the following Florida counties: Brevard, Broward, Charlotte, Citrus, Collier, Dade, 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. For all other Florida counties, follow the label affixed to the product container for PIC-CLOR 60.

**ADDITIONAL USE RESTRICTIONS**

- Use PIC-CLOR 60 only on soils that have a relatively shallow hard pan or soil layer restrictive to downward water movement (such as spodic horizon) within six feet of the ground surface and are capable of supporting seepage irrigation regardless of irrigation method employed.
- Use standard chisel injection equipment to inject PIC-CLOR 60 as deep as possible without placing the fumigant directly into the shallow subsurface irrigation water.
- PIC-CLOR 60 may not be applied within 100 feet of drinking water wells.

**RECONTAMINATION PREVENTION**

This product will control 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 tare soil in treated fields and soil contamination from equipment or crop remains. Clean equipment carefully before entering treated fields.

DO NOT USE CONTAINERS, PUMPS OR OTHER TRANSFER EQUIPMENT MADE OF ALUMINUM, MAGNESIUM OR THEIR ALLOYS, AS UNDER CERTAIN CONDITIONS 1,3-DICHLOROPROPENE MAY BE SEVERELY CORROSIVE TO SUCH METALS.

**EQUIPMENT CLEAN-UP**

Because 1,3-dichloropropene 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 product into surface or underground water supplies.

**CHEMIGATION**

DO NOT APPLY PIC-CLOR 60 THROUGH ANY TYPE OF IRRIGATION SYSTEM.

**FERTILITY INTERACTIONS**

Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertilizer and fumigant are applied to soils that are either cold, wet, acid, or high in organic matter. To avoid injury to certain crops including red beets, carrots, corn, radishes, cole crops, legumes (beans), lettuce, onions, and sugar beets, fertilize 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. Use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65 degrees F. In mineral soils, do not apply more than 2/3 of the nitrogen requirements from fertilizers containing ammonium salts until the crop is well established and the soil temperature is above 65 degrees F.

When using high rates of this product 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.

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## APPLICATION DIRECTIONS

### APPLICATION TIMING

This product can be applied 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 best results.

Because this product does not provide residual control of soil pests, it should be used as a preplant application before planting each crop. The following soil temperature and moisture conditions should exist at time of treatment. Failure to meet these conditions may result in unsatisfactory product performance.

### SOIL CONDITIONS

**Soil temperature** at the depth of application must be between 40 degrees F and 80 degrees F. In areas where the soil temperature in the Spring may not reach 40 degrees F in time to allow application of this product prior to planting, late summer or early fall treatment is recommended.

**Soil moisture:** It is critical to manage soil moisture properly before fumigation. Plan fumigation for seasons, crop rotations, or irrigation schedules which leave moisture in the soil. For application depths greater than 18 inches, the soil should be moist within a 16-inch radius upwards from the point of injection as determined by the feel method (see below). For all other applications, the soil must be moist from two inches below the soil surface to at least 12 inches deep. The amount of moisture needed in this zone will vary according to soil type. The surface soil generally dries very rapidly and should not be considered in this determination. If there is insufficient moisture at the two to six inch depth, the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below six inches, it may be brought to the surface by disking or plowing before or during the injection. To conserve existing soil moisture, pretreatment or treatment tillage practices should be done as close to the time of application as possible. 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 you do not know how to determine the soil moisture content of the area to be treated, consult your local extension service or soil conservation service specialist or pest control advisor (Ag Consultant) for assistance.

In general, no irrigation should immediately precede subsoiling or fumigation; however, when irrigation is available and surface soil moisture conditions are not likely to provide an adequate seal against fumigant loss, a very light sprinkler irrigation to wet the top 1 to 2 inches of soil may be used to bring soil moisture content to the desired level.

The following descriptions will aid in determining acceptable soil moisture conditions by the "feel method". For coarse soils (sand and loamy sand), there must be enough moisture to allow

formation of a weak ball when compressed in the hand. Due to soil texture, this ball is easily broken with little disturbance. In loamy, moderately coarse, or medium textured soils (coarse sandy loam, sandy loam, and fine sandy loam), a soil sample with the proper moisture content can be formed into a ball which holds together with moderate disturbance, but does not stick between the thumb and forefinger. Fine textured soils (clay loam, silty clay loam, sandy clay, silty clay, sandy clay loam and clay), should be pliable and not crumbly, but should not form a ribbon when compressed between the thumb and forefinger.

**SOIL PREPARATION**

The soil should be free of clods. Large clods can prevent effective soil sealing and reduce effectiveness of this product. Plant residues should be thoroughly incorporated into the soil prior to treatment to avoid interfering with application. Undecomposed plant material may harbor pests that will not be controlled by fumigation. Little or no crop residue should be present on the soil surface. Crop residue that is present should lie flat to permit the soil to be sealed effectively. Compacted soil layers within the desired treatment zone should be fractured before or during application of the fumigant. Deviation from the above conditions may result in unsatisfactory results.

**PLACEMENT OF FUMIGANT**

This product may be applied as either a broadcast (overall) or row treatment. It must be placed at least 12 inches below the final soil surface. When soil conditions allow, placement a minimum of 14 inches below the final soil surface is recommended. Deeper placement is recommended when fumigating soil to be planted to deep-rooted plants, such as perennial fruit and nut crops, or to control deeply distributed pests. For row application, the fumigant must be placed at least 12 inches from the nearest soil/air interface (e.g. furrow).

**BUFFER ZONE**

An application of this product 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:** This product shall not be applied to soils more frequently than once each year.

**APPLICATION METHODS AND EQUIPMENT**

**BROADCAST APPLICATION**

Use chisel (shank), 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 as described under "Soil Preparation". Choose application equipment which allows the deepest application and best soil seal under existing conditions. The fumigant outlet spacing varies with the type of application equipment used:

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- With chisel equipment a fumigant shank spacing of 12 to 24 inches is recommended. 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. The maximum outlet spacing should not exceed 24 inches.
- 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.

### **ROW APPLICATION**

(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. In general, when one chisel is used, apply product at twice the flow rates given in Table 1. When multiple chisels per plant row are used, space the chisels (fumigant outlets) 8 to 12 inches apart and use the flow rates given in Table 1 per outlet (see footnote 1, Table 2). Regardless of the number or spacing of chisels used, the fumigant must be placed at least 12 inches from the nearest soil/air interface (e.g. furrow). With certain deeper rooted crops such as potatoes and sugar beets, higher flow rates may be necessary to ensure adequate treatment of the zone of soil where primary root growth occurs; however, **in no case should the amount of fumigant applied per acre exceed the maximum gallons per acre rates given in Table 1.** To determine the amount (gallons) of product required per acre for various plant row spacings and flow rates, refer to Table 2. Note that as the distance between the plant rows increases the amount of fumigant required decreases and vice versa.

To prevent seed germination problems caused by improper seed-to-soil contact or improper seeding 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.

### **SEALING THE SOIL AFTER APPLICATION**

Immediately after chisel application of this product, the soil must be "sealed" to prevent fumigant loss and ensure that an effective concentration of fumigant is maintained within the soil for a period of several days.

- For Broadcast Treatment (flat fumigation) sealing can be accomplished with equipment that will uniformly mix the soil to a depth of 3 to 4 inches to effectively eliminate chisel or plow traces which can allow direct escape of the fumigant. A tandem disc or similar equipment may be used for this purpose. To maximize sealing, steps should also be taken to compact the soil surface to further retard the rate of fumigant loss by following with a ring roller, cultipacker or roller in combination with tillage equipment. Compaction of the soil surface alone does not effectively disrupt chisel or plow traces.
- For Row Treatment forming the beds at the time of application should be accomplished in a manner that places the fumigant at least 12 inches from the nearest soil/air interface (e.g. furrow). The closest soil/air interface could be the furrow for multiple knife applications or the top of the bed for single knife applications. Row treatments into preformed beds must be sealed by disrupting the chisel trace using press sealers, ring rollers or by reforming the beds and following with such equipment.



- Sealing can also be improved by applying non-perforated plastic film, such as polyethylene, over the entire area or in strips. Use of a film to seal the soil surface does not eliminate the need to eliminate chisel traces prior to application of the plastic film unless simultaneous application and tarp laying by the same piece of equipment occurs and the tarp is a minimum of 1 mil thick.
- Proper soil conditions at the time of application (see Soil Preparation section) are important to ensure proper placement of fumigant (see Placement of Fumigant section) and to obtain adequate sealing. Prior tillage should be adequate to eliminate clods and thoroughly mix crop residues into the soil.

**SOIL FUMIGATION INTERVAL**

- Leave the soil undisturbed and unplanted for at least 7 days after application of the fumigant. A longer undisturbed interval is required if the soil becomes cold or wet, and for deep-rooted tree, shrub and vine planting sites.
- After the fumigation interval, to prevent phytotoxicity, allow the fumigant to dissipate completely before planting the crop. Under optimum soil conditions for dissipation, 1 week for each 10 gallons/acre is recommended. 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 the odor of the product is no longer evident at the application depth. Seed may be used as a bioassay to determine if the product is present in the soil at concentrations sufficient to cause plant injury. Do not plant if the odor of the product is present within the zone of fumigation.

**USES**

This product is recommended for control of nematodes, symphylans, wireworms and certain soil-borne diseases in soils to be planted to vegetable crops, field crops, fruit and nut crops, and nursery crops.

<b>TABLE 1 PIC-CLOR 60</b>			
Broadcast Application Rates and Use Information for Control of Nematodes, Symphylans, Wireworms and Certain Soil-Borne Diseases in Soils Planted to Crops Listed			
Crop	Soil Type	Application Rates <sup>(a)</sup>	
		Broadcast Gallons/Acre	Fl. oz. per 1000' of Row/Outlet <sup>1</sup>
Vegetable Crops <sup>2</sup>	Mineral	19.5 to 31.5 <sup>3</sup>	57 to 90
	Muck or Peat	50.5 <sup>4</sup> to 55.0	145 to 159
Field Crops <sup>5</sup>	Mineral	19.5 to 31.5	57 to 90
	Muck or Peat	39.5	114
Fruit and Nut Crops <sup>6</sup>	Mineral, Muck, or Peat	59.5 to 77.0	172 to 222
Nursery Crops <sup>7</sup>	Mineral, Muck, or Peat	92.5 to 121.5	267 to 350

(a) Do not exceed specified maximum application rates.

1 Flow rates are based on 12-inch outlet spacing. Flow rates for alternate spacings can be calculated using the following formula: fl oz/1000 ft of row/outlet = 0.245 x rate in gallons/acre x outlet spacing in inches. For row treatment refer to Table 2.

2 Row treatment is not recommended for potatoes in irrigated areas of western and northwestern states.

3 For cyst-forming nematodes, increase dosage to 39 gallons per acre (114 fl oz/1000 ft row per chisel).

4 For muck soils containing less than 30% organic matter, use 39 gallons/acre.

5 For mint, apply 49.5 gallons per acre.

6 For burrowing nematode in citrus, inject on 18-inch centers, 12 inches deep. Keep free of plants susceptible to burrowing nematodes for 2 years before replanting to citrus.

Note: To control symphylans (garden centipedes), use only overall at 38.5 or more gallons per acre and apply during late Summer or early Fall when the soil is warm.

To control wireworms, use dosages recommended for nematodes in overall or broadcast treatments. For wireworm control in soils to be planted to potatoes in Idaho, Nevada, Oregon, Utah, and Washington, refer to footnote 2, above.

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**TABLE 2**

**Rate Conversion Chart for Various Row Spacings and Fumigant Flow Rates<sup>1</sup>**

**Note:** In no case should the amount of fumigant applied per acre exceed the gallons per acre rates for broadcast treatment given in Table 1.

Fl. Oz./ 1000' of Row	Plant Row Spacing (Inches)								
	28	32	36	40	44	48	52	56	60
	Gallons Per Acre								
52	7.6	6.6	5.9	5.3	4.8	4.4	4.1	3.8	3.5
60	8.8	7.7	6.8	6.1	5.6	5.1	4.7	4.4	4.1
68	9.9	8.7	7.7	6.9	6.3	5.8	5.3	4.9	4.6
76	11.1	9.7	8.6	7.8	7.0	6.5	6.0	5.5	5.2
84	12.3	10.7	9.5	8.6	7.8	7.1	6.6	6.1	5.7
92	13.4	11.7	10.4	9.4	8.5	7.8	7.2	6.7	6.3
100	14.6	12.8	11.3	10.2	9.3	8.5	7.8	7.3	6.8
108	15.8	13.8	12.2	11.0	10.2	9.2	8.5	7.9	7.3
116	16.9	14.8	13.2	11.8	10.8	9.9	9.1	8.5	7.9
124	18.1	15.8	14.1	12.7	11.5	10.5	9.7	9.0	8.4
132	19.3	16.8	15.0	13.5	12.2	11.2	10.4	9.6	9.0
140	20.4	17.9	15.9	14.3	13.0	11.9	11.0	10.2	9.5
148	21.6	18.9	16.8	15.1	13.7	12.6	11.6	10.8	10.1
156	22.8	19.9	17.7	15.9	14.5	13.3	12.2	11.4	10.6
164	23.9	20.9	18.6	16.7	15.2	13.9	12.9	11.9	11.2
172	25.1	21.9	19.5	17.6	16.0	14.6	13.5	12.5	11.7
180	26.3	23.0	20.4	18.4	16.7	15.3	14.1	13.1	12.2
188	27.4	24.0	21.3	19.2	17.4	16.0	14.8	13.7	12.8
196	28.6	25.0	22.2	20.0	18.2	16.7	15.4	14.3	13.3
204	29.8	26.0	23.1	20.8	18.9	17.4	16.0	14.9	13.9
212	30.9	27.0	24.0	21.6	19.7	18.0	16.6	15.4	14.4

<sup>1</sup>For row spacing of 24 inches or less, apply as a broadcast treatment. For treatments with row spacing greater than 24 inches, refer to Table 1 for the rate needed for a specific crop and/or soil texture. To determine gallons per acre for row treatments, double the flow rate in Table 1 and look up the corresponding gallons per acre in Table 2.

For single chisel applications: the flow rates are double those listed in Table 1. For example, for vegetable crops in mineral soil, the flow rate for a single chisel row treatment is 114 to 180 fl oz per 1000 ft of row (note the broadcast rate is 57 to 90 fl oz per 1000 ft of row).

For multiple chisel applications: use the flow rate given in Table 1 per outlet. For example, for vegetable crops in mineral soil using 2 chisels per row, the flow rate per outlet is 57 to 90 fl oz per 1000 ft of row per outlet.

To obtain the gallons per acre used for a row spacing not shown in this table, use the following equation:

$$\frac{\text{Fl. oz./1000 ft. of row} \times 4.08^a}{\text{row spacing (inches)}} = \text{gallons per acre}$$

$$^a 4.08 = \frac{12 \text{ inches} \times 43.56 \text{ (no. 1000 ft./acre)}}{128 \text{ (fl. oz. per gallon)}}$$

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in tightly-closed original container in a cool place away from dwellings. Do not allow contamination of seeds, plants, fertilizers, or other pesticide chemicals. Do not contaminate food, feed stuffs, drugs, or domestic water supplies.

**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 1,3-dichloropropene 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 product into surface or underground water supplies.

**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.

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

**WARRANTY DISCLAIMER**

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. **SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

**INHERENT RISKS OF USE:** It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.) abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of the seller. To the extent consistent with applicable law, all such risks shall be assumed by buyer.

**LIMITATION OF REMEDIES:** To the extent consistent with applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at the company's election, one of the following: (1) Refund of purchase price paid by buyer or user for product bought, or (2) Replacement of amount of product used. To the extent consistent with applicable law, the company shall not be liable for losses or damages resulting from handling or use of this product unless the company is promptly notified of such loss or damage in writing. To the extent consistent with applicable law, the company shall not be liable for consequential or incidental damages or losses. The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of the company or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.