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PRODUCT BULLETIN

NAMCO Methyl Bromide (EPA Reg. No. 5316-41-AA)
NAMCO Namfume (EPA Reg. No. 5316-42-AA)
NAMCO Pinbfume (EPA Reg. No. 5316-31-AA)

ACCEPTED
MAY 21 1975
Under the [illegible] Insecticide, Fungicide, [illegible] Act, as [illegible] pesticide registered under 5316-31

556-123

Preplant treatment of soil or other planting media with NAMCO Methyl Bromide, Namfume, or Pinbfume will aid in the control of the following soil-borne pests: insects (wireworms), nematodes, (meadow or lesion, root-knot, citrus, sting, stubby-root dagger, cyst formers); soil diseases (*Verticillium* and *Fusarium* wilts, damping off); some broadleaf and grassy weeds and their seeds.

Prepare Seed or Plant Bed as You Would For Planting. The soil of areas to be treated should be worked into a fine, loose condition just prior to treatment. Soil should be free of clods and unpulverized pieces of sod except in sandy soils. The fumigant will effectively penetrate only as deep as the soil is properly worked, except in loose soils.

After the soil has been prepared, make a furrow or trench around the margins. This will provide an easy and effective way of sealing the gasproof cover by burying its edges in the furrow before releasing the fumigant.

Decomposed compost and manure can be treated in the same manner but such material should have a temperature above 60 F., be loose, and have sufficient moisture for good weed seed germination. Piles of these materials should be located on wet ground or a concrete floor and *be leveled* to not more than 18 inches in depth before application. Piles two to three feet high can also be fumigated if perforated at 12-inch intervals. The gas should always be applied above the pile to allow for the diffusion of the gas. These materials in bulk or in flats and pots can also be treated in a gastight vault or drum. Conduct such fumigations in a well-ventilated area or outdoors.

Place Cover Supports at Regular Intervals. Because the gas must circulate freely under the gasproof plastic cover to give satisfactory control, the cover should be supported above the evaporating containers. *Do not* allow the cover to be flat on the surface of the material to be treated during fumigation.

Place Evaporating Containers on Prepared Bed. Insert Applicator Tubing in Containers. Evaporating containers are essential for the volatilization and uniform dispersion of the fumigant. These may be tin pans, or basins made of plastic covering. Evaporators should be placed at intervals of approximately 30 feet. NOTE: Evaporating containers are not needed if vaporized fumigant is used.

Anchor one end of each length of polyethylene tubing from the applicator into each evaporating container with short length of pipe, rock or other suitable weights so that the liquid is directed into the container. The other free ends of the polyethylene tubes should extend out from under the cover so that the applicator can be readily attached to them to the cylinders containing the fumigant.

Place Gasproof Plastic Cover Carefully Over Area To Be Treated. Seal Edges Of The Cover With Dirt. After the supports and tubing are in place, the gasproof cover should be laid with its edges in the furrow and sealed with earth. Enough earth [illegible] to cover the edges to a width of 6 to 10 inches, after which it should be tamped down firmly. [illegible] preventing damage to cover. It is wise to place a shovelful of dirt on the edge of the cover every few feet [illegible] to keep the wind from blowing it. The sides and other end are then sealed tightly with earth.

Applying The Fumigant. The fumigant may be applied as either a liquid or a gas. The gas results from heating of the fumigant using a coil of copper [illegible] heated water. This method eliminates the need for the evaporating container. In either case the [illegible] be fitted with the proper adapters which allows the gas to be dispensed beneath the tarp [illegible]

Remove Cover After Recommended Exposure Period. Aerate. Prepare Seed or Plant Bed For Planting. The minimum exposure period is 24 hours. If the soil temperature is below 60 F., a 48-hour exposure period is necessary.

When To Plant After Treatment. [illegible] before planting. Some seeds such as tobacco can be planted 48 hours after [illegible] longer aeration period may be required before planting certain flower seeds. Usually [illegible] necessary for proper soil aeration. Set living plants in treated soil after it has been [illegible] advisable to work the soil thoroughly one day after the removal of cover [illegible]

Pest Control Desired	Type of Soil or Material	Dosage	Minimum Exposure Time[3]	Aeration Time Before Planting[4]
Nematodes, insects and weed seeds	**Turf Renovation:**[1] lawns, parks, golf greens, athletic fields and other ornamental and recreational turf areas.			
	Nonfood and Nonfeed Crop Areas: Seed and plant beds for tobacco, flowers, shade and forest trees, ornamental shrubs and vines, and other similar plants. Also vegetables *for production of transplants only*. Permanent planting sites for tobacco, flowers, shade and ornamental shrubs and vines and other similar plants.	1 lb. per 100 sq. ft	24 hours	48 hours
	Well rotted compost manure, potting soil, and top soil.	½ to 1 lb. per cu. yd	24 hours	72 hours
	Mulching straw or hay.[2] ***TREATED STRAW OR HAY ARE NOT TO BE FED TO ANY ANIMAL***	**1 lb. per 4 bales**	48 hours	48 hours
Damping-off and organisms such as: *Pythium, Rhizoctonia Fusarium*	**Turf Renovation:** Same sites as listed above. Nonfood and Nonfeed Crop Areas: **Nonfood and Nonfeed Crop Areas:** Same plants as listed above.	2 lbs. per 100 sq. ft.	24 hours	72 hours or longer
	Well rotted compost and manure.	1 lb. per cu. yd.	24 hours	72 hours or longer

[1]Suggestions for establishing weed free turf. Lawn grass (seed or sprigs) may be planted following treatment with NAMCO Methyl Bromide, Namfume or Pintofume in order to establish a weedfree lawn. Treat the soil according to the above directions. Where an old lawn is to be renovated, the turf is usually worked up before fumigating. Recent experiments have shown that the undisturbed turf may be killed by fumigation and the dead sod sprigged or seeded after removal of the cover. Frequent sprinkling after seeding will insure a uniform stand.

[2]Suggestions for fumigating mulching materials. Straw or hay should be thoroughly soaked several days prior to treatment since seeds must be moist at time of fumigation for best results. At the time of treatment the bales are merely piled up and covered with a plastic cover with edges sealed in the same manner as recommended for soil.

[3]Exposure and aeration times should be doubled if soil temperature is between 50°F. and 60°F. NAMCO Methyl Bromide, Namfume or Pintofume should not be used if temperature is below 50°F.

Seeds of certain species of plants, such as clover; round-leaf mallow, morningglory, filaree and others with hard seeds may require a higher dosage or a longer exposure period for effective control.

[4]Soil in which plants are to be set should be aerated for a week to ten days.

[5]Growing difficulties may be experienced with carnations, conifers, delphiniums, holly, multiflora rose, salvia, snapdragons, and certain other crops.

USE PRECAUTIONS

Every grower should use methyl bromide and/or chloropicrin containing fumigants on a small scale under his growing conditions for at least a full growing season before extensive use on any crop. These materials have given excellent results with a wide variety of soils and plants, however, for reasons not clearly understood, plant growth has occasionally been unsatisfactory following treatment. For example, some difficulty has been experienced with conifers, salvia, snapdragons, carnations, multiflora roses, holly, as well as certain other plants. The following precautions must be observed if good results are to be expected.

1. Fumigation with methyl bromide and/or chloropicrin fumigants sometimes slows down the rate of nitrification (the conversion to nitrates from ammonia by bacterial action). Certain ammonia-sensitive plants, such as tomatoes, may suffer growth inhibition or stand reduction when planted in fumigated soils containing high amounts of ammonia nitrogen. To lessen this hazard at least ½ and preferably all of the nitrogen fertiliter added immediately before or soon after fumigation should be in the form of nitrate nitrogen. This hazard may also be reduced by delaying planting until several months after fumigation. If a nitrate form of nitrogen such as sodium or calcium nitrate is not readily available, ammonium nitrate used sparingly will supply the nitrogen needed without risk. Phosphorous, potassium and other plant nutrients should be used according to soil needs.

2. Application should be made several months prior to planting in soils high in organic matter such as muck, compost, heavily manured soils, since they seem more likely to undergo some change (possible effect on microorganisms) resulting in poor growth.

3. Do not treat very cold (below 50°F.), very wet or dry soils.

4. Be sure treated plots are free from gas before planting seed or setting out plants. If there is doubt as to complete aeration, working the soil after treatment will aid, particularly when the soil is cool and/or wet.

5. Do not contaminate fumigated areas by walking from unfumigated to fumigated soil. Clean your shoes thoroughly if this is necessary. If the treated bed is in a location where flooding or washing is possible after rains, plow a furrow or make a trench around the treated area for proper drainage. Wooden frames around the beds are also satisfactory for preventing this type of contamination.

6. Hay or straw treated directly or harvested from treated soil is not to be fed to any animal.

TREATMENT OF PLANT STAKES FOR 'CLEAN-UP' PRIOR TO USE. Treat with 3 pounds of NAMCO Methyl Bromide, Namfume or Pintofume per 1000 cubic feet under tarp. Minimum exposure time should not be less than 48 hours. Consult County Agricultural Commissioner for additional directions and instructions.

CONSULT LABEL FOR ADDITIONAL DIRECTIONS AND PRECAUTIONS
OBSERVE THESE CAREFULLY

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