

7 AUG 1993

Trical, Inc.
P.O. Box 1327
Hollister, CA 95024

Attn Tom Duafala, Ph.D.

Subject: Methyl Bromide 89.5%
EPA Registration No. 11220-17
Your Resubmission of March 18, 1993

Your resubmission, a Confidential Statement of Formula (CSF) and label for the subject product, revised in response to EPA's letter of February 22, 1993 letter, has been reviewed. Please note the following.

Product Chemistry

- The revised, updated CSF is filled out correctly and agrees with the revised product label. The CSF is in compliance with PR Notice 91-2 and is acceptable.

Product Name and Labeling

1. The change in product name from "Methyl Bromide 98.0%" to Methyl Bromide 89.5%" is appropriate and acceptable.

2. The labeling referred to above, submitted in connection with registration under the Federal Insecticide Fungicide and Rodenticide Act, as amended, is acceptable subject to the comments listed below. A stamped copy is enclosed for your records. Five copies of the finished labeling must be submitted before you release the product for shipment.

a. Since there are only two components present in the product formulation, the headings in the ingredient statement, "Active" and "Inert Ingredients", should be stated in the singular form.

CONCURRENCES

SYMBOL							
SURNAME							
DATE	7 AUG 1993						

If you should have any questions concerning this letter, you may call Robert Travaglino on (703) 305-6909.

Sincerely,



Ruth G. Douglas
Product Manager (32)
Antimicrobial Program Branch
Registration Division (H7504C)

PRECAUTIONARY STATEMENTS

**HAZARD TO HUMANS
AND DOMESTIC ANIMALS:**

D A N G E R

**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 VAPORING
AGGENT. CHLOROPICRIN MAY BE IRRITATING TO THE
UPPER RESPIRATORY TRACT, AND EVEN AT LOW LEVELS
CAN CAUSE PAINFUL IRRITATION TO THE EYES, PRODUC-
ING TEARING. IF THESE SYMPTOMS OCCUR, LEAVE THE
FUMIGATION AREA IMMEDIATELY.

**OBSERVE THE FOLLOWING
PRECAUTIONS:**

GENERAL PRECAUTIONS

1. Do not get it on your skin or on clothing.
2. Do not use it 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 this chemical. 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 Data on Physician.)

RESPIRATORY PROTECTION:

If the concentration of methyl bromide in the working area, as measured by a direct-reading detector device (such as a Draeger gas detector), does not exceed 5 ppm (20 mg/cu.m), no respiratory protection is required. If this concentration is exceeded at any time, all persons in the fumigation area must wear protective clothing and a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator (such as a U.S. Navy's Survival or escapeable device).

Under normal soil fumigation conditions, the concentration of methyl bromide in the working area will not generally exceed 5 ppm and 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 SCBA or combination air-supplied/SCBA respirator must be available and will be required for entry into an affected area in the event of a leak or spill.

CLOTHING PRECAUTIONS:

1. Wear loose clothing and shoes that are cleaned after each wearing. Do not wear jewelry, gloves, or tight clothing when handling methyl bromide in order that air and may be trapped inside clothing and cause skin injury. If full-face respiratory protection is not required, wear goggles or full face shield for eye protection when handling liquid.
2. Following exposure, immediately remove clothing shoes and socks. Do not reuse contaminated clothing or shoes until thoroughly cleaned and disinfected. Soiled clothing cannot be re-used.
3. Do not wear gloves of any type, or rubber protective clothing, or rubber boots.
4. If liquid fugitive splashes or spills on clothing, remove them at once as they will be an insidious source of irritation.

SPILL OR LEAK PROCEDURE:

1. Evacuate the immediate area of the spill or leak. Use SCBA or combination air-supplied/SCBA respirators for entry into the affected area to remove problem. Move leaking or damaged cylinders or containers outdoors or to an isolated location, observing strict safety precautions. Mark spill if possible. Allow spill to evaporate. Do not permit entry into spill area by unprotected persons until the concentration of methyl bromide is determined to be less than 5 ppm (20 mg/cu.m).
2. Containers of soil, water, and other cleanup debris in a toxic spill should be placed in the National Response Center (NRC) (202) 686-8000 if reportable quantity of 1000 lbs. is exceeded.

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4.29

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 89.5%
FOR USE ONLY BY PROFESSIONAL FUNGICIDES

ACTIVE INGREDIENTS:	
METHYL BROMIDE	89.5%
INERT INGREDIENTS:	
CHLOROPICRIN	10.5%
TOTAL	100.0%

This product weighs 14.4 pounds per gallon.


TRICAL

P.O. 304 1327 • HOLLISTER, CA 95024

E.P.A. EST. 11220-CA-1,2,3,4;FL-1
 E.P.A. REG. NO. 11220-17

NET CONTENTS LBS.

KEEP OUT OF REACH OF CHILDREN

DANGER  **PELIGRO**

POISON

PRECAUCION AL USARIO: Si usted no lee Ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

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

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 any 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 Panel for Additional Precautionary Statements

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ENVIRONMENTAL HAZARD

This pesticide is toxic to wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, irrigation canals, or public waters unless this product is specifically approved and authorized in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the 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 copper, brass, 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 fumigant pressure system or containers until metal tested and satisfactory for this purpose.

PRECAUTIONS 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 members 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's cap open 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 obtainable. 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 "potable drinking water" to be used for drinking.
8. Field should be reasonably free of trash before starting the fumigation.

DURING FUMIGATION:

1. This fumigant should not be applied when there is an atmospheric inversion, since uncomfortable concentrations of chloroform may drift to nearby areas. Immediately cover treated area with plastic tarpaulin for a minimum of 48 hours when the inversion depth is less than 15'.
2. Do not lift injection chutes to turn at the end of a pass until fumigant has drained from system following closure of shut-off valve.
3. If trash is inadvertently pulled by the chutes to the ends of the field when fumigating, it must be covered by lifting the chutes, 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 vapors above the permissible exposure levels could occur.

FOLLOWING FUMIGATION:

1. Post all treated areas with warning signs, available from your dealer or representative.
2. No children, unauthorized people, or animals should be in the fumigation area for 48 hours.
3. When tarpaulin is used, two trained persons must be present during removal of the tarpaulin.

SPILL AND LEAK PROCEDURE:

1. In case of a rupture of hose or fitting while applying fumigant, immediately stop tractor and motor. Evacuate immediately area of spill or leak. Use SCBA or fumigation air-supplied SCBA respirator for entry into affected area to correct the problem. Approach from upwind to avoid respiratory protection until spill has evaporated or leak has been fixed.
2. Do not reenter area without respiratory protection until spill has evaporated or 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 absorption to crops, avoid using fertilizers containing ammonium salts and use only fertilizers containing nitrate until after the crop is well established and the soil temperature is above 55 degrees F. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

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B. SPECIAL INSTRUCTIONS FOR THE CONTROL OF ARMILLARIA MELLEZA (OAK ROOT FUNGUS) ON DECIDUOUS FRUITS AND NUTS, CITRUS, AND VINEYARDS

PRETREATMENT SOIL PREPARATION:
To obtain the best control of Armillaria on oak with methyl bromide, the soil must be dry to a depth requiring treatment. This can be accomplished by: 1st planting underground in the spring, irrigating until the grass has established itself, then withholding further irrigation. 2nd, necessarily, by allowing plants to grow without irrigation. When soil is dry, cut and remove grass plants and expose the soil to a depth of 18 inches and till to smoothness.

SOILS AND METHODS OF APPLICATION:
This is a program of repeat treatment. Crops which are planted in this treated soil will bear harvestable fruit for a period of at least 18 months. Methods and rates of application are as follows:
1. Non-Tarp Chisel Application (not for use in California): After the soil has been properly prepared, inject 100-170 pounds of methyl bromide per acre by chisel application with chisels spaced up to 18 inches apart to a depth of 14-18 inches. In the row strip treatments may be made by using a single chisel. Methyl bromide should be applied in the row strip by using a single chisel. The chisel should be set to penetrate to the bottom of the soil to the depth of 14-18 inches. The surface should be smoothed immediately after the chisel has passed. To be sure that the soil and irregular cover on area strip treatments beyond the chisel lines to effect a good seal.
2. Tarp Chisel Application: After the soil has been properly prepared, apply 100-170 pounds of fumigant per acre by chisels spaced up to 18 inches apart, as described above, and cover with a polyethylene film seal.
3. Deep Injection Super-Probe Treatment: Use one pound of methyl bromide per injection site in light soils (two pounds in fine-textured soils) to a depth of 18 inches or more below the soil surface. Space and injection sites 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.

EFFECTIVE AND RESISTANT STRAINS:
1. To insure the proper time-concentration relationships to control oak root fungus for chisel applications we recommend a seven day exposure period before removing the polyethylene film cover, and a two day interval of time before injecting Super-Probe fumigant after which planting or replanting of trees since or other susceptible crops may begin to take place.
2. Methyl bromide will not usually control oak root fungus under very unfavorable conditions. However, some control may be observed on susceptible materials such as ornamental birdwood and rhododendron of ornamentals.

C. NON-TARP NEMATODE CONTROL:
For control of nematodes including *Heterodera* spp., *Glyptotendipes* spp., *Citromegdites*, *Pratylenchus*, and *Paratylenchus* on deciduous fruits, nuts, citrus and vineyards.

PRETREATMENT SOIL PREPARATION:
Fumigation of the soil to the depth to which effective treatment is required. The soil should be worked until free of clods or large clumps and residues from previous crops should be worked into the soil. The soil should be worked prior to fumigation. To insure maximum penetration of the soil at the point of injection, the soil should be worked to a depth of 1-1 1/2 meters depending on soil type. However, in heavy soils, the soil surface may be smoothed by means of a harrow or similar implement. The soil should be worked to a depth of 18 inches or more below the soil surface. Space and injection sites 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. Temp of soil at the depth of 6 inches. Do not fumigate when soil temperature is below 50 F.

SOILS AND METHODS OF APPLICATION:
This is a program of repeat treatment. Do not apply to soil where trees or crops will bear harvestable fruit within 18 months. A waiting period of at least 18 days should be observed between application and planting. Methods and rate of application are as follows:
1. Chisel Application: After the soil has been properly prepared, inject 100-170 pounds of methyl bromide per acre by chisel application with chisels spaced up to 18 inches apart to a depth of 14-18 inches. In the row strip treatments may be made by using a single chisel. Methyl bromide should be applied in the row strip by using a single chisel. The chisel should be set to penetrate to the bottom of the soil to the depth of 14-18 inches. The surface should be smoothed immediately after the chisel has passed. To be sure that the soil and irregular cover on area strip treatments beyond the chisel lines to effect a good seal.
2. Deep Injection Super-Probe Treatment: Use one pound of methyl bromide per injection site in lighter soils (two pounds in fine-textured soils) to a depth of 18 inches or more below the soil surface. Space and injection sites 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. Temp of soil at the depth of 6 inches. Do not fumigate when soil temperature is below 50 F.

Methyl bromide used without a tarp will not usually control oak root fungus. However, some control may be observed on susceptible materials such as ornamental birdwood and rhododendron of ornamentals.

D. POTTING MIX FUMIGATION DIRECTIONS:

Potting mixes including decomposed manure, soil sludge and sawdust can be fumigated with methyl bromide. 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. Pile the mix to a height of 18 inches. The sides to be treated provided perforations are made in the pile surface at one foot intervals to assist penetration. Once the pile has been sealed, the soil surface 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 tube in evaporating pans spaced about 10 feet apart on the pile surface. Cover with a polyethylene covering or other non-permeable material of 4 mil. or greater thickness. Seal the edges of the covering covering with a strip of soil or by means of sand or gravel. Introduce the fumigant into the evaporating pans at a rate of 10 pounds of the mix per cubic foot (see Table II for proper ratios) and exposure time varies for 12-24 hours before planting.
Potting mixes in flats or trays should be treated. Arrange the flats in rows which cross streets no more than 3 feet high than cover and seal as described above. Introduce the fumigant at the top end in the center of the stack into evaporating pans or by means of the hot gas outlet at a rate of 4 pounds per 100 cubic feet. Do not fumigate when soil temperature is below 50 F. Do not fumigate when soil temperature is below 50 F. Do not fumigate when soil temperature is below 50 F.

**METHYL BROMIDE 89.5%
SOIL FUMIGATION USES**

TREATMENT USE	RATE lb/a	EXPOSURE TIME (hours)
Field soils to be planted to: beverage spruce, cauliflower, eggplants, lettuce, mushrooms, onions, dry bulb, peppers, pineapples, strawberries, tomatoes	100-140	24-48
Field soils to be planted to: citrus, deciduous fruits and nuts, and strawberries	400-675** 435-675***	24-48
Urban soils: lawns, ornamentals, floral crops, forest trees, sanitary (non-food)	100-435	24-48
Special use soils: a. food crops	100-435	24-48
b. lawns	100-140	24-48
c. ornamentals and forest trees (non-food)	100-435	24-48
d. lawns	75	24-48
Part of U.S.A.	1 lb/100 sq ft	24-48

* See the label, labelled rates for such and heavy clay soils.
 ** Low injection application.
 *** Typical application.

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 label. Seller does not warrant that product has any other warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, express or implied, insofar as the use of this product conforms to label instructions or under abnormal conditions of use, or that conditions are reasonably foreseeable to seller and buyer outside the scope of any label use.