



PM 21 10182-392 Page 1 of 23

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

JAN 18 1995

Mr. Fred J. Pearson
Zeneca Ag Products
1800 Concord Pike
Wilmington, DE 19897

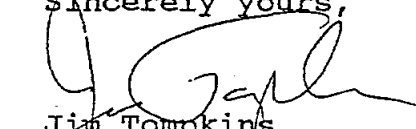
Dear Mr. Pearson:

Subject: Vapam HL Soil Fumigant - Revised Labeling
EPA Registration No. 10182-392
Your Submission Dated January 12, 1995

The revised labeling you submitted in connection with the subject registration is acceptable. A stamped copy is enclosed for your records.

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

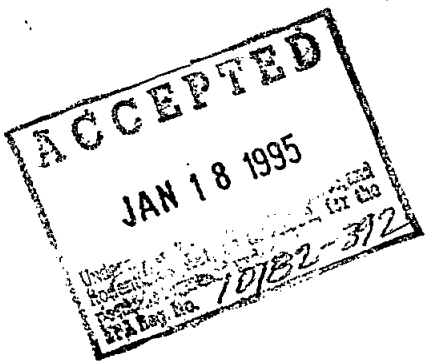
Sincerely yours,



Jim Tompkins
Acting Product Manager, PM 21
Fungicide-Herbicide Branch
Registration Division (7505C)

Enclosure

2 7 23



VAPAM® HL
Soil Fumigant

**A SOIL FUMIGANT SOLUTION FOR ALL CROPS
MAY BE APPLIED BY SPRINKLER, SOIL INJECTION, OR CHEMIGATION FOR CONTROL
OF SOIL-BORNE PESTS THAT ATTACK ORNAMENTALS, FOOD AND FIBER CROPS.**

Controls Weeds such as Annual Bluegrass, Bermudagrass, Chickweed, Dandelion, Ragweed, Henbit, Lambsquarter, Amaranthus species, Watergrass, Johnsongrass, Nutgrass, Wild Morningglory and Purslane, Nematodes and Symphylids. Soil-Borne diseases such as Rhizoctonia, Pythium, Phytophthora, Verticillium, Sclerotinia, Oak Root Fungus and Club Root of Crucifers

ACTIVE INGREDIENT:	
Sodium methyldithiocarbamate (anhydrous)	42%
INERT INGREDIENTS:	<u>58%</u>
TOTAL:	100%

Contains 4.26 lbs. Active Ingredient METAM SODIUM per gallon

EPA Reg. No.: 10182-392
EPA Est. No.:

Contents:

KEEP OUT OF REACH OF CHILDREN

DANGER
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.)

Made in U.S.A.
ZENECA Ag Products
ZENECA Inc.
Wilmington, DE 19897

STATEMENT OF PRACTICAL TREATMENT

Immediately start the procedures below and contact a Poison Control Center, a physician or the nearest hospital. Describe the type and extent of exposure, 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 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 occurs, 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 or convulsing person.

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL 1-800-F-A-S-T-M-E-D (327-8633)

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE. CAUSES SKIN DAMAGE. MAY BE FATAL IF ABSORBED THROUGH THE SKIN. Do not get on skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed. Harmful if inhaled. Irritating to eyes, nose and throat. Avoid breathing vapor or spray mist. Irritating to eyes. Do not get in eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- (1) Handlers Performing Direct-Contact Tasks. Direct-contact tasks include:
- Mixing, loading, or fumigant transfer with or without dry-disconnect fittings
 - Equipment calibration or adjustment
 - Equipment cleanup and repair
 - Product sampling

- Application or soil-sealing outside an enclosed cab
- Any activity less than 6 feet from an unshielded pressurized hose containing this product
- Spill cleanup
- Removal of tarp or plastic film
- Rinsate disposal
- Cleanup of small spills
- Preparing containers for aeration
- Any other handling task not otherwise listed in (2) or (3) below

Applicators and other handlers performing direct-contact activities must wear:

- Coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, or when mixing, loading, or transferring without dry-disconnect fittings
- Face-sealing goggles, unless full-face respirator is worn
- A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)

(2) Handlers in Enclosed Cabs. Applicators and other handlers in enclosed cabs must wear:

- Coveralls
- Shoes and socks

Plus, if pungent, rotten-egg odor of this product can be detected inside the enclosed cab, the handlers in the cab must wear:

- Face-sealing goggles, unless full-face respirator is worn
- A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)

In addition, the PPE specified in (1) for direct-contact activities must be immediately available in the enclosed cab and must be worn if the handler leaves the enclosed cab to perform any direct-contact activity.

The enclosed cab must meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides - 40CFR 170.240(d)(5).

(3) Handlers in Treated Areas While Entry is Restricted.

While entry is restricted (see "Entry Restrictions" in the Agricultural Use Requirements box elsewhere in this labeling), only the following handling tasks may be performed in a treated area: ~~outdoors or in the entire greenhouse (or other enclosed structure) in which a treatment took place:~~

- Assessing/adjusting the soil seal
- Assessing pest control, application technique, or application efficacy
- ~~Operating ventilation equipment~~
- Sampling air or soil for this product

All other tasks are prohibited until the entry restriction is over.

Handlers performing the above tasks must wear:

- Coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear and socks

Plus: ~~Handlers must wear (1) in a treated greenhouse before ventilation criteria have been met OR (2) if pungent, rotten egg odor of this product can be detected: outdoors or in a treated greenhouse after ventilation criteria have been met:~~

- Face-sealing goggles (unless full-face respirator is worn) and
- A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

USER SAFETY REQUIREMENTS:

1. Respirator Requirements: When a respirator is required for use with this product, the following criteria must be met:
 - a. Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner.
 - b. Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134).
2. Dispose of Contaminated Clothing: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with liquid from this product. Do not reuse them.
3. Clean and Maintain PPE: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Wash PPE after each day's use.

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 into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes. Do not apply when conditions favor drift from treated areas. Do not use in a greenhouse or any other enclosed structure or confined area.

6 7 23

**CONDITIONS OF SALE
AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ZENECA or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ZENECA and Seller harmless for any claims relating to such factors.

ZENECA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ZENECA, and Buyer and User assume the risk of any such use. ZENECA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall ZENECA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ZENECA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ZENECA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

ZENECA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of ZENECA.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Refer to Booklet attached to container for Complete Directions for Use.

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. Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

CALIFORNIA ONLY: Application must be in compliance with Technical Information Bulletin - California, "Metam Sodium Guidelines for All Application Methods for Metam Sodium in California." This information bulletin may be obtained from your local pesticide dealer or a Metam Sodium registrant.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling (i.e., attached booklet) under "**AGRICULTURAL USE REQUIREMENTS**" in the **DIRECTIONS FOR USE** section for information about this standard.

STORAGE AND DISPOSAL

PROHIBITIONS: 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.

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.

FOR BULK AND MINI-BULK CONTAINERS:

CONTAINER DISPOSAL: Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

8 8 23

CONTAINER PRECAUTIONS: Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices.

REFILL ONLY WITH VAPAM HL-HERBICIDE SOIL FUMIGANT. The contents of this container cannot be completely removed by cleaning. Refilling with materials other than VAPAM HL-Herbicide Soil Fumigant will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!

9 8 23

Label Accepted
(Stamped) 1/18/95

Page 1 of 15
VAPAM HL Booklet
VAP42B.RSB - RS-071994B

**VAPAM® HL
Soil Fumigant**

PRODUCT USE & CHEMIGATION BOOKLET

**A SOIL FUMIGANT SOLUTION FOR ALL CROPS
MAY BE APPLIED BY SPRINKLER, SOIL INJECTION, OR CHEMIGATION FOR CONTROL
OF SOIL-BORNE PESTS THAT ATTACK ORNAMENTALS, FOOD AND FIBER CROPS.**

Controls Weeds such as Annual Bluegrass, Bermudagrass, Chickweed, Dandelion, Ragweed, Henbit, Lambsquarter, Amaranthus species, Watergrass, Johnsongrass, Nutgrass, Wild Morningglory and Purslane, Nematodes and Symphylids. Soil-Borne diseases such as Rhizoctonia, Pythium, Phytophthora, Verticillium, Sclerotinia, Oak Root Fungus and Club Root of Crucifers

Made in U.S.A.
ZENECA Ag Products
ZENECA Inc.
Wilmington, DE 19897

**CONDITIONS OF SALE
AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ZENECA or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ZENECA and Seller harmless for any claims relating to such factors.

ZENECA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ZENECA, and Buyer and User assume the risk of any such use. ZENECA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall ZENECA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ZENECA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ZENECA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

ZENECA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of ZENECA.

KEEP OUT OF REACH OF CHILDREN

**DANGER
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.)

ACTIVE INGREDIENT:

Sodium methyldithiocarbamate (anhydrous) 42%

INERT INGREDIENTS: 58%

TOTAL: 100%

Contains 4.26 lbs. Active Ingredient METAM SODIUM per gallon

EPA Reg. No.: 10182-392

STATEMENT OF PRACTICAL TREATMENT

Immediately start the procedures below and contact a Poison Control Center, a physician or the nearest hospital. Describe the type and extent of exposure, 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 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 occurs, 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 or convulsing person.

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL 1-800-F-A-S-T-M-E-D (327-8633)

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE. CAUSES SKIN DAMAGE. MAY BE FATAL IF ABSORBED THROUGH THE SKIN. Do not get on skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed. Harmful if inhaled. Irritating to eyes, nose and throat. Avoid breathing vapor or spray mist. Irritating to eyes. Do not get in eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- (1) Handlers Performing Direct-Contact Tasks. Direct-contact tasks include:
- Mixing, loading, or fumigant transfer with or without dry-disconnect fittings
 - Equipment calibration or adjustment
 - Equipment cleanup and repair
 - Product sampling
 - Application or soil-sealing outside an enclosed cab
 - Any activity less than 6 feet from an unshielded pressurized hose containing this product
 - Spill cleanup
 - Removal of tarp or plastic film
 - Rinsate disposal
 - Cleanup of small spills
 - Preparing containers for aeration
 - Any other handling task not otherwise listed in (2) or (3) below

Applicators and other handlers performing direct-contact activities must wear:

- Coveralls over long-sleeved shirt and long pants
 - Waterproof gloves
 - Chemical-resistant footwear plus socks
 - Chemical-resistant headgear for overhead exposure
 - Chemical-resistant apron when cleaning equipment, or when mixing, loading, or transferring without dry-disconnect fittings
 - Face-sealing goggles, unless full-face respirator is worn
 - A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)
-

(2) Handlers in Enclosed Cabs. Applicators and other handlers in enclosed cabs must wear:

- Coveralls
- Shoes and socks

Plus, if pungent, rotten-egg odor of this product can be detected inside the enclosed cab, the handlers in the cab must wear:

- Face-sealing goggles, unless full-face respirator is worn
- A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)

In addition, the PPE specified in (1) for direct-contact activities must be immediately available in the enclosed cab and must be worn if the handler leaves the enclosed cab to perform any direct-contact activity.

The enclosed cab must meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides - 40CFR 170.240(d)(5).

(3) Handlers in Treated Areas While Entry is Restricted.

While entry is restricted (see "Entry Restrictions" in the Agricultural Use Requirements box elsewhere in this labeling), only the following handling tasks may be performed in a treated area: ~~outdoors or in the entire greenhouse (or other enclosed structure) in which a treatment took place:~~

- Assessing/adjusting the soil seal
- Assessing pest control, application technique, or application efficacy
- ~~Operating ventilation equipment~~
- Sampling air or soil for this product

All other tasks are prohibited until the entry restriction is over.

Handlers performing the above tasks must wear:

- Coveralls over long-sleeved shirt and long pants.
- Waterproof gloves
- Chemical-resistant footwear and socks

Plus: ~~Handlers must wear (1) in a treated greenhouse before ventilation criteria have been met OR (2) if pungent, rotten egg odor of this product can be detected: outdoors or in a treated greenhouse after ventilation criteria have been met:~~

- Face-sealing goggles (unless full-face respirator is worn) and
- A respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

USER SAFETY REQUIREMENTS:

1. Respirator Requirements: When a respirator is required for use with this product, the following criteria must be met:

- a. Cartridges or canisters must be replaced daily or when odor or irritation from this product becomes apparent, whichever is sooner.
- b. Respirators must be fit-tested and fit-checked using a program that conforms to OSHA's requirements (described in 29 CFR Part 1910.134).

2. **Dispose of Contaminated Clothing:** Discard clothing and other absorbent materials that have been drenched or heavily contaminated with liquid from this product. Do not reuse them.
3. **Clean and Maintain PPE:** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Wash PPE after each day's use.

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 into clean clothing.
-

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes. Do not apply when conditions favor drift from treated areas. Do not use in a greenhouse or any other enclosed structure or confined area.

DIRECTIONS FOR USE

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. Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

CALIFORNIA ONLY: Application must be in compliance with Technical Information Bulletin - California, "Metam Sodium Guidelines for All Application Methods for Metam Sodium in California." This information bulletin may be obtained from your local pesticide dealer or a Metam Sodium registrant.

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).

ENTRY RESTRICTIONS:

Outdoors: 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.

~~Greenhouses: 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 in the entire greenhouse (entire enclosed structure) from the start of application until 48 hours after application AND until one of the WPS ventilation criteria for air exchanges, mechanical ventilation, or passive ventilation has been met. In addition, if tarps are used for the application, non-handler entry is prohibited during tarp removal and until one of the WPS ventilation criteria has been met.~~

NOTIFICATION: Notify workers of the application by warning them orally and by posting fumigant warning signs. The signs must bear the skull and crossbones symbol and state: (1) "DANGER/PELIGRO," (2) "Area under fumigation, DO NOT ENTER/NO ENTRE," (3) the date and time of fumigation, (4) "VAPAM® HL Soil Fumigant in use," and (5) "name, address, and telephone number of the applicator." Post the fumigant warning sign instead of the WPS sign

16 7 23

for this application, but follow all WPS requirements pertaining to location, legibility, size, and timing of posting and removal.

~~Greenhouses: Post the fumigant warning signs outside all entrances to the greenhouse.~~

Outdoors: Post the fumigant warning signs at entrances to treated areas.

PPE FOR ENTRY DURING THE 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.

STORAGE AND DISPOSAL

PROHIBITIONS: 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.

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.

FOR BULK AND MINI-BULK CONTAINERS:

CONTAINER DISPOSAL: Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

CONTAINER PRECAUTIONS: Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices.

REFILL ONLY WITH VAPAM HL-HERBICIDE SOIL FUMIGANT: The contents of this container cannot be completely removed by cleaning. Refilling with materials other than VAPAM HL-Herbicide Soil Fumigant will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!

GENERAL INSTRUCTIONS

Before applying this product always thoroughly cultivate the area to be treated, breaking up clods and loosening soil deeply and thoroughly. A week before treatment, moisten soil after cultivation to the desired depth; sprinkle or flood irrigate. This step is essential for all methods of use. Immediately before application, cultivate lightly if the soil has crusted. See POTATOES section for specific directions on the application of VAPAM HL to potato fields where no-till stubble or cover crop exist. To prevent loss from evaporation, use only at times when air temperature is moderate and there is little wind movement. Soil temperature must be from 40 to 90°F in the treated zone. Treated zone is defined as the depth of treatment that VAPAM HL achieves at the time of application. For other conditions, see section, "CULTIVATION AND PLANTING AFTER APPLICATION." Do not apply to soil surface, as in the sprinkler method, when air temperature is over 90°F or when low humidity or high winds would cause loss of VAPAM HL before it can be drenched into the soil with additional water. If fumes become unpleasant during treatment, apply more water to seal the fumes into the soil where they should be confined to achieve maximum fumigation benefit.

The activity of VAPAM HL is increased by the use of tarp (plastic, paper or fabric) spread loosely over the treated areas and secured to prevent removal by wind. Keep covered for a minimum period of 48 hours. Seven days after treatment cultivate areas to depth of 2 inches to aerate the soil. Do not seed earlier than 21 days after application when tarping method is used. Use promptly after mixing with water. Do not allow solution to stand. Flush equipment with water after each day's use. Disassemble valves and clean carefully.

PRODUCT INFORMATION: VAPAM HL is a water soluble liquid. When applied to properly prepared soil, the liquid is converted into a gaseous fumigant. After sufficient interval of time, the gas dissipates leaving the soil ready for planting.

WHEN TO USE MAXIMUM AND MINIMUM RATES: The application rate of VAPAM HL is dependent on the soil type to be treated and the position in the soil of the pest to be suppressed or controlled. Generally a light sandy soil requires a lower application rate than a heavier mineral soil. In addition, if the pest is in the upper portion of the soil profile (annual weeds) a lower application rate is generally required than if the pest is deeper in the soil profile and deeper penetration is desired (perennial weed seeds). When a range of application rates is given in this label consult your local agricultural extension service for more specific information.

VAPAM HL is recommended for the control of the following soil-borne pests that attack ornamental, food and fiber crops: Weeds and germinating weed seeds; Annual Bluegrass, Bermudagrass, Chickweed, Dandelion, Ragweed, Henbit; Lambsquarter, Amaranthus spp. (Pigweed & Careless Weed), Watergrass, Johnsongrass, Nutgrass, Wild Morningglory and Purslane; Nematodes and Symphylids (Garden Centipede) and Soil-borne Diseases such as (Rhizoctonia, Pythium, Phytophthora, Verticillium, Sclerotinia, Oak Root Fungus and Club Root of Crucifers).

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 ~~in confined areas~~ or when fumes may enter nearby houses. Do not use in greenhouses or any other enclosed structure or confined area. Keep container tightly closed when not in use. Do not store near feed or food.

CULTIVATION AND PLANTING AFTER APPLICATION: On well drained soil of light to medium texture which are not excessively wet or cold 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 application of VAPAM HL, an extended interval should be observed. Where dosages are greater than 75 gals. per acre, wait at least 60 days. On heavy, wet soils, light surface cultivation to break up 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 soils, cultural practices should be such that untreated soils are not mixed with treated soils. **SPECIAL INSTRUCTIONS:** When treating heavier soils, including soil high in clay or organic matter, it is essentially important that the soils be allowed to aerate and dry thoroughly after using VAPAM HL. During cold and or wet weather, frequent shallow cultivations may aid the escape of VAPAM HL from the soil. If in doubt transplant a seedling plant and examine for injury before planting crop.

STATEMENTS CONCERNING CHEMIGATION OF VAPAM HL

GENERAL PRECAUTIONS FOR IRRIGATION SYSTEMS

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2½ inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol of at least 8 inches in diameter containing the word STOP: Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

This sign is in addition to any sign posted to comply with the Worker Protection Standard.

Apply this product only through (choose one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; flood (basin); furrow; border; or drip (trickle); irrigation system(s).

Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation

system(including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

OBSERVE THE FOLLOWING PRECAUTIONS IF YOUR CHEMIGATION SYSTEM IS CONNECTED TO A PUBLIC WATER SYSTEM

Public water system is defined as a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of a year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow presenter (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction.

There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top of overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in the cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

SPRINKLER CHEMIGATION SYSTEMS

Use only those sprinkler systems which give large water droplets to prevent excessive loss. Use 56.25 to 75 gallons of VAPAM HL per acre. For control of shallow pests (top 1 ft. or less of soil), run sprinklers 5 to 10 minutes; in the next 10 to 20 minutes inject into the sprinkler system all VAPAM HL needed for the area covered. On very light soils keep surface moist by sprinkling for 2 or 3 days. For control of pests deeper than 18 inches in the soil, divide VAPAM HL in 3 or more equal parts and apply at intervals during the sprinkling period.

STATEMENTS CONCERNING THE OPERATION OF SPRINKLER CHEMIGATION; DRIP (TRICKLE); OR OTHER APPROVED SYSTEMS UTILIZING A PRESSURIZED WATER AND PESTICIDE INJECTION SYSTEM

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

STATEMENTS CONCERNING FLOOD (BASIN), FURROW AND BORDER CHEMIGATION

Systems using a gravity flow pesticide dispersing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Do not dilute in supply tanks. Agitation of supply tank recommended after freezing.

FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED

SOIL INJECTION: Space thin injection shanks 5 inches apart and inject VAPAM HL 4 inches deep into well prepared soil. Follow immediately with a roller to smooth and compact the soil surface. Light watering or a tarp after rolling may be used to help prevent gas escape. For field use, 30 to 75 gallons of VAPAM HL per acre is recommended.

ROTARY TILLER OR POWER MULCHER: Spray VAPAM HL immediately in front of the tiller or mulcher. Use 37.5 to 75 gallons per acre. Follow immediately with a roller to seal soil surface. Light watering or a tarp after rolling may be used to help prevent gas escape.

SPRINKLER SYSTEM: Use only those sprinkler systems which give large water droplets to prevent excessive loss. Use 56.25 gals. to 75 gals. VAPAM HL per acre. For control of shallow pests (top 1 ft. of soil), run sprinklers 5 to 10 minutes. In next 10 to 20 minutes inject all VAPAM HL needed for the area covered. On very light soils keep surface moist by sprinkling for 2 to 3 days. For control of pests deeper than 18 inches in the soil, divide VAPAM HL into 3 or more equal parts and apply at intervals during the sprinkling period.

CHECK OR FLOOD IRRIGATION: Meter VAPAM HL at a steady rate into water during irrigation. Apply 37.5 to 75 gal. per acre depending upon the kind of pest and depth desired, in 3 inches to 18 inches of water per acre.

FIELD APPLICATION TO BEDS OR ROWS

SOIL INJECTION: VAPAM HL may be injected into pre-formed plant beds following the directions given above under soil injection. If a wider treated band is desired, space 2 or more shanks at intervals of 5 inches to cover the desired treating width. Use thin injection shank(s) and inject VAPAM HL 4 inches deep into well prepared soil. Follow immediately with a roller to seal chisel channel(s). Light watering or a tarp after rolling may be used to help prevent gas escape. Apply at the rate of 37 to 92 fluid ounces/1,000 linear feet of bed per chisel (30 to 75 gals./treated acre). Space shanks 5 inches apart to cover the desired treating width. If VAPAM HL is injected into established plant beds through plastic tarps to terminate growth of a previous crop, and to fumigate the bed in preparation of planting a subsequent crop, the terminated crop must not be used for any food or feed purposes after Metam Sodium has been applied.

SOIL COVERING METHOD (Bed-over methods): VAPAM HL may be sprayed or dripped in a bed wide band onto the soil immediately ahead of bedshaping equipment. Cover the VAPAM HL with soil to a depth of 3 to 6 inches. The soil should be rolled and compacted immediately. Apply at the rate of 37.5 to 75 gallons per acre of treated soil or 11 to 22 fluid ounces per 100 linear feet of row (12-inch wide bed.) If a narrower or wider bed is to be treated, adjust the fluid ounces/100 linear feet of row to reflect the actual treated acres.

ROTARY TILLER or POWER MULCHER: Spray VAPAM HL immediately in front of the tiller or mulcher. Use 37.5 to 75 gallons per treated acre. Follow immediately with a roller or bed shaper to seal soil surface. Light watering or a tarp after rolling may be used to help prevent gas escape.

METHOD OF DETERMINING FLUID OUNCES PER 100 FEET OF LINEAR ROW

- 1) Determine width of bed in feet by dividing width of bed in inches by 12.
Example: 8 inches bed = 8 inches divided by 12 = 0.666 feet
- 2) Determine square feet in 100 linear feet of bed by multiplying the width of the bed by 100.
Example: 0.666 ft. x 100 ft. = 66.66 sq. ft.
- 3) Determine the treated acres per 100 linear feet of bed by dividing the square feet by 43,560 (square feet in acre).
Example: 66.66 square feet divided by 43,560 = 0.0015 acre.
- 4) To determine the fluid ounces per 100 linear feet.
 - a) 1 gal. = 128 fl. oz.; 50 gals. = 6400 fl. oz.; 100 gal. = 12,800 fl. oz.
 - b) multiply fluid ounces by acres. Example: 50 gals. = 6400 fl. oz. x 0.0015 = 9.6 fl. oz. per 100 linear feet row.

DRIP IRRIGATION SYSTEM

VAPAM HL must be applied through a drip irrigation system to wet the soil thoroughly in the area being treated. Meter 19 to 56 gallons VAPAM HL per treated acre into the drip system during the entire irrigation period. APPLICATION MUST BE CONTINUOUSLY SUPERVISED. THIS IS VERY IMPORTANT: WEED ELIMINATION WILL NOT BE SATISFACTORY IF TOO MUCH WATER IS APPLIED. An adequate concentration of Metam Sodium must be present at the time of weed seed germination in order to be effective. Further directions for use are as follows:

- (1) Ground must be in seed-bed condition, no clods larger than 1/2 inch in diameter.
- (2) Beds must be listed, shaped and ready for planting.
- (3) Soil Moisture must be 50% of field capacity in the top 2-3 inches at time of application.

TOBACCO PLANT BEDS

Fall applications are recommended wherever possible. Read and follow directions carefully. Treatment in the South should generally be made before November 30th. Prepare the bed 5 to 7 days before application to insure best conditions for weed seed germination and fumigant action. The bed should be free of clods, level and in good tilth. Cover the bed immediately after treatment with plastic cover. Keep covered no less than one day but no more than two days. The cover need not be tented but should be secure to prevent wind from uncovering the treated area. Seven days after date of application loosen the treated soil to a depth of 2 inches. Do not seed tobacco earlier than 21 days after application.

TARP METHOD: Apply 3/4 to 1 gallon of VAPAM HL in a minimum of 40 gallons of water per 100 square yards. Apply uniformly over the entire bed. Follow GENERAL DIRECTIONS given above.

DRENCH METHOD: Apply 2 gallons of VAPAM HL in 150 to 200 gallons of water per 100 square yards. Application may be made with sprinklers, sprayers with nozzles or any suitable equipment. Follow GENERAL INSTRUCTIONS given above.

POTATOES

For suppression of potato pests such as nematodes; weed seeds and Verticillium dahliae;

SOIL INJECTION: Apply 30 gals./acre of VAPAM HL. Follow directions for FIELD APPLICATION WHERE ENTIRE AREA IS TREATED.

SPRINKLER SYSTEM PREPLANT: Apply 37.5 to 75 gallons of VAPAM HL/acre. Inject into a sprinkler system that can deliver an even water distribution for the area being treated. Soil temperatures should be in the range of 40°F to 90°F in the treatment zone. On very light soils, keep surface area moist by sprinkling periodically for 2 to 3 days. Apply in a minimum of 1 acre inch of water. VAPAM HL may be applied where crop stubble or vegetation exist without prior tillage, provided there is adequate soil penetration of METAM SODIUM.

PEPPERMINT

Verticillium Wilt: When infestation is limited to small spots in a field, the spread of verticillium can be reached by treating the infected spots. Apply at the rate of 75 gallons per acre of VAPAM HL using injector blade or thin shank injector rig. Follow directions for "FIELD APPLICATION - WHERE ENTIRE AREA IS BEING TREATED."

TREATMENT OF TREE REPLANT SITES IN COMMERCIAL ORCHARDS

After removing dead or diseased trees and as much of the root system as possible, make a shallow basin over the planting site. Add VAPAM HL to the stream of water while filling the basin. Use 3/4 quart of VAPAM HL per 100 sq. ft. in sufficient water (depending on the soil type) to penetrate at least 6 ft. For control of Oak Root Fungus, use a basin of at least 20 ft. square. Increase dosage to 1 1/2 quarts per 100 sq. ft in sufficient water to penetrate to the depth of the root system. If water is tanked to the planting site, add VAPAM HL to the water and mix before filling the basin. Tarping of replant sites is required when near (1/2 mile) to populated areas such as schools, hospitals, commercial or office buildings, factories, residential areas, etc. Tarping is not required if treatment is further than 1/2 mile from such populated areas.

SYMPHYLID CONTROL

Soil should be in good bed condition to a depth of 8 to 10 inches. Maintain adequate soil moisture during the Spring season to bring symphylids to the upper soil surface. Treat during July-August when symphylids are in the upper soil surface. Apply as a broadcast treatment at 15 gallons VAPAM HL per acre using blade or chisel injectors. Inject below level of symphylid concentration, usually 6 to 8 inches. Pack soil with a roller immediately after application.