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

JUL 28 1998

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mardel Belotinsky
Regulatory Affairs Specialist
Hendrix and Dail, Inc.
803 Industrial Boulevard
Greenville, NC 27834

SUBJECT: Review of Labeling Amendment
MBC-33 Soil Fumigant
EPA Reg. No. 8853-3
Your Submission Dated May 5, 1998

Dear Mr. Belotinsky:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable subject to the following conditions:

1. On the front panel, delete "OVER" in the statement, "IN ALL CASES OF OVEREXPOSURE, GET MEDICAL ATTENTION IMMEDIATELY." because persons may not be aware that they are "over" exposed to methyl bromide and chloropicrin..
2. Under GENERAL INFORMATION and in the DOSAGE TABLE - Food Crops, change the maximum application rate from 355 lbs./acre back to 350 lbs./acre or justify this change.
3. For purposes of application for registration or amendment, copies of labeling should be submitted to the Agency on 8½" X 11" or mounted on 8½" X 11" paper.

If these conditions are not complied with, the registration for the subject product will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of

the subject product constitutes acceptance of these conditions. A stamped copy is enclosed for your records. Please submit one copy of your final printed labeling before you release the product for shipment. If you have any questions, then please contact Terri Stowe of my staff at (703) 305-6117.

Sincerely,

Mary L. Waller

Mary L. Waller
Product Manager (21)
Fungicide Branch
Registration Division (7505C)

Enclosure

**PRECAUTIONARY STATEMENTS
HAZARD 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, WHICH 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 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.

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 air concentration level of methyl bromide 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 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 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, 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 and chloropicrin are 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. Do not reuse contaminated clothing or shoes until cleaned. Keep and wash the clothing and shoes 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 manufacturer's instructions for cleaning/maintaining protective eyewear, face shields 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.

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

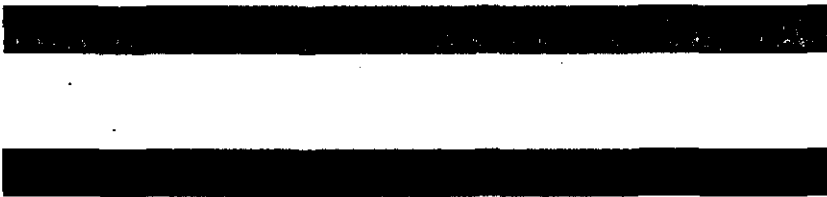
It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific 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 ENTREE"
- "Methyl Bromide and Chloropicrin Fumigants 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 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.



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ACCEPTED
with COMMENTS
In EPA Letter Dated
JUL 28 1998

Under the Federal Insecticide,
Fungicide, and Rodenticide Act

SPECIMEN 8853-3

**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.

MBC-33 Soil Fumigant

ACTIVE INGREDIENTS:

Methyl Bromide	67%
Chloropicrin	33%
TOTAL:	100%

*To control many weeds, grasses, nematodes
and insect pests in soils to be planted to
food crops, field crops, plant beds and nurseries*

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
AN EMERGENCY TREATMENT FACILITY.

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STATEMENT OF PRACTICAL TREATMENT

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 ion 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 panel for additional precautionary statements.



Hendrix and Dail, Inc.

1101 Industrial Boulevard

Greenville, NC 27834

(919) 758-4263

EPA Reg. No. 8853-3

EPA Est. 8853-FL-1

8853-GA-1

8853-KY-2

8853-NC-1

8853-NC-2

METHYL BROMIDE/CHLOROPICRIN MIXTURE, LIQUID

WEIGHT: 14.2 POUNDS PER GALLON

NET CONTENTS: 200 LBS.



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: 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 "Posting 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. **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 "Hazard to Humans and Domestic Animals" section of this labeling.

STORAGE AND DISPOSAL

STORAGE AND HANDLING: Store in a dry, cool, well-ventilated area under lock and key. 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 Hazard 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.

RETURN CYLINDERS TO: Hendrix and Dail, Inc.
1101 Industrial Boulevard
Greenville, NC 27834

Cylinders are the property of Hendrix and Dail, Inc. and should be returned promptly by collect auto freight. When a cylinder is partially full and there is no further requirement for the product, contact Hendrix and Dail, Inc. at (919) 758-4263 for return instructions.

SHIPPING: This fumigant is classified in the U.S. Department of Transportation Hazardous Materials Regulations as (67-33) Chloropicrin and Methyl Bromide mixture, 2.3, UN 1581, Poison-Inhalation Hazard, Hazard Zone B and no exemptions from specifications, packaging, marking, or labeling are allowed. Describe empty cylinders as having last contained Chloropicrin and Methyl Bromide mixture (inhalation hazard). Do not ship with foods, feeds, or clothing.

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 respirator) specified in the Hazard to Humans section of this labeling. Move leaking or damaged containers outdoors or to an isolated location. 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 any other 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 (800-424-8802) if the reportable quantity of 1000 lbs. is exceeded.

DISPOSAL: Do not contaminate water, food, or feed by 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.

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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 Hazard 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.

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 at least 30% nitrates until 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.



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NOTE CAREFULLY, continued:

- Avoid reinfestation of treated soil. Do not use transplants, tools, or crop remains infested with soil-borne plant parasitic pests and weed seeds. Clean applicator carefully before and after use.
- Do not contaminate fumigated areas by walking from unfumigated to fumigated soil. If the treated area is in a location where flooding or washing is possible after rains, plow a furrow or make a trench around it for proper drainage. Wooden frames around the beds are also satisfactory for preventing this type of contamination.
- MBC-33 soil fumigant is toxic to plants; therefore, do not apply to areas containing roots or desirable vegetation. The edge of the cover should be at least 18 inches beyond foliage drip line of living plants.
- Do not spill or discharge contents outside ground cover.
- Some difficulty has been experienced through the use of MBC-33 on soil planted to the following crops: conifers, salvia, snapdragons, carnation multiflora roses, Burford's Chinese holly, as well as certain other plants. Fumigate on a small scale until safety to all plants is determined under growing conditions.

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. 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.

GENERAL INFORMATION

MBC-33 is a preplant fumigant for the control of many weeds, grasses, nematodes and insect pests in soils to be planted to food crops, field crops, plant beds and nurseries. Typical nematodes controlled are root knot, lesion, dagger, stunt, spiral, cyst formers, lance, sting pin, and certain other species; damping-off disease caused by certain species of Rhizoctonia, Pythium, Fusarium and certain others. Such insects as wireworms and white grubs present in the soil at time of treatment are also controlled. Examples of weeds that are controlled include chickweed, pigweed, nutgrass, crabgrass, goosegrass, crowfoot grass, barnyard grass, purslane, wild morning glory, and many other broad leaved weeds and grasses. MBC-33 soil fumigant will give excellent performance in forest tree, ornamental shrub and turf nurseries; in annual and perennial flower, forest tree, tomato, tobacco, strawberry, and ornamental plant beds; as well as in other soil where strawberries and tomatoes are grown as food crops. Do not use more than 355 lbs. of MBC-33 per acre on all soils to be used for food crops.

DIRECTIONS FOR APPLICATION AND PLANTING

WHEN TO TREAT:

Treatments can be made in the Spring, Summer or Fall, whenever soil conditions are suitable. In northern states, late summer or early fall treatments are best for land to be planted to early spring crops.

SOIL PREPARATION:

To facilitate fumigant penetration, crop residues should be worked into the soil and allowed time to decompose before treating. Soil must be in good workable seed bed condition, with adequate moisture for good seed germination. Do not treat if the soil temperature is below 45 degrees Fahrenheit at a depth of 6 inches. Deep tillage of 12 to 18 inches often improves results, especially in heavy or muck soils.

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APPLICATION:

Apply at the rate of 225 to 450 lbs. per acre with a special chisel-type applicator to inject MBC-33 soil fumigant about 6 inches into the soil. Due to the volatility of this fumigant, treated areas must be covered with polyethylene film as soon as possible, preferably within 20 minutes of fumigant application. The film may be laid manually or mechanically with a tarp-layer.

EXPOSURE PERIOD AFTER APPLICATION:

For soil temperatures above 60 degrees Fahrenheit, leave the treated soil covered with the plastic film for at least 48 hours before removal to ensure maximum diffusion. For soil temperatures below 60 degrees Fahrenheit, extend the exposure period to 3 or 4 days for optimum results.

WHEN TO PLANT AFTER THE EXPOSURE PERIOD:

Crops can usually be seeded 2 to 3 days after the cover is removed. For transplants, aerate for 7 to 10 days. If rains or low temperatures (below 60 degrees Fahrenheit) occur during aeration, extend the aeration period. For food crops and food crop transplants, aerate 2 weeks.

DOSAGE TABLE - SOIL FUMIGATION USES	
USE	LBS./ACRE
Food Crops	225 - 355
Tobacco	85 - 128
Floral Crops	225 - 450
Nursery Crops	225 - 450
Plant and Seed Beds	225 - 450

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

WARRANTY DISCLAIMER

NOTICE: Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such use.



**INHALATION
HAZARD**

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CHLOROPICRIN AND
METHYL BROMIDE
MIXTURES
UN 1581
INHALATION HAZARD

