

FEB 20 1992

Mr. Dennis Morgan  
Oregon-California Chemical, Inc.  
29454 Meadowview Rd.  
Junction City, Oregon 97448

Dear Mr. Morgan:

Subject: Label Amendment - Metam Sodium  
Or-Cal Sectagon II  
EPA Registration No. 52251-1  
Metam S.A.U.  
EPA Registration No. 52251-42 /  
Your Applications Dated January 23, 1992

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is acceptable provided you:

Submit/cite all data or other material required for registration/reregistration of your product under FIFRA section 3(c)(5) or FIFRA section 4 when the Agency requires all registrants of similar products to submit such data.

Submit five (5) copies of the final printed label.

If you have any questions regarding this matter, please contact me or Sidney Jackson at (703) 305-7610.

Sincerely yours,

SL

Susan T. Lewis  
Product Manager (21)  
Fungicide-Herbicide Branch  
Registration Division (H7505C)

## OR-CAL METAM-S.A.U.

### RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or person under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

#### Booklet

Oregon-California Chemicals, Inc.  
29454 Meadowview Road  
Junction City, OR 97448

EPA Registration No. 52251-42

### FUMIGANT SOLUTION FOR SMALL AREA USES

For suppression of: Nematodes, Fungi, Bacteria, Weeds, Weed seeds and volunteer seeds.

#### ACTIVE INGREDIENTS

Sodium methylthiocarbamate (anhydrous) . . . . .	32.7%
INERT INGREDIENTS . . . . .	67.3%
TOTAL . . . . .	100.0%

Contains 3.18 lbs. active ingredient per gallon

### KEEP OUT OF REACH OF CHILDREN

## DANGER PELIGRO

PRECAUTION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicada ampliamente.

### STATEMENT OF PRACTICAL TREATMENT

**FIRST AID:** Immediately start the procedures given below and contact a Poison Center, a physician, or the nearest hospital. Report the type and extent of exposure, describe the victim's symptoms, and follow the advice given.

**If on skin:** Immediately flush skin with large amounts of running water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

**If in eyes:** Immediately flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get medical attention immediately.

**If inhaled:** Remove to fresh air. If not breathing, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen, preferably with a physician's advice. Get medical attention immediately.

**If swallowed:** Immediately give several glasses of water but do not induce vomiting. If vomiting does occur, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious person.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

## DANGER

Corrosive, causes eye and skin damage. Do not get in eyes, on skin, or on clothing. Harmful or fatal if swallowed. Do not breathe vapor or spray mist. Use proper protective clothing when handling (see Protective Clothing and Equipment Statement). Wash hands, arms and face thoroughly with soap and water after handling and before eating or smoking. Wash clothing and shoes before reuse. Do not apply to food or forage. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

### ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment wash water. Apply this product only as specified on this label.

### USE PRECAUTIONS

Keep children and pets out of treated area. Keep off desirable lawns and plants. Do not apply within 3 feet of the drip line of desirable plants, shrubs or trees. Do not use in confined areas without adequate ventilation. Do not use in greenhouses where desirable plants are present or where fumes may enter nearby houses containing desirable plants. Keep container tightly closed when not in use. Do not store near feed or food.

### PROTECTIVE CLOTHING AND EQUIPMENT REQUIREMENTS

1. The following protective clothing and equipment are required to be used by persons engaged in carrying out any operations that are likely to involve direct contact with METAM-S.A.U. including mixing-loading, equipment calibrations or adjustments, clean up and repair of application equipment (equipment includes but is not restricted to; shanks, tillers, drop lines, and holding tanks), sampling, clean up of spills, fumigant transfer, and rinseate disposal, or by any other person engaging in activities likely to result in direct contact with the product. This protective equipment must also be used for any operations that are done within 6 feet of unshielded, pressurized hoses containing METAM-S.A.U.

a. A properly FTT TESTED NIOSH- or MSHA-approved half-face respirator with organic vapor cartridges plus non-venting chemical goggles, or a NIOSH- or MSHA- approved full-face respirator with organic vapor cartridges.

b. Body covering that has long sleeves and long pants. When a closed system is not used, mixers and loaders must also wear a chemical resistant apron or cloth coveralls.

c. Chemical resistant gloves and boots.

2. The following protective clothing must be worn at all times by persons operating or monitoring application equipment or entering treated areas within 48 hours after completion of application. See: REENTRY AND WORKER SAFETY STATEMENT on this label.

a. Chemical resistant footwear

b. Body covering that has long sleeves and long pants.

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3. The following protective clothing and equipment must be immediately available at all times for use by persons operating tractor drawn ground application equipment or monitoring application equipment, or entering treated areas within 48 hours after completion of application. See: REENTRY AND WORKER SAFETY STATEMENT on this label.

a. A properly **FTT TESTED** NIOSH- or MSHA-approved half-face respirator with organic vapor cartridges plus non-venting chemical goggles, or a NIOSH- or MSHA-approved full-face respirator with organic vapor cartridges. This equipment must be worn when the pungent, rotten egg odor of METAM-S.A.U. is detected.

b. Chemical resistant gloves. These must be worn when a person is engaged in carrying out any operation that is likely to involve direct contact with the product, including those operations listed in Paragraph 1, above.

### RE-ENTRY AND WORKER SAFETY STATEMENT

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter treated areas for 48 hours after application unless protective clothing is worn. (Chemical resistant footwear and body covering with long sleeves and long pants; a respirator if odor is detected and chemical resistant gloves if direct contact with the product is involved.)

Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in treated areas or in an area to be treated with this product.

Oral warnings must include the exact information specified in the written warnings. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers.

Oral and written warnings must include the following information:

**DANGER:** Area treated with metam-sodium on (DATE) \_\_\_\_\_. Do not enter without appropriate protective clothing for 48 hours after application. In case of accidental exposure see Statement of Practical Treatment found on the METAM-S.A.U. label.

- Posting is required if a tarp is not used to cover treated area. Consult your State Department of Agriculture for further information.
- Posting is not required when a tarp is used to cover treated areas.

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**STORAGE:** Store in a cool, dry place. Keep container closed when not in use. Do not store below 0° F. Product crystallizes at lower temperatures. Warm or store at higher temperatures and mix to redissolve crystals and assure uniformity before use.

Do not stack more than three drums high. Leaking or damaged drums should be placed in overpack drums for disposal. Spills should be absorbed in sawdust or sand and disposed of in a sanitary landfill. Keep container closed when not in use.

**PESTICIDE 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.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### CONDITIONS OF SALE - LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Oregon-California Chemicals, Inc. or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. Oregon-California Chemicals, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of Oregon-California Chemicals, Inc.. Oregon-California Chemicals, Inc. makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose. The exclusive remedy against Oregon-California Chemicals, Inc. for any cause of action relating to the handling or use of this product is a claim of damage and in no event shall damages or any other recovery of any kind against Oregon-California Chemicals, Inc. exceed the price of the product which causes the alleged loss, damage, injury, or other claim. Oregon-California Chemicals, Inc. shall not be liable and any and all claims against Oregon-California Chemicals, Inc. are waived, for special, indirect, incidental, or consequential damages or expense, of any nature, including, but not limited to, loss of profits or income, whether or not based on Oregon-California Chemicals, Inc. negligence, breach of warranty, strict liability in tort or any other cause of action. Oregon-California Chemicals, Inc. and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

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## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Use only according to label booklet and/or side panel instructions. Do not apply this product through any irrigation system.

### READ ALL LABEL DIRECTIONS BEFORE USING

For suppression of: Nematodes, Fungi, Bacteria,  
Weeds, Weed seeds and volunteer seeds.

## PRODUCT INFORMATION

METAM-S.A.U. is a water-soluble liquid. When applied to properly prepared soil, the liquid is converted into a gaseous fumigant. After a sufficient waiting period, the gas dissipates, leaving the soil ready for planting. METAM-S.A.U. is recommended for the control of weeds, plant parasitic nematodes, and soilborne fungi that cause reductions in the yield and quality of ornamental, food and fiber crops.

METAM-S.A.U. will control only those pests in the fumigation zone at the time of treatment. Recontamination may occur subsequent to the fumigant's dissipation from the soil.

Weeds and germinating weed seeds that are controlled include annual bluegrass, Bermudagrass, chickweed, dandelion, ragweed, henbit, lambsquarter, Amaranthus sp. (pigweed, careless weed), watergrass, Johnsongrass, nutgrass, wildmorning glory, purslane, barnyardgrass, crabgrass, groundsel, prickly lettuce, pineappleweed, settleaf, goosefoot, nightshade, Shepherdspurse, stinging nettle, Malva, London rocket, and fiddleneck. The best weed control is obtained when METAM-S.A.U. is applied to weeds that are actively growing.

The soil-borne plant pathogenic fungi controlled include species of *Verticillium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Sclerotinia*, as well as *Sclerotium rolfsii*, *Armillaria mellea* (Oak root fungus), and *Plasmodiophora brassicae* (Club root of crucifers).

The plant parasitic nematodes which METAM-S.A.U. controls include root knot, lesion, dagger, lance, needle, pin, reniform, stunt, stubby root, sting and spiral. Note: METAM-S.A.U. will only control nematodes that are in the fumigated zone at the time of treatment, in Oregon and Washington, METAM-S.A.U. will only suppress *Meloidogyne chitwoodi*.

Other pests controlled include symphylids or garden centipedes.

## Treatment Guidelines

For optimum results from soil fumigation with METAM-S.A.U. certain procedures should be observed at designated times in the treatment program. Described in this section are important guidelines for each of the four stages of the treatment process: planning a METAM-S.A.U. application preparing a field for application applying METAM-S.A.U. preparing for planting after application of METAM-S.A.U.

Your sales representative will help you select the best treatment program for your particular needs.

## Planning a METAM-S.A.U. Application

### Time of Application

METAM-S.A.U. is applied after harvest and 14-21 days before a new crop is planted. In some areas of North America, fall applications are preferred because the fumes dissipate over the winter, allowing planting to begin as soon as favorable springtime conditions arrive.

### Application Rate

Apply 3/8 to 2 quarts of METAM-S.A.U. per treated 100 sq. ft. depending on crop, target pest, and soil properties. Soil properties to consider when determining the application rate include the depth of soil to be treated, soil texture and percent organic matter.

### Target Pest and Depth of Treatment

For control of weeds and fungi causing seed or seedling diseases, treatment of only the top 2 to 4 inches of soil may be required. For control of nematodes and fungi which occur throughout the rhizosphere, treatment to depths of greater than 4 inches may be required. For a given soil type, the required application rate will increase proportionately with the depth of treatment required. For example, if 1 quart of METAM-S.A.U. per 100 sq. ft. is required to treat 4 inches, then 2 quarts of METAM-S.A.U. will be required to treat to a depth of 8 inches. Choose the appropriate application method to distribute METAM-S.A.U. evenly throughout the soil to the required depth.

### Organic Matter in the Soil

Plant material under the soil surface should be thoroughly decomposed before METAM-S.A.U. is applied. Because of the absorbing effect of humus, soils with high levels of organic matter under the surface require higher than usual doses of METAM-S.A.U. For example, muck soils require twice the amount of fumigant that would be used in mineral soils.

### Soil Texture

Application rates will vary with the soil texture. For instance, clay soils require more METAM-S.A.U. than light sandy soil.

### Preparing a Field for Application

#### Soil Cultivation

Cultivate the soil thoroughly before treatment, breaking up all large clods. If the soil crusts following pretreatment irrigation, lightly cultivate it again before treatment with METAM-S.A.U.

#### Soil Temperature During Treatment

At the time of fumigation, the soil temperature should be in the range of 40°-90° F (4°-32° C) at a depth of 3 inches. To prevent rapid evaporation of the product from the soil avoid treating soil during times of the day when soil temperature exceed 90° F (32° C). Instead, make the application during the early morning hours when the soil temperature is coolest.

#### Measuring the Soil Moisture

Application should be made under "good seed bed moisture condition"; that is, the soil moisture should be about 50-80% of field capacity. As a simple field test, squeeze a handful of soil into a ball and then gently try to break it apart with your fingers. If it breaks easily, the soil moisture content is sufficient. If it will not break

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apart or if water can be squeezed out, it is too wet. When necessary, 1-2 weeks prior to treatment sprinkle or flood irrigate the soil to increase the moisture content. The soil must be moistened to at least the desired treatment depth.

### Phytotoxicity

METAM-S.A.U. is phytotoxic. Protect valuable, non-target plants by stopping soil applications of METAM-S.A.U. at least 3 feet short of the drip line of trees, shrubs, and other desirable plants. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

### Applying METAM-S.A.U.

#### Use of Diluted METAM-S.A.U.

Do not store the diluted product. Use METAM-S.A.U. promptly after it has been mixed with water. In dilute solutions in water, METAM-S.A.U. decomposes over a period of weeks. Although METAM-S.A.U. is stable in its concentrated form. It is unstable in acid dilutions.

#### Odors During Treatment

Strong odors during or after treatment are a signal that the fumigant is escaping and needs to be sealed in the soil.

#### Sealing METAM-S.A.U. in Soil

To be most effective, METAM-S.A.U. should be sealed in the soil. Sealing methods include applying irrigation water or plastic tarpaulin and packing soil with a roller or drag. Tarpaulin should be spread loosely over the treated area and secured to prevent removal by wind. They should remain in place for at least 48 hours. Seven days after treatment, the sealed area should be cultivated to a depth of 2 inches to aerate the soil. When tarpaulin are used to seal the soil, wait at least 21 days before planting.

### TARPING REQUIREMENTS

The use of a tarp is required when METAM S.A.U. is applied near (within 1/2 mile) populated areas such as residential areas, schools, hospitals, commercial or office buildings, factories etc. Follow the TARPING DIRECTIONS section below. When a tarp is used according to the directions below, posting is not required.

When the area to be treated is more than a half mile from populated areas such as residential areas, schools, hospitals, commercial or office buildings, factories etc., the use of a tarp is not required. When a tarp is not used, posting is required. Read and carefully observe the REENTRY AND WORKER SAFETY STATEMENT on this label.

### TARPING DIRECTIONS

After applying METAM S.A.U., immediately sprinkle treated area with water to seal the soil. Sprinkle to the point of runoff. **NOTE: DO NOT ALLOW WATER TO RUN OFF TREATED AREA AS PLANTS IN ADJOINING AREAS MAY BE DAMAGED.** Immediately cover the treated area with plastic tarp. Weight the tarp down around the edges to prevent wind or inadvertent removal of tarp. **NOTE: WEIGHTS MUST BE HEAVY ENOUGH TO DETER ANIMALS AND CHILDREN.** Do not remove tarp for at least 48 hours.

## USES, APPLICATION METHODS AND RATES FOR SHALLOW PESTS IN SEED BEDS, PLANT BEDS, LAWNS AND OTHER LIMITED AREAS

### BEFORE APPLYING METAM-S.A.U.

A week before applying METAM-S.A.U. always thoroughly cultivate the area to be treated, breaking up clods and loosening soil deeply and thoroughly. Moisten the soil after cultivation to the desired depth. If the soil has crusted, cultivate lightly immediately before application.

### AFTER APPLYING METAM-S.A.U.

After applying METAM-S.A.U., immediately sprinkle treated area with water to seal the soil. Sprinkle to the point of runoff. **NOTE: DO NOT ALLOW WATER TO RUN OFF TREATED AREAS AS PLANTS IN ADJOINING AREAS MAY BE DAMAGED.** Carefully read and observe the TARPING REQUIREMENTS and TARPING DIRECTIONS section of this label.

### Sprinkler Can Method:

Place 1 pt. METAM-S.A.U. (1 1/2 pt. on very heavy soils or for deep rooted weeds) in a sprinkling can, fill with water and sprinkle uniformly over 50 sq. ft. of well prepared soil.

### Commercial Mixer Proportioner Method:

Add 1 qt. METAM-S.A.U. to 3 qts. water in a bucket or other container and apply through the mixer proportioner to an area of 100 sq. ft. of treated soil. Add additional water as needed to wet soil to the desired depth of control.

### Rotary Tiller Method

Spray or sprinkle diluted METAM-S.A.U. immediately in front of tiller. Use 1 qt. METAM-S.A.U. in 2 1/2 gal. water per each 100 sq. ft. Follow immediately with a roller to smooth and compact the soil surface.

### CULTIVATION AND PLANTING AFTER APPLICATION

On well drained soils of light to medium texture which are not excessively cold or wet following application, planting may take place 14 to 21 days after treatment. If soils are heavy or especially high in organic matter or remain wet and/or cold (below 60° F) following the application of METAM-S.A.U., minimum interval of 30 days should be observed. On heavy, wet soils, light surface cultivation to breakup crusting and promote drying of the soil should be done 5 to 7 days after application. This cultivation may be repeated as necessary. To avoid reinfesting treated soil, cultural practices should be such that untreated soils are not mixed with treated soils. Seven days after treatment cultivate areas to a depth of 2 inches to aerate the soil.

### SPECIAL INSTRUCTIONS

When treating potting soil, or heavier field soils, including soils high in clay or organic matter, it is especially important that the soil be allowed to aerate and dry thoroughly after using METAM-S.A.U.. During cold and/or wet weather, frequent shallow cultivations may aid the escape of METAM-S.A.U. from the soil. If in doubt, transplant a seedling plant and examine for injury before planting crop.

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## TREATMENT OF TREE REPLANT SITES

After removing dead or diseased tree and as much of the root system as possible, make a shallow basin over the planting site.

Add METAM-S.A.U. to the stream of water while filling the basin. Use 1 qt. METAM-S.A.U. per 100 sq. ft. in sufficient water (depending on soil type) to penetrate at least 6 ft.

For control of oak root fungus, use a basin at least 20 x 20 feet square. Increase dosage to 2 qt. METAM-S.A.U. per 100 sq. ft. in sufficient water to penetrate to the depth of root system. If water is tanked to the planting site, add METAM-S.A.U. to the water and mix before filling basin.

After applying METAM-S.A.U., immediately sprinkle treated area with water to seal the soil. Sprinkle to the point of runoff. **NOTE: DO NOT ALLOW WATER TO RUN OFF TREATED AREAS AS PLANTS IN ADJOINING AREAS MAY BE DAMAGED.** Carefully read and observe the TARPING REQUIREMENTS and TARPING DIRECTIONS section of this label.

## PREVENTION OF ROOT GRAFT TRANSMISSION OF DUTCH ELM AND OAK WILT DISEASE

Immediately after a tree is diagnosed as having Dutch Elm or Oak Wilt disease, isolate the diseased tree from healthy trees with the METAM-S.A.U. treatment.

If a diseased tree is less than 20 feet from a healthy tree or has advanced wilt symptoms, it may be necessary to treat at two sites - one between the diseased and the first healthy-appearing tree and one between the first and the second healthy-appearing trees. This measure is advisable because the casual fungus may have already passed from the diseased to the first healthy-appearing tree before METAM-S.A.U. is applied.

Use METAM-S.A.U. diluted one part to three parts water for Dutch Elm disease and diluted one part to ten parts of water for Oak Wilt disease. Drill holes in soil approximately 3/4 to 1 inch in diameter, 15 inches deep to 6 to 9 inches apart. Fill each hole with diluted METAM-S.A.U. to within 2 inches of the soil surface.

Make the line of treatment sufficiently only to kill all roots of the two adjacent trees that are likely to be root-grafted.

Apply the chemical slowly and carefully to avoid overflowing the drilled holes, this will reduce grass kill. Tamp each hole closed with the heel. Allow at least two weeks after treatment before removing the diseased tree.

After applying METAM-S.A.U., immediately sprinkle treated area with water to seal the soil. Sprinkle to the point of runoff. **NOTE: DO NOT ALLOW WATER TO RUN OFF TREATED AREAS AS PLANTS IN ADJOINING AREAS MAY BE DAMAGED.** Carefully read and observe the TARPING REQUIREMENTS and TARPING DIRECTIONS section of this label.

## TREATMENT OF POTTING SOIL

After applying METAM-S.A.U., immediately sprinkle treated area with water to seal the soil. Sprinkle to the point of runoff. **NOTE: DO NOT ALLOW WATER TO RUN OFF TREATED AREAS AS PLANTS IN ADJOINING AREAS MAY BE DAMAGED.** Carefully read and observe the TARPING REQUIREMENTS and TARPING DIRECTIONS section of this label.

### A. SPRINKLE METHOD

1. Spread soil in a smooth layer 4 inches high on concrete or on pre-treated soil.
2. Sprinkle METAM-S.A.U. at rate of 1 pint in 5 gallons of water per 100 sq. ft. of surface area.
3. Layers can be treated on top of another.
4. Sprinkle top layer with sufficient additional water to seal the surface, or cover with tarp (plastic, kraft paper, etc.).

### B. SHREDDER

1. Dilute METAM-S.A.U. in sufficient water to obtain even distribution. As soil is ejected from shredder, spray uniformly on soil stream at rate of 1 fl. oz. METAM-S.A.U. per 2 cu. ft. of soil.
2. After all soil is treated and piled, apply light water seal to entire surface or cover with tarp.

### C. CEMENT MIXER

1. Add METAM-S.A.U. to soil mix at rate of 1 fl. oz. per 2 cu. ft. of soil in cement or similar mixer. Mix thoroughly.
2. After soil is treated and piled, sprinkle water over entire surface to seal in gas; or cover with tarp (plastic, kraft paper, etc.)

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