

**RESTRICTED USE PESTICIDE  
DUE TO ACUTE TOXICITY**

*For retail sale to and use only by Certified Applicators of persons under their direct supervision, only for those uses covered by the Certified Applicator's certification*

# TERR-O-GAS® 45

## PREPLANT SOIL FUMIGANT

**ACTIVE INGREDIENTS:**

Methyl bromide .....	45%
Chloropicrin .....	55%
<b>TOTAL</b> .....	<b>100%</b>

*This product weighs 14.2 pounds per gallon.*

**KEEP OUT OF REACH OF CHILDREN  
POISON**

**DANGER  
PELIGRO**

*PRECAUCION AL USUARIO. Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido traducida ampliamente.*

**Statement of Practical Treatment**

- In all cases of overexposure, get medical attention immediately. Take person to a doctor or emergency treatment facility.
- IF INHALED:** Remove exposed person from contaminated area. Keep warm. Make sure person can breathe freely. If breathing has stopped, give artificial respiration. Do not give anything by mouth to an unconscious person. If not unconscious, rinse mouth out with water.
  - IF ON SKIN:** Immediately remove contaminated clothing, shoes and any other item on skin. Wash contaminated skin area thoroughly with soap and water.
  - IF IN EYES:** Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes.

SEE REVERSE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

### STORAGE, HANDLING, AND DISPOSAL

**Storage and Handling** Store in a locked dry cool well ventilated area. Post as a pesticide storage area. Do not contaminate water, food or feed by storage. Store cylinders upright, secured to a rack or wall to prevent tipping. Containers should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured. Do not remove valve protection bonnet and safety cap until immediately before reuse. Replace safety cap and valve protection bonnet when cylinder is not in use. When cylinder is empty, close valve, screw safety cap on to valve outlet, and replace protection bonnet before returning to shipper. Only the registrant or his designee is authorized to refill cylinders. Do not use cylinders for any other purpose.

**Disposal** Pesticide wastes are toxic. Improper disposal of excess pesticide 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. Return empty cylinders freight collect to the Great Lakes Chemical Corporation location from which shipment was made. Return partial cylinders only after consulting Great Lakes Chemical Corporation for proper shipping instructions. In either case, use delivering carrier when possible.

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**SOIL FUMIGATION DIRECTIONS** Terr-O-Gas 45 may be used only for soil fumigation. The following precautionary procedures must be followed:

**PRECAUTIONARY STATEMENTS** The following precautions must be followed PRIOR to soil fumigation:

- A) Comply with all local regulations and ordinances. Obtain an application permit from agricultural regulatory agencies as required.
- B) Never fumigate alone. It is imperative to always have an assistant present and proper protective equipment available in case of accidents.
- C) Persons in charge of all operations must advise other workers of all safety precautions and procedures. In addition, they must instruct their helpers in the mechanical operation of the equipment.
- D) Handle this fumigant in the open with the operator upwind from the container where there is good ventilation.
- E) Check fumigant delivery system for leaks before beginning operation. Two trained persons must be present during introduction of the fumigant.
- F) When fumigating soil from a tractor, 5 gallons of water must be carried on the tractor and placed where it is readily accessible. In addition, water available on the tractor, at least 5 gallons of additional water must be available from the service truck. This water must be potable and in containers marked "Discontaminated water not to be used for drinking."
- G) All trash should be cleaned from the field before starting fumigation.

- A) **Wear all treated areas with warning signs until aeration is complete**
- B) **Two trained persons must be present during removal of the tarpaulin if used**
- C) **Keep all animals and unauthorized people away from area during removal of tarpaulin, if used**

**APPLICATION METHODS.** Terr-O Gas 45 is to be used only as a preplant soil fumigant

**A. Tarpaulin Methods for Field, Nursery, Turf, Greenhouse, and Seed or Transplant Bed Beds.**

**Pests controlled when present in soil at time of treatment**

**Plant-parasitic nematodes, including root-knot, root lesion (meadow) cyst, citrus burrowing, little root-knot, lance spiral ring, sting, stubby root, dagger, awl, sheath, to stunt (stipit).**

**Soil-borne disease causing organisms, including the fungi *Pythium*, *Rhizoctonia*, *Phytophthora*, *Pyrenochaeta*, *Sclerotinia*, *Sclerotium*, and *Fusarium* and the clubroot organism *Plasmodiophora***

**Weeds, including broadleaf weeds such as broomrape and lambsquarters and grasses such as barnyardgrass, annual bluegrass, torpedograss and quackgrass. Not effective against hard seed weeds such as mallow, dodder, morningglory and certain leguminous weeds**

**Insects, including wireworms, cutworms, grubs, rootworms, ants and garden symphlyans.**

**NOTE:** Fumigation may temporarily reduce nitrification in the soil thus increasing levels of ammoniacal nitrogen and soluble ammonium salts to potentially phytotoxic levels. Accumulation of ammonium is most likely to occur when maximum rates of fumigant and fertilizer are applied to soils that are acidic, wet, cold or high in organic matter. Apply only fertilizer containing at least 30% nitrate until the crop is well established and soil temperature is above 65°F. Then fertilize as indicated by soil test. Acid soils should be limed before fumigation to stimulate nitrification and to reduce possible ammonium toxicity.

**Pre-treatment Soil Preparation:** Plow or rip or otherwise till the soil to the depth to which effective fumigation is required. The soil should be worked until free of clods or large lumps. Residue from previous crops should be worked into the soil to allow for decomposition prior to fumigation. Soil moisture should be adequate for seed germination. Coarse textured soils can be fumigated with higher moisture content than fine textured soils. For best results, soil should be kept moist for at least four days prior to treatment. Do not fumigate if the soil temperature is below 50°F. For best results, fumigate when soil temperature is 60°F to 80°F at the depth of 6 inches.

**1. Overall Application:** Inject Terr-O Gas 45 with a chisel type applicator having the chisels spaced no more than 12 inches apart and injecting the fumigant to a depth of 6-8 inches below the soil surface. The soil surface must be covered with polyethylene film immediately after treatment with simultaneous film laying equipment or by sealing with a roller or compactor and covered within 20 minutes with polyethylene film or other suitable cover. Consult dosage rate table for proper rates of application and exposure periods. At the end of the exposure period, remove tarpaulins and aerate for two weeks before introducing transplants or vegetative plant parts. Crop seeds may be planted after 96 hours following end of exposure period.

**2. Row or Bed Application:** Apply the broadcast rate to the area actually treated, i.e. the area delineated by the film which. Consult the dosage rate table for treatment rates. Use one or more shanks per bed spaced not more than 12 inches apart, depending on the area to be treated. Inject the fumigant 6-8 inches below the surface of the bed and simultaneously cover with polyethylene film or other suitable cover. At the end of the exposure period, remove tarpaulins and aerate for two weeks before introducing transplants or vegetative plant parts. Crop seeds may be planted after 96 hours following the end of exposure period. Where polyethylene film is to be utilized as a mulch, aeration is accomplished by making holes in the film on spacings appropriate for the crop to be planted.

Special precautions must be taken in order that it is the responsibility of the individual supervising safety precautions are strictly observed. Before the supervisor of the fumigation job shall have conducted in the fumigation (includes use of safety of area not directly involved in the fumigation and in application).

Two persons trained in the use of this product must fumigant initiation of aeration, and after aeration do not need to be present if monitoring is conducted (fumigated). The concentration of methyl bromide as measured by a pump and appropriate detector (bromide) or 0.1 ppm (chloropicrin), no respiratory concentrations are exceeded at any time, all persons NIOSH/MSHA approved self-contained breathing supplied SCBA respirator or evacuate the area.

Application of Terr-O Gas 45 to greenhouse soils (see Section A 1 and A 2 above). Consult dosage and exposure periods. If a wind is blowing, all a previous injection site. Immediately after unqualified person wearing respiratory protective (E) with a halide detector. If excessive leaks are found by.

During this operation, all windows and doors should be ventilated. The greenhouse must be placarded with signs bearing in English and Spanish:

1. The signal word DANGER/PELIGRO and the:
2. The statement: Area under fumigation. DO NOT ENTER.
3. The date of fumigation.
4. Name of the fumigant used (i.e. Terr-O Gas 45).
5. Name, address and telephone number of the fumigator.

**Aeration and Recovery:** After fumigation, treated area with methyl bromide is below 5 ppm and chloropicrin is below 0.1 ppm, the treated area by any person before this time (NIOSH/MSHA) approved self-contained breathing supplied SCBA respirator and proper protective placards) until the treated area is aerated to below 5 ppm. Placards may be removed by the person's supervisor.

EPA REG  
EPA EST.

Treatment Site	TERR-O-GAS 45	Rate <sup>1</sup> & Method <sup>2</sup>	Exposure
<b>Field Soils to be Planted to:</b>			
Asparagus, broccoli, cauliflower, eggplants, lettuce, muskmelons, onions (dry bulb), peppers, pineapples, strawberries, tomatoes, Florida Citrus <sup>3</sup>		4.0 lb/500 sq ft	A
<b>Nursery and Greenhouse Soils, Seed and Transplant Beds and Turf</b>			
Non-food crops		4.0 lb/470 sq ft	A
Tobacco		1.2 lb/100 sq ft	A
Tomato (Greenhouse Crop)		4.00-5.70 lb/500 sq ft	A

<sup>1</sup>Use higher rates indicated for "muck and heavy clay soils"  
<sup>2</sup>Methods of Application is by injection with chisels plus covered with tarpaulin  
<sup>3</sup>May not bear harvestable fruit within 24 months

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**POISON**

**METHYL  
BROMIDE  
AND MORE THAN 2%  
CHLOROPICRIN  
MIXTURE, LIQUID  
NA1581**

**INHALATION  
HAZARD**

**6**

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
DANGER**

Extremely hazardous liquid and vapor under pressure. Do not breathe vapor. Inhalation may be fatal or cause serious acute illness or delayed lung or nervous system injury. Liquid or vapor can cause serious skin or eye injury which may have a delayed onset. Do not get liquid on skin, in eyes or on clothing.

This product contains chloropicrin which may be irritating to the upper respiratory tract and may cause painful irritation to the eyes producing watering. If these symptoms occur, leave the fumigation area immediately.

**NOTE TO PHYSICIAN:** Early symptoms of overexposure are dizziness, headache, nausea and vomiting, weakness and collapse. Lung edema may develop in 2 to 48 hours after exposure, accompanied by cardiac irregularities. These effects are the usual cause of death. Repeated overexposures can result in blurred vision, staggering gait and mental imbalance, with probable recovery after a period of no exposure. Blood bromide levels suggest the occurrence, but not the degree, of exposure. Treatment is symptomatic.

**PROTECTIVE CLOTHING:** Methyl bromide may be trapped inside clothing and cause skin injury. Wear loose, long trousers and long sleeved clothing and socks that are cleaned after each wearing. Do not wear jewelry, gloves or other gas containing apparel. If full face respiratory protection is not required, wear full face shield for eye protection when handling liquid. After exposure, immediately remove clothing, shoes and socks. Do not reuse contaminated clothing until thoroughly decontaminated. Drenched shoes cannot be adequately decontaminated.

**RESPIRATORY PROTECTION:** Under normal conditions of use, no respiratory protection will be required. Because there is a possibility of a spill or leak, the following spill and leak procedures must be understood and followed.

**STATEMENT OF WARRANTY AND LIABILITY**

**C** warrants that this product complies with the specifications expressed in this label. SELLER MAKES NO OTHER WARRANTIES AND DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE INTENDED PURPOSE. Seller's liability for default, breach, or failure under this label shall be limited to the amount of the purchase price. Seller shall have no liability for consequential damages.

Many pesticidal chemicals are poisonous and may leave a toxic residue on the plants to which they are applied. The U.S. Environmental Protection Agency has established maximum amounts of such pesticidal chemicals that may remain on raw agricultural products at harvest, and it is the user's responsibility to see that there is no residue on such crops at harvest in excess of these amounts. The

Directions for Use are based on the best available information and if followed carefully should not leave excessive residues at harvest. However, Great Lakes Chemical Corporation assumes no responsibility as to their accuracy nor for any loss due to excessive residues.

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