



Reg # 11220-20

PM-22

File  
19/13

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

DEC 16 1994

TOM DUAFALA  
TRICAL, INC.  
P.O. BOX 1327  
HOLLISTER, CA. 95024

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 6/20/94 in Response to PR Notice 93-7  
EPA Reg. No. 11220-20  
TRI-FORM 15

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

**WHAT THIS ACCEPTANCE MEANS:**

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

**WHAT YOU NEED TO DO NEXT:**

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that  
contains at least 50% recycled fiber

2913

Page 2

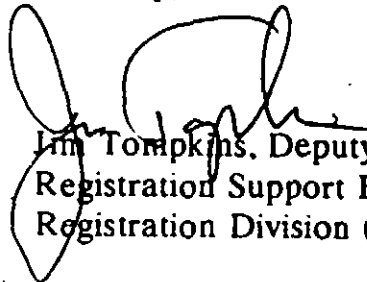
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs (7505C)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief  
Registration Support Branch  
Registration Division (7505W)

Attachment

3 of 13

Tom Duafala Ph.D.  
Trical

Comments for: EPA REG. NO. 11220-15, 20,21  
TRI-FORM 40/60, TRI-FORM 15, TRI-FORM 30

The following specific comments pertain to your WPS labeling submission concerning the product cited above:

In section 1 under PERSONAL PROTECTIVE EQUIPMENT delete "Application or soil-sealing outside an enclosed cab" Add the Personal Protective Equipment section for "Applicators Outside an Enclosed Cab" on page 5 of 11 of PR Notice 93-7 Supplement 4-E.

In section 1 under PERSONAL PROTECTIVE EQUIPMENT change "Applicators and other handlers performing direct contact tasks must wear" to "Handlers performing direct contact tasks must wear:"

In section 1 under PERSONAL PROTECTIVE EQUIPMENT change "Any other handling tasks not otherwise listed in (2), (3), or (4) below" to "Any other handling tasks not otherwise listed in (2), (3), (4) or (5) below"

Add the following to the end of the PPE section for "Handlers Exposed to High Concentrations":

NOTE: In-tank cleaning of bulk tanks shall be performed only by persons who have been specifically trained for this activity. refer to OSHA 29 CFR 1910.146 and the Telone ~~Users~~ *Application* Guide, section on storage tanks.

ADD "EVAL" after barrier laminate in the chemical-resistant glove statements.

4913

**RESTRICTED USE PESTICIDE**  
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.

# TRI-FORM 15

A LIQUID SOIL FUMIGANT  
FOR PREPLANT TREATMENT OF CROP LANDS TO CONTROL PLANT PARASITIC NEMATODES AND CERTAIN OTHER SOIL PESTS. NOT FOR USE IN GREENHOUSES OR OTHER ENCLOSED AREAS.

ACCEPTED  
with COMMENTS  
in EPA Letter Dated


DEC 16 1994

ACTIVE INGREDIENTS:	
1,3-Dichloropropene	78.9%
Chloropicrin	14.5%
INERT INGREDIENTS:	6.6%
TOTAL	100.0%

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 11220-20

Contains 9.3 pounds of 1,3-Dichloropropene and 1.7 pounds of chloropicrin per gallon.

**KEEP OUT OF REACH OF CHILDREN**

**DANGER**  **PELIGRO**

**POISON**

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

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

**FIRST AID**

**IF INHALED:** Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

**IF ON SKIN:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. If water is not immediately available, remove excess chemical from skin with adsorbent material such as towel or dry soil, then proceed at once to a location where water is available and thoroughly wash contaminated skin with plenty of water. Call a physician.

**IF IN EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**IF SWALLOWED:** Do not induce vomiting. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.

**NOTE TO PHYSICIAN:** Because rapid absorption may occur through lungs if product is aspirated and causes 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.

See Side Panel For Additional Precautionary Statements.

# TRICAL

P.O. Box 1327, Hollister CA 95024

E.P.A. EST. 11220-CA-1,2,3,4; FL-1  
E.P.A. REG. NO. 11220-20

NET CONTENTS . . . . . LBS.

**PRECAUTIONARY STATEMENTS  
HAZARD TO HUMANS  
AND DOMESTIC ANIMALS:  
DANGER  
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-STRIKEN. 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>). The air concentration level is measured by a direct reading detection device, such as a Matheson-Kitagawa, Draeger, 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 of 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). Leather, canvas, or cotton materials offer no protection from this product and must not be worn when contact with this product is possible.

(1) **Handlers Performing Direct-Contact Tasks:** Direct-contact tasks are tasks performed outdoors or in a well-ventilated area. They include:

- equipment calibration or adjustment
- equipment cleanup and repair
- product sampling
- application or soil-sealing outside an enclosed cab
- any activity less than 6 feet from an unshaded pressurized hose containing the product.
- removal of tarp or plastic film
- rinsate disposal
- fumigant transfer
- cleanup of small spills
- preparing containers for aeration
- any other handling task not otherwise listed in (2), (3), or (4) below

Applicators and other handlers performing direct-contact tasks must wear:

- Coveralls over short-sleeved shirt and short pants,
- Chemical-resistant gloves, such as barrier laminate or viton,
- Chemical-resistant footwear plus socks,
- Chemical-resistant headgear for overhead exposure,
- Chemical-resistant apron,
- 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 the label.

(2) **Handlers In Enclosed Cabs:** Applicators and other handlers in enclosed cabs must wear:

- Coveralls,
- Shoes and socks,
- Plus, if odor or irritation from this product can be detected inside the enclosed cab or if the air concentration level of chloropicrin exceeds 0.1 ppm inside the enclosed cab, handlers in the cab 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 the label.
- In addition, the PPE specified in (1) for direct-contact activities must be immediately available in the enclosed cab and must be worn if the handler leaves the enclosed cab to perform any direct-contact activity. The enclosed cab must meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides-40 CFR 170.240(d)(5).

(3) **Handlers In Treated Area Within 72 Hours After Application:** Only the following handler tasks may be performed in the treated area within 72 hours after the application is complete:

- Assessing/adjusting the soil seal
- Assessing pest control, application technique, or application efficacy
- Sampling air or soil for the product

All other tasks are prohibited until the 72-hour period has expired. Unless in an enclosed cab as described in (2) above, handlers performing the above tasks in the treated area within 72 hours after application must wear:

- Coveralls,
- Chemical resistant gloves, such as barrier laminate or viton,
- Chemical-resistant footwear and socks,
- Plus, if odor or irritation from this product can be detected or 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 the label.

See Requirements Continued in Third Column

**Requirements, Continued:**

(4) **Handlers Exposed to High Concentrations:** Handlers exposed to high airborne concentrations of this product, such as cleanup following large spills, in tank cleaning of bulk tanks, and exposure to this product in poorly ventilated areas, must wear:

- Chemical resistant suit,
- Chemical resistant gloves, such as barrier laminate 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 the label.

**USER SAFETY REQUIREMENTS**

1. **Respirator Requirements:** When a respirator is required for use with this product, the following criteria must be met: (a). Full-face respirators must be worn. (b). Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner. (c). Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134). (d). Respirator users must be trained using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134) (e). 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 of this product. Do not reuse them.
5. **Clean and Maintain PPE:** Follow manufacturer's instructions for cleaning/maintaining PPE. If 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 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.

**EMERGENCY:** In case of an emergency endangering health or the environment involving this product, call the 24 Hour Emergency Phone Number (800) 424-9300.

**STORAGE, SHIPMENT AND DISPOSAL**

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

**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.

**DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide and rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance. Because 1,3-dichloropropane 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.

**METAL CONTAINER DISPOSAL:** To dispose of container emptied during application operation, remove bungs, invert container in the field just treated and ensure that the container is free of liquid. Orient container such that ventilation of bung holes is not restricted. Allow containers to aerate for at least 14 days. Replace bungs prior to transport. After aeration, offer container to qualified recycler or dispose of as directed by State or local regulations.

**REFILLABLE CONTAINERS:** Contact the company and/or the company representative for directions on cleaning and handling refillable containers.

**BULK OR MINIBULK PRODUCT TRANSFERS:** Dry break or dry disconnect couplings are required for all product transfers involving bulk containers for products containing 1,3-dichloropropane as of September 30, 1993.

**ENVIRONMENTAL HAZARDS**

Do not contaminate water by cleaning of equipment or disposal of wastes. See "Storage, Shipment and Disposal" section. In case of spills, properly dispose of contaminated materials.

**Ground Water Advisory:** 1,3-dichloropropane is known to move through soil and under certain conditions has the potential to reach ground water as a result of agricultural use. Application in areas where soils are permeable and ground water is near the surface, or in karst geology, could result in ground water contamination.

**PHYSICAL OR CHEMICAL HAZARDS**

**FLAMMABLE:** Do not use, pour, spill, or store near heat or open flames. Do not cut or weld container.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**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 have available to him the manufacturer's written instructions for operation of the system and must read and understand (or have explained to him in detail) the proper operation and maintenance of the system.

**WITH ALL BULK AND MINI-BULK CONTAINERS:** 1,3-dichloropropene and 1,3-dichloropropene mixed with chloropicrin must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent handlers or other persons from coming in contact with liquid 1,3-dichloropropene, and/or chloropicrin.

1. All hoses, piping, and tanks used in connection with 1,3-dichloropropene and/or chloropicrin shall be 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 and 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 1,3-dichloropropene and/or chloropicrin 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 1,3-dichloropropene and/or chloropicrin beyond a pump must not exceed the manufacturer's maximum pressure specification.

**AGRICULTURAL USE REQUIREMENTS**

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

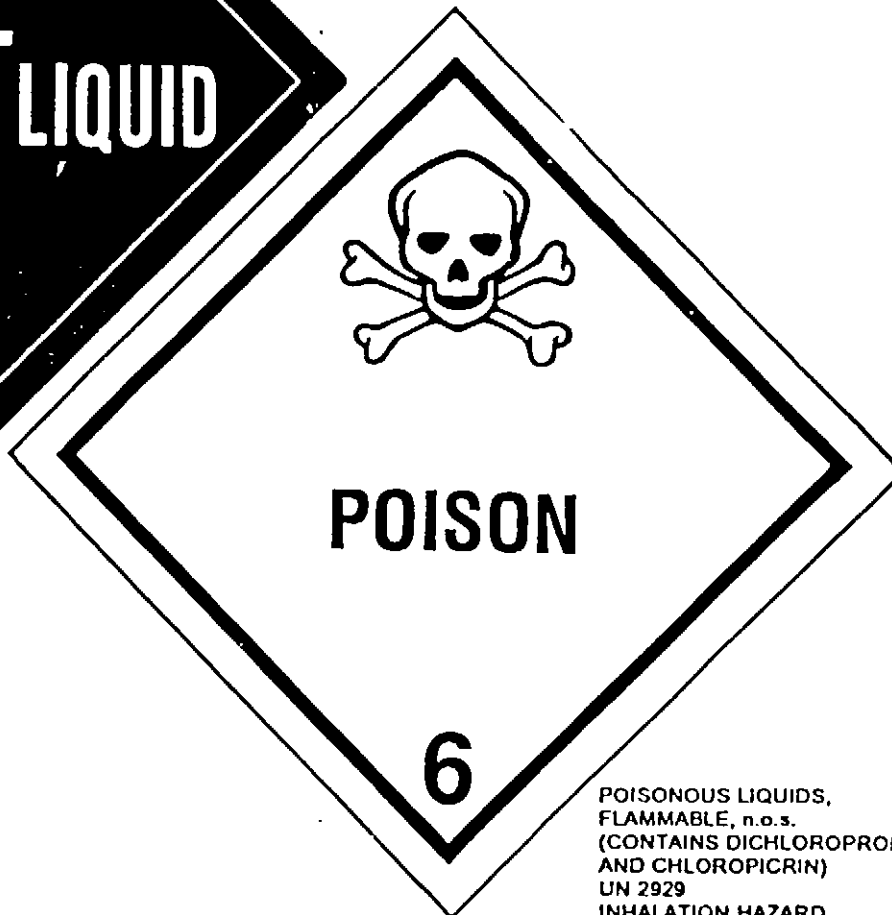
**WARRANTY DISCLAIMER**

**NOTICE:** 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 accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the rest of any such use.

**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 and label booklet instructions (including conditions noted on the label and label booklet, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, all of which are beyond the control of the company or the seller. All such risks shall be assumed by Buyer.

**LIMITATION OF REMEDIES:** 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. 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. In no case shall the company 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 statement 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.

CA April, 1994



POISONOUS LIQUIDS,  
FLAMMABLE, n.o.s.  
(CONTAINS DICHLOROPROPENE,  
AND CHLOROPICRIN)  
UN 2929  
INHALATION HAZARD

8 9 13  
y

**RESTRICTED USE PESTICIDE**  
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.

**LABEL BOOKLET**  
DIRECTIONS FOR USE INCLUDING STORAGE, SHIPMENT AND DISPOSAL; PRECAUTIONARY INFORMATION, INCLUDING REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT; ENGINEERING CONTROL AND REQUIREMENTS; AND AGRICULTURAL USE REQUIREMENTS.

# TRI-FORM 15

**A LIQUID SOIL FUMIGANT  
FOR PREPLANT TREATMENT OF CROP LANDS  
TO CONTROL PLANT PARASITIC NEMATODES  
AND CERTAIN OTHER SOIL PESTS.  
NOT FOR USE IN GREENHOUSES OR OTHER ENCLOSED AREAS.**

<b>ACTIVE INGREDIENTS:</b>	
1,3-Dichloropropene	78.9%
Chloropicrin	14.5%
<b>INERT INGREDIENTS:</b>	<u>6.6%</u>
<b>TOTAL</b>	<b>100.0%</b>

Contains 9.3 pounds of 1,3-Dichloropropene and 1.7 pounds of chloropicrin per gallon.


## TRICAL

P.O. Box 1327, Hollister CA 95024

E.P.A. EST. 11220-CA-1,2,3,4; FL-1  
E.P.A. REG. NO. 11220-20

NET CONTENTS ..... LBS.

**KEEP OUT OF REACH OF CHILDREN**

**DANGER**  **PELIGRO**

**POISON**

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

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

**FIRST AID**

**IF INHALED:** Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

**IF ON SKIN:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. If water is not immediately available, remove excess chemical from skin with adsorbent material such as towel or dry soil, then proceed at once to a location where water is available and thoroughly wash contaminated skin with plenty of water. Call a physician.

**IF IN EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**IF SWALLOWED:** Do not induce vomiting. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.

**NOTE TO PHYSICIAN:** Because rapid absorption may occur through lungs if product is aspirated and causes 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.

See Side Panel For Additional Precautionary Statements.



**PRECAUTIONARY STATEMENTS  
HAZARD TO HUMANS  
AND DOMESTIC ANIMALS:  
DANGER  
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.
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- 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 BLINDLED AND PAIN-STRIKEN. 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>). The air concentration level is measured by a direct reading detection device, such as a Matheson-Klegawa, Draeger, 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 of 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). Leather, canvas, or cotton materials offer no protection from this product and must not be worn when contact with this product is possible.

(1) **Handlers Performing Direct-Contact Tasks:** Direct-contact tasks are tasks performed outdoors or in a well-ventilated area. They include:

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

Applicators and other handlers performing direct-contact tasks must wear:

- Coveralls over short-sleeved shirt and short pants,
- Chemical-resistant gloves, such as barrier laminate or viton,
- Chemical-resistant footwear plus socks,
- Chemical-resistant headgear for overhead exposure,
- Chemical-resistant apron,
- 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 the label.

(2) **Handlers In Enclosed Cabs:** Applicators and other handlers in enclosed cabs must wear:

- Coveralls,
- Shoes and socks,
- Plus, if odor or irritation from this product can be detected inside the enclosed cab or if the air concentration level of chloropicrin exceeds 0.1 ppm inside the enclosed cab, handlers in the cab 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 the label.
- In addition, the PPE specified in (1) for direct-contact activities must be immediately available in the enclosed cab and must be worn if the handler leaves the enclosed cab to perform any direct-contact activity. The enclosed cab must meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides-40 CFR 170.240(d)(5).

(3) **Handlers in Treated Area Within 72 Hours After Application:** Only the following handler tasks may be performed in the treated area within 72 hours after the application is complete:

- Assessing/adjusting the soil seal
- Assessing pest control, application technique, or application efficacy
- Sampling air or soil for this product

All other tasks are prohibited until the 72-hour period has expired. Unless in an enclosed cab as described in (2) above, handlers performing the above tasks in the treated area within 72 hours after application must wear:

- Coveralls,
- Chemical-resistant gloves, such as barrier laminate or viton,
- Chemical-resistant footwear and socks,
- Plus, if odor or irritation from this product can be detected or 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 the label.

See Requirements Continued in Third Column

**Requirements, Continued:**

(4) **Handlers Exposed to High Concentrations:** Handlers exposed to high airborne concentrations of this product, such as cleanup following large spills, in tank cleaning of bulk tanks, and exposure to this product in poorly ventilated areas, must wear:

- Chemical resistant suit,
- Chemical-resistant gloves, such as barrier laminate 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 the label.

**USER SAFETY REQUIREMENTS**

1. **Respirator Requirements:** When a respirator is required for use with this product, the following criteria must be met: (a). Full-face respirators must be worn. (b). Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner. (c). Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134). (d). Respirator users must be trained using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134). (e). 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 of this product. Do not reuse them.
5. **Clean and Maintain PPE:** Follow manufacturer's instructions for cleaning/maintaining PPE. If 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 inside. Then wash thoroughly and out 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.

**EMERGENCY:** In case of an emergency endangering health or the environment involving this product, call the 24 Hour Emergency Phone Number (800) 424-9300.

**STORAGE, SHIPMENT AND DISPOSAL**

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

**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.

**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 miscible 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.

**METAL CONTAINER DISPOSAL:** To dispose of container emptied during application operation, remove bungs, invert container in the field just treated and ensure that the container is free of liquid. Orient container such that ventilation of bung holes is not restricted. Allow containers to aerate for at least 14 days. Replace bungs prior to transport. After aeration, offer container to qualified reconditioner or dispose of as directed by State or local regulations.

**REFILLABLE CONTAINERS:** Contact the company and/or the company representative for directions on cleaning and handling refillable containers.

**BULK OR MINIBULK PRODUCT TRANSFERS:** Dry break or dry disconnect couplings are required for all product transfers involving bulk containers for products containing 1,3-dichloropropene as of September 30, 1993.

**ENVIRONMENTAL HAZARDS**

Do not contaminate water by cleaning of equipment or disposal of wastes. See "Storage, Shipment and Disposal" section. In case of spills, properly dispose of contaminated materials.

**Ground Water Advisory:** 1,3-dichloropropene is known to move through soil and under certain conditions has the potential to reach ground water as a result of agricultural use. Application in areas where soils are permeable and ground water is near the surface, or in local geology, could result in ground water contamination.

**PHYSICAL OR CHEMICAL HAZARDS**

**FLAMMABLE:** Do not use, pour, spill, or store near heat or open flames. Do not cut or weld container.

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7**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**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 have available to him the manufacturer's written instructions for operation of the system and must read and understand (or have explained to him in detail) the proper operation and maintenance of the system.

**WITH ALL BULK AND MINI-BULK CONTAINERS:** 1,3-dichloropropene and 1,3-dichloropropene mixed with chloropicrin must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent handlers or other persons from coming in contact with liquid 1,3-dichloropropene and/or chloropicrin.

1. All hoses, piping, and tanks used in connection with 1,3-dichloropropene and/or chloropicrin shall be 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 and 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 1,3-dichloropropene and/or chloropicrin 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 1,3-dichloropropene and/or chloropicrin beyond a pump must not exceed the manufacturer's maximum pressure specification.

**AGRICULTURAL USE REQUIREMENTS**

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

**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 the labeling—is **PROHIBITED** from the start of application until 72 hours 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 signs must bear the skull and crossbones symbol and state: (1) "DANGER/PELIGRO," (2) "Area under fumigation, DO NOT ENTER/NO ENTREE," (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 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 the labeling.

**WARRANTY DISCLAIMER**

**NOTICE:** 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 accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.

**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 and label booklet instructions (including conditions noted on the label and label booklet, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, all of which are beyond the control of the company or the seller. All such risks shall be assumed by Buyer.

**LIMITATION OF REMEDIES:** 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. 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. In no case shall the company 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 statement 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 the Limitation of Remedies in any manner.

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## 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.

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 should be conducted only according to directions and conditions of use described in this labeling.

### FORMULATOR USE OF 1,3-DICHLOROPROPENE:

Labeling for end use products containing 1,3-dichloropropene that are prepared and sold by formulators must comply with all precautionary statements, use precautions, environmental hazards, handling and protective equipment requirements, maximum application rates and other exposure mitigation measures specified in this product labeling.

### 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 bare soil in treated fields and soil contamination from equipment or crop remains. Clean equipment carefully before entering treated fields.

### BULK TRANSFERS:

Dry break or dry disconnect couplings are required for all product transfers involving bulk containers for 1,3-dichloropropene as of September 30, 1993.

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 or fuel 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 1,3-dichloropropene 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, fertize 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 the 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, it is suggested that additional phosphate fertilizer (if not applied) is recommended where experience indicates a deficiency may occur.

## 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 throughout the desired treatment zone should be at or near the permanent wilting point to allow optimum dispersion of the fumigant, which moves as a gas through the soil air spaces. The permanent wilting point varies with soil texture and organic matter content. 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 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 useful.

**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 10 inches below the final soil surface. When soil conditions allow, placement a minimum of 12 inches below the final soil surface is recommended. Deeper placement is recommended when fumigating soil to be planted in deep-rooted plants, such as perennial fruit and nut crops, or to control deeply distributed pests.

## APPLICATION METHODS AND EQUIPMENT

**BROADCAST APPLICATION:** Use chisel (shank), Noble (sweep) plow or plow-sole application equipment. For best results when using chisel equipment, use ripper-type, forward-sweep shanks. Noble 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. 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 Noble (sweep) plow equipment use an outlet spacing of 9-12 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:** Use chisel equipment to treat a band of soil where the crop is to be planted, i.e. the plant row. One or two chisels per plant row is recommended. In general, when one chisel is used, apply product at the flow rates given. When two chisels per plant row are used, space the chisels (fumigant outlets) 8 to 12 inches apart and divide the flow rates equally between the two outlets. Regardless of the number of chisels used, the amount of fumigant applied per 1000 feet of plant row should remain the same. 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 gallons per acre rates for broadcast treatment.

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APPLICATION METHODS AND EQUIPMENT (Continued):

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 the product, the soil should 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 may give the appearance of adequate sealing without effectively disrupting 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. 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 should 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 trees, 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. For fruit, nut, and nursery crops at least three months should elapse between treatment and planting. 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.

APPROVED USES

Use TRI-FORM 15 only as a preplant treatment to control NEMATODES such as meadow (lesion), root knot, citrus, burrowing, ring, spiral, sting, stubby root, stylet dagger and cyst formers (golden and sugar beet), also wireworms, garden centipedes, (symphylans) in land to be planted to vegetables such as beans, beets, carrots, celery, cole crops (cauliflower, cabbage, etc.), corn, cucurbits (cucumbers, melons, etc.) lettuce, onions, parsnips, peas, peppers, spinach, sweet potatoes, white potatoes, tomatoes, turnips, and field crops such as cotton, peanuts, sugar beets, mint and tobacco, and other high value crops such as floral crops, pineapple, strawberries, citrus and deciduous orchard planting sites, ornamentals and forest nursery crops. For best results with annual crops, treat soil each year. Do not use on extremely heavy clay soil.

**DISEASE:** For the control of black shank, black root rot, and Granville wilt in tobacco use 8.5 to 10.5 gallons per acre in the row (42" apart) and for broadcast treatment use 15 to 20 gallons per acre. NOTE: For soil borne disease control in tobacco, do not apply more than 20 gallons of product per acre.

For the control of soil rot (soil pox) in sweet potatoes use 8.5 to 10.5 gallons per acre in row treatment where rows are 42" apart and 24 to 27.5 gallons per acre broadcast treatment.

For the control of *Verticillium wilt* of white potatoes, mint and *Pyrenochaeta terrestris* (pink root of onions) use 24 to 27.5 gallons per acre broadcast treatment.

As an aid in controlling peanut pod rot disease, apply 2.5 to 5 gallons per acre.

APPLICATION RATES  
TRI-FORM 15

Crop	Type of Treatment	Soil Type	Gallons Per Acre <sup>1</sup>
<b>Shallow Rooted Plants:</b>			
Field Crops	Row (42")	Mineral	5.1 to 6.9
Floral Crops		Muck or Peat	10.3 to 13.7
Grasses and Turf	Over-all (broadcast)	Mineral	10.3 to 17.1
Small Fruits		Muck or Peat	27.4 to 41.1
Vegetables		Mineral	27.4 to 41.1
Ornamentals	Over-all	Mineral	27.4 to 41.1
Strawberries	Over-all	Mineral	27.4 to 41.1
<b>Sugar Beets</b>			
Root-Knot Nematode	Row (42")	Sandy or Sandy Loam	12.8 to 21.4
	Over-all	Sandy or Sandy Loam	12.8 to 21.4
<b>Sugar Beet Nematode</b>			
	Row (42")	Sandy or Sandy Loam	12.8 to 21.4
	Over-all	Sandy or Sandy Loam	12.8 to 21.4
Pineapple	Row	Mineral	25.7 to 51.4
Citrus-Florida	Over-all	Sandy	34.3
<b>Nursery and Field:</b>			
		Over-all	
		Gallons Per Acre To Penetrate Various Depths	
Citrus Fruit Trees	Mineral Soils	3 ft 4 ft 5 ft 6 ft	
Deciduous Fruit Trees	Sand	17.1 23.9 30.8 37.6	
Forest Trees	Sandy Loam	30.8 34.2 41.1 54.7	
Grapes	Silt Loam	47.9 58.1 71.0 85.5	
Nut Trees	Clay Loam	61.6 78.7 95.0 118.3	
Ornamentals (deep rooted)			

<sup>1</sup> Use the higher rates in heavier soil.

NOTE: To control symphylans (garden centipedes) use only over-all (broadcast) at 21.4 more gallons per acre and apply during late summer or early fall when soil is warm. To control wireworms use dosages recommended for nematodes in overall or broadcast treatments.