



Reg # 5549-50

PM-32

file 1/9/12

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

NOV 18 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

JAMES M. PEARCE
COASTAL CHEMICAL CORPORATION
P.O. BOX 856
EVANS STREET EXTENSION
GREENVILLE, N.C. 27835

Subject: Label Amendment Submission of 4/21/94 in Response to PR Notice 93-7
EPA Reg. No. 5549-50
BROZONE PREPLANT SOIL FUMIGANT

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

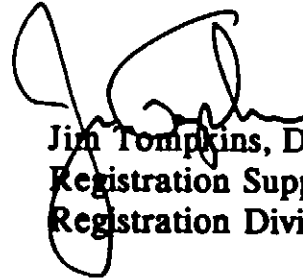
Submit the final printed labeling via the U.S. Postal Service to:

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

James M. Pearce
Costal Chemical Corporation

Comments for: EPA REG. NO. 5549-50
BROZONE PREPLANT SOIL FUMIGANT

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

If your product contains more than 2% chloropicrin, it should be listed as an active ingredient. If it contains 2% or less of chloropicrin as an inert ingredient then the acceptable air concentrations level for persons exposed to chloropicrin should be removed.

Under "Air Concentration Level" replace your current statement with:

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

Under PERSONAL PROTECTIVE EQUIPMENT

Modify as follows:

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 chloropicrin in the working area is measured to be less than 0.1 ppm AND 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 0.1 ppm for chloropicrin OR 5 ppm methyl bromide is exceeded at any time. The respirator must be one of the following types :(a)

continued

Under "WORKER SAFETY REQUIREMENTS" modify as follows:

1. Do not wear jewelry, gloves, goggles, tight clothing.....
2. If liquid.....
3. 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.
4. Discard clothing.....
5. Follow PPE manufacturer's instructions.....

USER SAFETY RECOMMENDATIONS

Delete "wash outside of gloves before removing"

Under ENTRY RESTRICTIONS

Unless you have use directions for "Greenhouse Space Fumigation" this paragraph does not appear necessary and may be removed.

SPILL AND LEAK PROCEDURES.

You may remove the section on spill and leak procedures for enclosed space fumigation and retain the spill and leak procedures for Soil Fumigation. Add "Contaminated soil, water and other cleanup debris is a toxic waste. report spill to the National Response Center (800-424-8802) if reportable quantity of 1,000 lbs is exceeded." to the section for "Spill and Leak Procedures for Soil Fumigation"

SPILL & 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 leak. Wear the personal protective equipment (including prescribed respirator) specified 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 spill has evaporated or the leak has been fixed.

continued

SOIL FUMIGATION DIRECTIONS

AFTER FUMIGATION make the following change:

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

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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.

BROZONE

PREPLANT SOIL FUMIGANT

ACTIVE INGREDIENTS:	By Wt.
Methyl bromide	68.6%
INERT INGREDIENTS	31.4%
TOTAL	100.0%

This product weighs 10.5 pounds per gallon.

KEEP OUT OF REACH OF CHILDREN

DANGER



POISON

ACCEPTED
with COMMENTS
In EPA Letter Dated

NOV 18 1994

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
5549-50

PELIGRO

~~**PRECAUTION AL USUARIO:** Si usted no lo Ingles, no use este producto hasta que la etiqueta lo haya sido explicado ampliamente.~~

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.)

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 SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

Manufactured by
COASTAL CHEMICAL CORPORATION
GREENVILLE, NC

EPA EST. NO. 5549-NC-1 / EPA REG. NO. 5549-50
Net Contents 125 lbs.

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

Extremely hazardous liquid and vapor under pressure. Do not breathe vapor. Inhalation may be fatal or cause serious acute illness or delayed respiratory 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 as a warning agent. Chloropicrin may be irritating to the upper respiratory tract, and even at low levels can irritate the eyes, producing watering. If these symptoms occur, leave the fumigation area immediately.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for persons exposed to chloropicrin is 0.1 ppm (0.7 mg/m³). 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 Sensidyne.

NOTE TO PHYSICIAN: Early symptoms of overexposure are dizziness, headache, nausea and vomiting, weakness and collapse. Lung edema may develop 2 to 48 hours after exposure, accompanied by cardiac irregularities; these effects are the usual cause of death. Repeated overexposures can result in vision, staggering gait and mental imbalance, with probable recovery after a period of no exposure. Blood bromide levels suggest the occurrence and degree of exposure. Treatment is symptomatic.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Loose-fitting long-sleeved shirt and long pants
- Shoes and socks
- Protective eyewear when handling liquid.
- When a respirator is required, protect the eyes from the vapors by wearing a full-face respirator or face sealing goggles with a half-face respirator.
- No respirator is required if the air concentration level of chloropicrin in the working area is measured to be less than 0.1 ppm AND 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 0.1 ppm for chloropicrin OR 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).

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Under normal soil fumigation conditions, the air concentration level of chloropicrin in the working area will not generally exceed 0.1 ppm and the air concentration level of methyl bromide in the working area will not generally exceed 5 ppm. Therefore, no respiratory protection is required. However, due to 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 workers in the affected area in the event of a leak or spill.

WORK SAFETY REQUIREMENTS

1. Do not wear jewelry, gloves, tight clothing, rubber protective clothing, or rubber boots when handling. Methyl bromide and chloropicrin are both toxic and can be trapped inside clothing and cause skin injury.
2. If liquid fumigant splashes or spills on clothing, remove them at once, as fumes will be an intolerable source of irritation.
3. Immediately after application remove outer clothing, shoes, and socks. Do not reuse contaminated clothing or shoes until cleaned. Keep clothing and shoes separately from other laundry.
4. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
5. Follow manufacturer's instructions for cleaning/maintaining protective eyewear and respirators.

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 clothing.

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

RESPIRATORY PROTECTION: Respiratory protection equipment is required when using Bromzone for certain applications. Refer to the Directions for complete instructions on the requirements for respiratory protective equipment.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waterways unless specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

SPILL AND LEAK PROCEDURES: In case of a rupture of hose or fitting while applying fumigant, immediately stop tractor and motor and evacuate area of spill or leak. Use a MSHA/NIOSH approved self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator to enter affected area to correct problem. Approach from upwind to make necessary repairs. Do not reenter area without respiratory protection until evaporated or a leak has been repaired, and the methyl bromide concentration is determined to be less than 5 ppm. In case of a leaking container, isolate area and discharge contents under a polyethylene sheeting of 4 mil or greater thickness onto the soil surface in accordance with instructions in the Fumigation Directions. Contaminated soil, water, and other cleanup debris is a toxic hazardous waste. Report spill to the National Response Center (800) if the reportable quantity of 1000 pounds is exceeded.

PHYSICAL AND CHEMICAL HAZARDS

Contents under pressure. Do not use or store near heat or open flame. In fire fueled by other materials, Bromzone may liberate hazardous gases. Bromzone with aluminum, magnesium, zinc and alkali metals will result in the liberation of toxic gases, and possible fire and explosion. In case of fire, corrosion of containers and equipment made of these will occur.

DIRECTIONS FOR USE

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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.

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. 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.

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 and Chloropicrin Fumigants 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 chloropicrin is measured to be less than 0.1 ppm AND 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 Space 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 structure/building) from the start of application until aeration reduces the air concentration level of chloropicrin in the working area to less than 0.1 ppm AND the air concentration level of methyl bromide in the working area to less than 5 ppm.

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 structure/building) from the start of application until 48 hours after application AND until the air concentration level of chloropicrin in the working area is measured to be less than 0.1 ppm AND 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 chloropicrin in their working area remains less than 0.1 ppm AND 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 chloropicrin in the working area is measured to be less than 0.1 ppm AND 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 or Space Fumigation: Post the fumigant warning signs outside all entrances to the entire greenhouse (entire enclosed structure/building).

Outdoor Soil Fumigation: Post the fumigant warning signs at entrances to treated areas.

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 this labeling.

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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 cylinder 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 cylinder for any other purpose. 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.

SPILL AND LEAK PROCEDURES: Evacuate everyone from the immediate area of the spill or leak. For entry into affected area to correct problem, wear the personal protective equipment (including prescribed respirators) specified in the Hazards to Humans section of this labeling. Move leaking or damaged containers outdoors or to an isolated location. Discharge contents under a polyethylene sheeting of 4 mil or greater thickness onto the soil surface in accordance with instructions in Soil Fumigation Directions section of this labeling. Observe strict safety precautions. Work upwind, if possible. Allow spilled fumigant to evaporate. Only correctly trained and PPE-equipped handlers are permitted to perform such cleanup. Do not permit entry into the spill or leak area by another person until the air concentration level of chloropicrin is measured to be less than 0.1 ppm AND the air concentration level of methyl bromide is measured to be less than 5 ppm.

Contaminated soil, water, and other cleanup debris is a toxic hazardous waste. Report spill to the National Response Center (800-424-9802) if the reportable quantity of 1000 lbs. is exceeded.

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.

DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide is a violation of Federal Law. If these wastes can not be disposed of by use according to label instruction, 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 Coastal Chemical Corporation location from which shipment was made. Return partial cylinders only after consulting Coastal Chemical Corporation for proper shipping instructions. In either case, use delivering carrier when possible.

SOIL FUMIGATION DIRECTIONS

Bronze 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:

- Comply with all local regulations and ordinances. Obtain an application permit from agricultural regulatory agencies as required.
- Never fumigate alone. It is imperative to always have an assistant present and proper protective equipment available in case of accidents.
- 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.
- Handle this fumigant in the open, with the operator "up wind" from the container where there is good ventilation.
- Check fumigant delivery systems 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 container marked "Decontamination Water, not to be used for drinking."
- All trash should be cleared from the field before starting fumigation.
- Post all treated areas with warning signs.

The following precautions must be followed DURING SOIL FUMIGATION:

- Two trained persons must be present during the introduction of the fumigant.
- Do not make application of this fumigant when there is little or no air movement or there is an atmospheric inversion.
- Do not lift injection shanks to turn at the end of a pass until fumigant has been purged or drained from system following closure of shutoff valve.
- If trash is inadvertently pulled up by the shanks when fumigating, it must be covered with polyethylene film.
- When changing the cylinders, be certain they are turned off and fumigant system is not under pressure.

The following precautions must be followed AFTER FUMIGATION:

- Keep pets, livestock, and other domestic animals out of the treated area during application, during 48-hour exposure period, and during removal of the tarpaulin.
- Two trained persons must be present during removal of the tarpaulin.

The following precautions must be followed AFTER soil fumigation:

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

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APPLICATION METHODS

Brozone is to be used only as a preplant soil fumigant.

A) TARPAULIN METHODS FOR FIELD, NURSERY, TURF, GREENHOUSE AND SEED OR TRANSPLANT BED SOILS:

Pests controlled when present in soil at time of treatment:

Plant-Parasitic Nematodes, including root-knot, root lesion (meadow), cyst, citrus, burrowing, false root knot, lance, spiral, ring, sting, stubby root, dagger, awl, sheath and stunt (stilet).

Soil-Borne Disease causing organisms, including the fungi Pythium, Rizoctonia, Phytophthora, Pyrenochaeta, Scirotinia, Sclerotium, and Fusarium and the clubroot organism Plasmodiophora.

Weeds, including broadleaf weeds such as broomrape and lambquarters and grasses such as bermudagrass, 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 symphylans.

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. Acid soils should be limed before fumigation to stimulate nitrification and to reduce possible ammonium toxicity.

1) **Pretreatment Soil Preparation:** Plow, or rip or otherwise till 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 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 degrees F. For best results, fumigate when soil temperature is 60 to 80 degrees F. at the depth of six inches.

2) **Overall Application:** Inject Brozone 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 cultipacker 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.

3) **Row or Bed Applications:** Apply the broadcast rate to the area actually treated, i.e., the area delimited by the film mulch. 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 to 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 transplant, 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 mulch, aeration is accomplished by making holes in the film on spacing appropriate for the crop to be planted.

B) **SPECIAL INSTRUCTIONS FOR FLORIDA CITRUS:** 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 and seal immediately with 4 mil polyethylene film. Apply Brozone at the rate of 1 1/2 to 2 pounds per 100 square feet. Expose to fumigation for 96 hours. This treatment will control disease to a depth of 4 feet. Remove cover and aerate for two weeks before setting transplants in treated soil.

C) **SPECIAL INSTRUCTIONS FOR GREENHOUSE SOIL FUMIGATION:** The use of methyl bromide and chloropicrin in confined spaces presents a potential hazard to humans and plant life. Special precautions must be taken in order that these potential hazards be minimized. It is the responsibility of the individual supervising the fumigation operation to see that all safety precautions are strictly observed.

Fumigation Of Enclosed Spaces:

1) After fumigation, fumigated areas must be aerated until the air concentration level of chloropicrin in the working area is measured to be less than 0.1 ppm AND the air concentration level of methyl bromide is measured to be less than 5 ppm.

2) Until acceptable air concentration level is reached, do not allow any person to enter into the fumigated area unless he/she is wearing the personal protective equipment (including prescribed respirator) specified in the Hazards to Humans section of this labeling. In greenhouses, additional Worker Protection Standard restrictions apply.

Prior To Fumigation: Before the fumigation operation commences, the supervisor of the fumigation job shall have conducted proper training of all personnel involved in the fumigation (includes use of safety equipment), removed all persons from the area not directly involved in the fumigation, and inspected the equipment to ensure proper application.

During Fumigation: Two persons trained in the use of this product must be present during introduction of the fumigant, initiation of aeration and after aeration when testing for reentry. Two persons do not need to be present if monitoring is conducted remotely (outside the area being fumigated). If the concentration of methyl bromide and/or chloropicrin in the worker area, as measured by a pump and appropriate detector tubes, does not exceed 5 ppm (methyl bromide), no respiratory protection is required. If these concentrations are exceeded at any time, all persons in the fumigation area must wear a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) or combination air-supplied SCBA respirator or evacuate the area. Application of Brozone to greenhouse soils is by the same methods as for field soils (see Sections A1, A2 and A3 above). Consult dosage rate table for proper rates of application and exposure periods. The exposure time should be 24-48 hours. If a wind is blowing, all injection should be made upwind from a previous injection site. Immediately after injection of the fumigant and tarping, a qualified person, wearing respiratory protective equipment should monitor the tarped area with a halide detector. If excessive leaks are found, seal the source of the leak immediately. During this operation, all windows and doors should be open and fans operating to maximize ventilation. The greenhouse must be placarded on all entrances to the fumigated area with signs bearing, in English and Spanish,

1. The signal word DANGER/PELIGRO and the skull and crossbones symbol.
2. The statement, "Area under fumigation. DO NOT ENTER/NO ENTRE"
3. The date of fumigation
4. Name of the fumigant used (i.e., Brozone)
5. Name, address, and telephone number of the applicator

AERATION AND REENTRY: After fumigation, treated areas must be aerated until the level of methyl bromide is below 5 ppm. Do not allow entry into the treated area by any person before this time, unless protective clothing and a respiratory protection device (NIOSH/MSHA approved self-contained breathing apparatus (SCBA) or combination air-supplied SCBA respirator) is worn. Do not remove a placard until the treated commodity is completely aerated. To determine whether aeration is complete, each fumigated site or vehicle must be monitored and shown to contain less than 5 ppm methyl bromide in the air space around and, when feasible, in the mass of the commodity. If less than 5 ppm methyl bromide is detected, the placard may be removed. However, if 5 ppm or greater methyl bromide is detected, the placard must be transferred with the commodity to the new site. Workers who transfer or handle completely aerated commodity must be informed and appropriate measures must be taken (i.e., ventilation or respiratory protection) to prevent exposure from exceeding 5 ppm or greater methyl bromide.

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On-Site Protective Equipment: Although this fumigant contains chloropicrin, the absence of chloropicrin does not always indicate the absence of methyl bromide. Do not allow any person to enter the fumigated structure without the appropriate protective equipment from the time of injection of the fumigant until acceptable air concentration level readings are obtained using an approved detector. To maintain adequate safety standards, the following equipment must be present and accessible on the site during the entire fumigation operation:

- 1) one or more self-contained breathing apparatus;
- 2) one or more replacement air bottles per breathing apparatus; and
- 3) one or more halide leak detectors.

After Fumigation: At the end of the exposure period, remove all seals and open all doors and windows that are operational. Allow for complete ventilation. Use ventilation fans whenever possible to remove fumigant from dead air pockets. Follow exactly the instructions in the entry restriction section of the Agricultural-Use Requirements box.

NOTE: Certain materials absorb methyl bromide during fumigation and desorption during aeration may call for extended monitoring and aeration periods.

D) NON-TARP NEMATODE CONTROL: All precautions and procedures as outlined immediately following Soil Fumigation Directions, must be followed. This method controls plant parasitic nematodes when present in soil at the time of treatment. Refer to Section A1 for information regarding Pretreatment Soil Preparation.

1) **Preplant Or Replant Treatment For Citrus, Vineyards And Deciduous Fruits and Nuts:** Do not apply to soil where trees or vines will bear harvestable fruit within 24 months. A waiting period of at least 14 days should be observed between application and planting. After the soil has been properly prepared, inject 580-1270 pounds of Brozone 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 inches above the chemical outlet to partially break the chisel mark. To fill in the chisel mark and seal the surface, disc and cultipack immediately after fumigant injection. Be sure that the disc and cultipacker cover an area at least 33 inches beyond the chisel lines. Refer to Rate Table for dosage rates and exposure times.

2) **For Preplant Row Treatment Of Field Crops Grown On Raised Beds:** Inject Brozone with one chisel per row at 130-175 pounds per acre of treated area. Chisels must be equipped to deliver 2/3 of the chosen rate at a depth of 16 to 20 inches plus 1/3 of the rate at a depth of 6 to 10 inches, relative to the surface of the soil prior to injection. A wing should be attached to the back of the chisel at a point between the two levels of fumigant discharge to seal the chisel track. To minimize collection of trash on chisels, a disc couler may be mounted ahead of each chisel shank to slice a clean path. Immediately or within 20 minutes, a ridge of soil must be listed over the treated strip to a height of at least 10 inches relative to the soil surface prior to injection. Certain subsoiler/ridger or "ripper hipper" equipment is especially well-suited for these applications with modification for delivery of fumigant. Allow at least 5 to 7 days before seeding or transplanting. Listed ridges may be partially flattened by bed-shapers or transplanters before planting if care is taken to prevent introduction of non-treated soil into the fumigated zone.

BROZONE RATE TABLE

Treatment Site	Rate & Method ^b	Exposure Time
Field Soils to be Planted with:		
Asparagus, broccoli, cauliflower, eggplants, lettuce, muskmelons.	260-350 lb/A (IT)	24-48 hr
onions (dry bulb), peppers, pineapples, strawberries, tomatoes	130-175 lb/A (NTSB)	5-7 days
Florida Citrus ^c	1.5-2.0 lb/100 ft ² (IT) ^d	96 hr
Citrus, vineyards and deciduous fruits and nuts ^c	580-1270 lb/A (NTC)	7 days
Nursery and Greenhouse Soils, Seed, Transplant Beds and Turf:		
Non-food crops	260-635 lb/A (IT)	24-48 hr
Tobacco	635 lb/A (IT)	24-48 hr
Tomato (Greenhouse Crop)	260-350 lb/A (IT)	24-48 hr
^a Use higher rates indicated for muck and heavy clay soils ^b Methods of application: IT = Injected with chisels plus covered with tarpaulin NTSB = Non-tarp chisel injection with subsoiler - bedder equipment NTC = Non-tarp chisel injection 24-30 inches deep ^c May not bear harvestable fruit within 24 months ^d Also requires 4 mil tarp		

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**METHYL BROMIDE, 2.3, UN1062,
POISON-INHALATION HAZARD
HAZARD ZONE C**

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