

RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

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.

Methyl Bromide 98%

A FUMIGANT FOR USE ONLY BY PROFESSIONAL FUMIGATORS

ACTIVE INGREDIENT:	
Methyl Bromide	98.0%
OTHER INGREDIENT:	
Chloropicrin	2.0%
TOTAL:	100.0%

This product weighs 14.4 pounds 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: Get exposed person to fresh air. Keep warm. Make sure person can breathe freely. If breathing has stopped, give artificial respiration. Give oxygen if needed. Do not give anything by mouth to an unconscious person. Seek medical attention.

IF ON SKIN: Immediately remove contaminated clothing, shoes, and other items covering the 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.

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 overexposure 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.

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS.



CARDINAL PROFESSIONAL PRODUCTS
P. O. Box 782 • Hollister • CA 95024

EPA Reg. No. 8536-19

EPA Est. 8536-CA-4
7747-CA-1
5785-CA-1

NET CONTENTS:.....LBS.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
AND DOMESTIC ANIMALS:
DANGER**

EXTREMELY HAZARDOUS LIQUID AND VAPOR UNDER PRESSURE. INHALATION MAY BE FATAL OR CAUSE SERIOUS ACUTE ILLNESS OR DELAYED LUNG OR NERVOUS SYSTEM INJURY. DO NOT BREATHE VAPORS. LIQUID OR EXCESSIVE 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 AS A WARNING ODORANT. CHLOROPICRIN MAY BE IRRITATING TO THE UPPER RESPIRATORY TRACT, AND EVEN AT LOW LEVELS CAN CAUSE PAINFUL IRRITATION TO THE EYES, PRODUCING TEARING. IF THESE SYMPTOMS OCCUR, LEAVE THE FUMIGATION AREA IMMEDIATELY.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for persons exposed to methyl bromide is **5 ppm** (20 mg/m³). The air concentration level is measured by a direct reading detection device, such as a Matheson-Kitagawa.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Loose-fitting or well ventilated long-sleeved shirt and long pants
- Shoes and socks
- Full-face shield or safety glasses with brow and temple shields when handling liquid product [DO NOT wear goggles.]
- When the acceptable air concentration level is above 5 ppm and a respirator is required, protect the eyes by wearing a full-face respirator.
- No respirator is required if the air concentration level of methyl bromide in the working area is measured to be less than 5 ppm.
- A respirator is required if the acceptable air concentration level of 5 ppm for methyl bromide is exceeded at any time. The respirator must be one of the following types: (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TC-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).

Under normal soil fumigation conditions, the air concentration level of methyl bromide in the working area will not generally exceed 5 ppm as a time-weighted average and no respiratory protection is required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

WORK SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Methyl bromide is heavier than air and can be trapped inside clothing and cause skin injury.
- If liquid fumigant splashes or spills on clothing, remove them at once, as fumes will be an intolerable source of irritation.
- Immediately after contamination, remove outer clothing, shoes, and socks and do not reuse until thoroughly aerated or ventilated. Keep such clothing and shoes outdoors until thoroughly aerated. Then follow the PPE manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE and work clothing separately from other laundry.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning/maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

Users should:

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

OBSERVE THE FOLLOWING PRECAUTIONS

GENERAL PRECAUTIONS

1. Do not get in eyes, on skin or on clothing.
2. Do not spill or discharge contents outside of areas confined for treatment.
3. Comply with all local regulations and ordinances.
4. It is advisable to supply your physician with information on Methyl Bromide. Literature is available from your dealer or distributor.
5. Obtain medical assistance at once in case of illness after exposure, and do not allow conditions which could accidentally cause further exposure until recovery is complete. (See Note to Physician.)

PRECAUTIONS FOR SOIL FUMIGATION USE

PRIOR TO FUMIGATION:

1. Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory Agencies as required.
2. Never fumigate alone. It is imperative always to have an assistant and proper protective equipment in case of accidents.
3. 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. Handle this fumigant in the open, with the operator "up wind" from the container where there is good ventilation.
5. Check fumigant pressure system for leaks before beginning operation.
6. Two trained persons must be present during introduction of the fumigant.
7. 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 to 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 "Decontamination water not to be used for drinking."
8. Field should be reasonably free of trash before starting the fumigation.
9. Post all treated areas with warning signs.

DURING FUMIGATION:

1. This fumigant should not be applied when there is an atmospheric inversion. Since uncomfortable concentrations of chloropicrin may drift to nearby areas, immediately cover treated area with plastic tarpaulin for a minimum of 48 hours when the injection depth is less than 10 inches.
2. Do not lift injection shanks to turn at the end of a pass until fumigant has drained from system following closure of shutoff valve.
3. If trash is inadvertently pulled by the shanks to the ends of the field when fumigating, it must be covered by lifting the shanks, then covering the trash with polyethylene film before making the turn for the next pass.
4. When changing the cylinders, be certain they are turned off and fumigant system is not under pressure. Do not open the system when there are people or structures downwind where exposures above the permissible exposure levels could occur.

AFTER FUMIGATION:

Keep pets, livestock, and other domestic animals out of the treated area during application, during the exposure period as specified for applications in Directions for Use, and during removal of tarpaulin. Two trained persons must be present during removal of the tarpaulin.

SPILL AND LEAK PROCEDURES FOR SOIL FUMIGATION:

In case of a rupture of hose or fitting while applying fumigant, immediately stop tractor and motor. Evacuate everyone from the immediate area of the spill or leak. Wear the personal protective equipment (including prescribed respirators) specified in the Hazards to Humans section of this labeling for entry into affected area to correct problem. Approach from upwind to make necessary repairs. Do not enter area without the required PPE until the spill has evaporated or the leak has been fixed. Contaminated soil, water, and other cleanup debris is a toxic hazardous waste. Report spill to the National Response Center (800-424-8802) if the reportable quantity of 1000 lbs. is exceeded.

NOTE CAREFULLY:

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 plant roots, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury and/or nitrate starvation to crops, avoid using fertilizers containing ammonium salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65 degrees F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

ENVIRONMENTAL HAZARD

This pesticide is toxic to wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollution Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

CHEMICAL HAZARD

Do not use containers or application equipment made of magnesium, aluminum, or their alloys, as under certain conditions this fumigant may be severely corrosive to such metals. Do not permit water to be used to clean the fumigant pressure system as corrosion will result. Diesel oil is satisfactory for this purpose.

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.

PLACARDING OF FUMIGATED AREAS

The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing:

- skull and crossbones symbol
- "DANGER/PELIGRO"
- "Area under fumigation, DO NOT ENTER/NO ENTRE"
- "Methyl Bromide Fumigant in use"
- the date and time of fumigation
- name, address, and telephone number of the applicator

Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of methyl bromide is measured to be less than 5 ppm. Signs must remain legible during the entire posting period. Warning signs are available from your dealer or distributor.

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 Directions for Use section for information about this standard.

Refer to supplemental labeling for complete Directions for Use.

WARNING: Contains methyl bromide, a substance which harms public health and environment by destroying ozone in the upper atmosphere.



WARRANTY

NOTICE: Seller warrants that the product conforms to its chemical description 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.

STORAGE AND DISPOSAL

STORAGE AND HANDLING: Store in a secure manner either outdoors under ambient conditions or indoors in a well-ventilated area. Post as a pesticide storage area. Do not contaminate water, food, or feed by storage. Persons moving, handling, or opening containers must wear the personal protective equipment (including prescribed respirators when necessary) specified in the Hazards to Humans section of this labeling. Open container only in a well-ventilated area. Store cylinders upright, secured to a rack or wall to prevent tipping. Cylinders 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 use. Replace safety cap and valve protection bonnet when cylinder is not in use. When cylinder is empty, close valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to shipper. Only the registrant is authorized to refill cylinders. Do not use cylinders for any other purpose. Follow registrant's instructions for return of empty or partially empty cylinder.

RETURN CYLINDERS TO: Cardinal Professional Products, 8770 Highway 25, Hollister, CA 95023. Cylinders are the property of Cardinal Professional Products and should be returned promptly by collect auto freight. Do not ship cylinders without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the company for return instructions.

SHIPPING: This fumigant is classified in the U.S. Department of Transportation Hazardous Materials Regulations as Methyl Bromide, 2.3, UN 1062, Poison-Inhalation Hazard, Hazard Zone C and no exemptions from specifications, packaging, marking, or labeling are allowed. Describe empty cylinders as having last contained Methyl Bromide (inhalation hazard). Do not ship with foods, feeds, or clothing.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or 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.



June 4, 2004

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PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Loose-fitting or well ventilated long-sleeved shirt and long pants
- Shoes and socks
- Full-face shield or safety glasses with brow and temple shields when handling liquid product [DO NOT wear goggles.]
- When the acceptable air concentration level is above 5 ppm and a respirator is required, protect the eyes by wearing a full-face respirator.
- No respirator is required if the air concentration level of methyl bromide in the working area is measured to be less than 5 ppm.
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WORK SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Methyl bromide is heavier than air and can be trapped inside clothing and cause skin injury.
- If liquid fumigant splashes or spills on clothing, remove them at once, as fumes will be an intolerable source of irritation.
- Immediately after contamination, remove outer clothing, shoes, and socks and do not reuse until thoroughly aerated or ventilated. Keep such clothing and shoes outdoors until thoroughly aerated. Then follow the PPE manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE and work clothing separately from other laundry.
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MP-23793

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TOTAL:	100.0%

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EPA Est. 8536-CA-4
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NET CONTENTSLBS.

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POISON

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FIRST AID

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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 overexposure 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.

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

OBSERVE THE FOLLOWING PRECAUTIONS

GENERAL PRECAUTIONS

1. Do not get in eyes, on skin or on clothing.
2. Do not spill or discharge contents outside of areas confined for treatment.
3. Comply with all local regulations and ordinances.
4. It is advisable to supply your physician with information on Methyl Bromide. Literature is available from your dealer or distributor.
5. Obtain medical assistance at once in case of illness after exposure, and do not allow conditions which could accidentally cause further exposure until recovery is complete. (See Note to Physician.)

PRECAUTIONS FOR SOIL FUMIGATION USE

PRIOR TO FUMIGATION

- Comply with all local regulations and ordinances. Obtain an application permit from Agricultural Regulatory Agencies as required.
- Never fumigate alone. It is imperative always to have an assistant and proper protective equipment in case of accidents.
- 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.
- Handle this fumigant in the open, with the operator "up wind" from the container where there is good ventilation.
- Check fumigant pressure system for leaks before beginning operation.
- Two trained persons must be present during introduction of the fumigant.
- 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 to 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 "Decontamination water not to be used for drinking."
- Field should be reasonably free of trash before starting the fumigation.
- Post all treated areas with warning signs.

DURING FUMIGATION

- This fumigant should not be applied when there is an atmospheric inversion. Since uncomfortable concentrations of chloropicrin may drift to nearby areas, immediately cover treated area with plastic tarpaulin for a minimum of 48 hours when the injection depth is less than 10 inches.
- Do not lift injection shanks to turn at the end of a pass until fumigant has drained from system following closure of shutoff valve.
- If trash is inadvertently pulled by the shanks to the ends of the field when fumigating, it must be covered by lifting the shanks, then covering the trash with polyethylene film before making the turn for the next pass.
- When changing the cylinders, be certain they are turned off and fumigant system is not under pressure.
- Do not open the system when there are people or structures downwind where exposures above the permissible exposure levels could occur.

AFTER FUMIGATION

- Keep pets, livestock, and other domestic animals out of the treated area during application, during the exposure period as specified for applications in Directions for Use, and during removal of tarpaulin.
- Two trained persons must be present during removal of the tarpaulin.

SPILL AND LEAK PROCEDURES FOR SOIL FUMIGATION

- In case of a rupture of hose or fitting while applying fumigant, immediately stop tractor and motor.
- Evacuate everyone from the immediate area of the spill or leak.
- Wear the personal protective equipment (including prescribed respirators) specified in the HAZARDS TO HUMANS section of this labeling for entry into affected area to correct problem.
- Approach from upwind to make necessary repairs.
- Do not enter area without the required PPE until the spill has evaporated or the leak has been fixed.
- Contaminated soil, water, and other cleanup debris is a toxic hazardous waste. Report spill to the National Response Center (800-424-8802) if the reportable quantity of 1000 lbs. is exceeded.

NOTE CAREFULLY: 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 plant roots, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury and/or nitrate starvation to crops, avoid using fertilizers containing ammonium salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65 degrees F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

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.

PLACARDING OF FUMIGATED AREAS

The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing:

- skull and crossbones symbol
- "DANGER/PELIGRO"
- "Area under fumigation, DO NOT ENTER/NO ENTRE"
- "Methyl Bromide Fumigant in use"
- the date and time of fumigation, and
- name, address, and telephone number of the applicator

DO NOT ALLOW ENTRY BY UNPROTECTED PERSONS INTO THE FUMIGATED AREA UNTIL THE SIGNS ARE REMOVED. SUCH SIGNS MUST ONLY BE REMOVED WHEN THE AIR CONCENTRATION LEVEL OF METHYL BROMIDE IS MEASURED TO BE LESS THAN 5 PPM. SIGNS MUST REMAIN LEGIBLE DURING THE ENTIRE POSTING PERIOD. WARNING SIGNS ARE AVAILABLE FROM YOUR DEALER OR DISTRIBUTOR.

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 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). **No instructions elsewhere on this labeling relieve users from complying with the requirements of the WPS.**

ENTRY RESTRICTIONS: Greenhouse Soil Fumigation: 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 by the WPS—is PROHIBITED in the entire greenhouse (entire enclosed building/structure) from the start of application until 48 hours after application AND until the air concentration level of methyl bromide in the working area is measured to be less than 5 ppm. Until the aeration of the soil is complete (usually 10-14 days), non-handlers are permitted in the greenhouse ONLY while the air concentration level of methyl bromide in their working area remains less than 5 ppm. If tarps are used for the application, non-handler entry is prohibited during tarp removal and until the air concentration level of methyl bromide in the working area is measured to be less than 5 ppm. **Outdoor Soil Fumigation:** 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 48 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, as described in the "Placarding of Fumigated Areas" section of this labeling. 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. **Greenhouses—Soil Fumigation:** Post the fumigant warning signs outside all entrances to the entire greenhouse (entire enclosed building/structure). **Outdoor Soil Fumigation:** Post the fumigant warning signs at entrances to treated areas.

PPE FOR ENTRY DURING 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.

GENERAL INSTRUCTIONS

THIS FUMIGANT IS A HIGHLY HAZARDOUS MATERIAL AND SHOULD BE USED ONLY BY INDIVIDUALS TRAINED IN ITS PROPER USE. BEFORE USING, READ AND FOLLOW ALL LABEL PRECAUTIONS AND DIRECTIONS, INCLUDING THE ATTACHED SUPPLEMENT. ALL PERSONS WORKING WITH THIS FUMIGANT MUST BE KNOWLEDGEABLE ABOUT THE HAZARDS, AND TRAINED IN THE USE OF REQUIRED RESPIRATOR EQUIPMENT AND DETECTOR DEVICES, EMERGENCY PROCEDURES, AND PROPER USE OF THE FUMIGANT.

SOIL FUMIGATION DIRECTIONS

- **PESTS CONTROLLED:** Nematodes, including root-knot spp. *Tylenchulus*, *Pratylenchus*, *Xiphinema*, *Criconeimoides*, and *Paratylenchus*.
- **SOIL BORNE FUNGI, INCLUDING:** *Pythium*, *Rhizoctonia*, *Phytophthora*, *Pyrenochaeta*, *Sclerotium*, *Armillaria*, and the clubroot organism, *Plasmiodiophora*.
- **WEEDS AND WEED SEED:** Seeds, roots, stolons, and bulbs of broadleaf weeds and grasses including quackgrass, annual bluegrass, broomrape, common lambsquarters, torpedograss and Bermuda grass. Not effective against mallow, dodder, and some species of clover.
- **INSECTS IN THE SOIL AT THE TIME OF TREATMENT, INCLUDING:** Wireworms, June beetle larvae, white grubs, and garden symphylan.

PRETREATMENT SOIL PREPARATION

Plow or rip the soil to the depth to which effective treatment 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 optimum 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 at the depth of 6 inches.

NOTE: Fumigation may temporarily reduce nitrification in the soil thus increasing levels of ammonium, 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 degrees F then fertilize as indicated by soil test. To stimulate nitrification and to reduce possible ammonium toxicity, acid soils should be limed before fumigation.

TREE SITE FUMIGATION DIRECTIONS

(For Use in Florida Only)

Preplant or replant fumigation of citrus soil for control of *Phytophthora* and citrus nematodes in Florida sandy soils. Trees which are planted in this treated soil will not bear harvestable fruit for a period of at least 24 months. Apply with chisels spaced 12 inches apart to a depth of 6 to 8 inches. Seal fumigant with a drag or cultipacker following immediately behind chisels. Apply Methyl Bromide 98% at the rate of 1 pound per 100 square feet. Immediately cover with a 4 mil tarp and expose to fumigation for 96 hours. This treatment will control disease to a depth of 4 feet. Remove cover and aerate 2 weeks before setting transplants in treated area.

FIELD FUMIGATION

For overall application of Methyl Bromide 98%, inject the product with a chisel type applicator, having the chisels spaced no more than 12 inches apart and injecting the fumigant to a depth of 6 to 8 inches below the soil surface. The soil surface must be covered immediately after treatment with simultaneous film laying equipment or by sealing with a roller or cultipacker and covered within 20 minutes with polyethylene film or other suitable cover. Consult table for proper rate of application. For row applications use the same rate of application per acre as suggested in the table. The actual amount used per acre, however, will be proportional to the actual area treated.

METHYL BROMIDE 98% SOIL FUMIGATION USES

TREATMENT SITE	RATE LBS./ACRE	EXPOSURE TIME (HRS.)
Field soils to be planted to: Asparagus, broccoli, cauliflower, eggplants, lettuce, muskmelons, onions (dry bulb), peppers, pineapples, strawberries, tomatoes	180 - 240	24 - 48
Field soils to be planted to: Citrus, deciduous fruits and nuts, vineyards	400 - 870 [*] 435 - 870 ^{**}	24 - 48 24 - 48
Nursery, Turf, and Ornamentals (Non-Food) Soil: Turf, lawns, parks, golf greens, athletic fields, recreational turf areas, ornamentals, floral crops, forest tree seedlings, strawberry (non-food)	180 - 800	24 - 48
Greenhouse Soils: Non-Food Crops	180 - 435	24 - 48
Tomato	180 - 240	24 - 48
Seed or Transplant Beds (non-food): Tobacco	180 - 435 872	24 - 48 24 - 48
Potting Mix	1 lb./cu. yd.	24 - 48

^{*} Use the higher labeled rates for muck and heavy clay soils.
^{**} Deep injection application.
^{***} Topical application.

RAISED TARP FUMIGATION METHOD

Support the center of the cover to provide a small gas dome. Inflated plastic bags, crumpled fertilizer bags, burlap bags stuffed lightly with hay or straw, inverted baskets, flowerpots or bottles placed in the soil may be used for support. Evaporating pans are essential for the volatilization and uniform dispersion of fumigant. Shallow pans or basins made of plastic or tin are satisfactory for this purpose.

1. Use one evaporator pan for each 300 to 400 square feet of area.
2. Anchor one end of each polyethylene tube into an evaporating pan with tape or a suitable weight. This insures that the liquid will be directed into the evaporating pan.
3. Extend the free ends of the polyethylene tubes outside of the area to be covered.
4. After the supports and tubing are in place, cover the area to be fumigated with a gas proof cover of polyethylene or coated fabric film.
5. Seal the outside edges with 6 to 10 inches of soil. Tamp the soil down so edges will not pull loose.
6. Attach a polyethylene tube to the cylinder valve outlet and open. Use a cylinder dispenser or scale to meter small amounts.

HOT GAS METHOD

The "hot gas method" consists of using a commercially manufactured heat exchanger, or a copper coil immersed in a vessel containing hot water, to vaporize the fumigant before introduction. This method may be useful where large amounts of fumigant are required and rapid vaporization is advantageous.

DOSAGE: Use one to two pounds of Methyl Bromide 98% per 100 square feet for an exposure time of 24 hours when soil temperature is 60°F or higher. Methyl Bromide penetrates the soil to the depth it has been plowed or ripped. When soil temperature is between 50°F and 60°F, extend the exposure time to 48 hours. Do not treat when soil temperature is below 50°F.

POTTING MIX FUMIGATION DIRECTIONS

Potting mixes, including decomposed compost, soil mixes and manure, can be fumigated with Methyl Bromide 98%. Fumigation should take place outdoors or in a well ventilated area away from desirable plants or occupied buildings. The material to be treated should have a temperature of 60°F or above, be loose and moist enough for good seed germination. To insure a good seal, pile the material to a depth of 18 inches on a concrete floor or on wet ground. Piles two to three feet high can also be treated provided perforations are made in the pile surface at one foot intervals to assist penetration. Once the pile has been made, install supports to hold the cover a few inches above the pile surface to aid in proper fumigant diffusion. Place the outlet of the applicator tube or tubes in evaporating pans spaced about 30 feet apart on the pile surface. Cover with a polyethylene sheeting or other gas confining material of 4 mil. or greater thickness. Seal the edges by burying, covering with moist sand, or soil or by means of sand snakes. Introduce the fumigant into the evaporating pans as a liquid or by means of the hot gas method. Consult table for proper dosage and exposure time. Aerate for 24 to 72 hours before planting. Potting mixes in flats may also be treated. Arrange the flats in loose criss-cross stacks no more than 5 feet high, then cover and seal as described above. Introduce the fumigant at the top and in the center of the stack into evaporating pans or by means of the hot gas method at a rate of 4 pounds per 100 cubic feet. Use one injection point for each 100 cubic feet of volume. Expose for 24 to 48 hours. Aerate for 24 hours.

SPECIAL INSTRUCTION FOR THE CONTROL OF *ARMILLARIA MELLEAE* (OAK ROOT FUNGUS) ON DECIDUOUS FRUITS AND NUTS, CITRUS, AND VINEYARDS

PRETREATMENT SOIL PREPARATION: To obtain the maximum control of *Armillaria melleae* with Methyl Bromide 98%, soil must be dry to a depth requiring treatment. This can be accomplished by: (a) planting sudangrass in the Spring, irrigating until the grass has established itself, then withholding further irrigation; (b) naturally, by allowing plants to grow without irrigation. When soil is dry, cut and remove grass, plants and debris. Rip soil to a depth of 36 inches and disc to smoothness.

DOSAGE AND METHOD OF APPLICATION: This is a preplant or replant treatment. Crops that are planted in this treated soil will not bear harvestable fruit for a period of at least 12 months. Methods and rate of application are as follows:

□ Non-Tarp Chisel Application (*not for use in California*): After the soil has been properly prepared, inject 400 to 870 pounds of Methyl Bromide 98% per acre by chisel application with chisels spaced up to 66 inches apart to a depth of 24 to 30 inches. In the row strip, treatments may be made by using a single shank. Chisels should have a wing welded on the back 2" to 4" above the chemical outlet to partially break the chisel mark. To fill in the chisel mark and seal the surface, disc and ringroll immediately after fumigant injection. Be sure that the disc and ringroller cover an area sufficiently beyond the chisel lines to effect a good seal.

□ Tarp Chisel Application: After the soil has been properly prepared, apply 400 to 870 pounds of fumigant per acre by chisels spaced up to 66 inches apart, as described above, and cover with adequate polyethylene film seal.

□ Deep Injection Auger-Probe Treatment: Use one pound of Methyl Bromide 98% in light soils (two pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Assume one injection site per 100 square feet (on a 10 ft. x 10 ft. grid pattern) with the injection in the center of the area to be treated.

EXPOSURE AND AERATION PERIOD:

1. To insure the proper time-concentration relationship to control oak root fungus for chisel applications, we recommend a seven-day exposure period before removing the polyethylene film cover, and a one day interval with Deep Injection Auger-Probe Treatment, after which planting or replanting of trees, vines, or other deep-rooted crops may begin 14 days later.

2. Methyl Bromide 98% will not usually control weed seeds under very dry conditions. However, some control may be observed on deep-rooted perennials such as morning-glory (birdweed) and rhizomes of Johnson grass.

NON-TARP NEMATODE CONTROL

For control of nematodes including *Meloidogyne* spp., *Xiphinema* spp., *Criconeoides*, *Pratylenchus*, and *Paratylenchus* on deciduous fruits, nuts, citrus, and vineyards.

PRETREATMENT SOIL PREPARATION: Plow or rip the soil to the depth to which effective treatment is required. The soil should be worked until free of clods or large lumps and residue from previous crops should be worked into the soil to allow for decomposition prior to fumigation. To insure maximum fumigant penetration the soil at the point of injection should not contain more than 5 to 15% moisture depending on soil type. However, to improve sealing, the soil surface may be moistened by means of a sprinkler application of 1/4 to 1/2 inch of water prior to final preparation and application. For best results, fumigate when the soil temperature is above 60°F at the depth of 6 inches. Do not fumigate when soil temperature is below 50°F.

DOSAGE AND METHOD OF APPLICATION:

This is a preplant or replant treatment. Do not apply to soil where trees or vines will bear harvestable fruit within 12 months. A waiting period of at least 14 days should be observed between application and planting. Methods and rate of application are as follows:

□ Chisel Application: After the soil has been properly prepared inject 400 to 870 pounds of Methyl Bromide 98% per acre by chisel application with chisels spaced up to 66 inches apart to a depth of 18 to 24 inches. In the row strip, treatments may be made by using a single shank. To fill in the chisel mark and seal the surface, disc and ringroll immediately after fumigant injection. Be sure that the disc and ringroller cover an area sufficiently beyond the chisel lines to effect a good seal.

□ Deep Injection Auger-Probe Treatment: Use one pound of Methyl Bromide 98% per injection site in lighter soils; two pounds in fine textured soils. Use one injection site per 100 square feet (on a 10 ft. x 10 ft. grid pattern) with the injection in the center of the area to be treated. Tamp or compact the soil at the point of injection.

Methyl Bromide 98% used without a tarp will not usually control most weed seeds. However, some control may be observed on deep-rooted perennials such as morning-glory (birdweed) and rhizomes of Johnson grass.

STORAGE AND DISPOSAL

STORAGE AND HANDLING: Store in a secure manner either outdoors under ambient conditions or indoors in a well-ventilated area. Post as a pesticide storage area. Do not contaminate water, food, or feed by storage. Persons moving, handling, or opening containers must wear the personal protective equipment (including prescribed respirators when necessary) specified in the Hazards to Humans section of this labeling. Open container only in a well-ventilated area. Store cylinders upright, secured to a rack or wall to prevent tipping. Cylinders 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 use. Replace safety cap and valve protection bonnet when cylinder is not in use. When cylinder is empty, close valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to shipper. Only the registrant is authorized to refill cylinders. Do not use cylinders for any other purpose. Follow registrant's instructions for return of empty or partially empty cylinder.

RETURN CYLINDERS TO: Cardinal Professional Products or c/o Niklor Chemical
8770 Highway 25
Hollister, CA 95023
1667 Purdy Avenue
Mojave, CA 93501

Cylinders are the property of Cardinal Professional Products and should be returned promptly by collect auto freight. Do not ship cylinders without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the company for return instructions.

SHIPPING: This fumigant is classified in the U.S. Department of Transportation Hazardous Materials Regulations as Methyl Bromide, 2.3, UN 1062, Poison-Inhalation Hazard, Hazard Zone C and no exemptions from specifications, packaging, marking, or labeling are allowed. Describe empty cylinders as having last contained Methyl Bromide (inhalation hazard). Do not ship with foods, feeds, or clothing.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or 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.

WARNING: Contains methyl bromide, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

WARRANTY

NOTICE: Seller warrants that the product conforms to its chemical description 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 instruction, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such use.

June 4, 2004