EPA REGISTRATION NUMBER 66330-43 – VOL. 1

5781697

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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Laurent C. Mézin
Project Manager
Arysta LifeScience North America
100 First Street, Suite 1700
San Francisco, CA 94105

JUL 22 2005

Subject: Midas 98:2
EPA File Symbol No. 66330-UG
Revised CSF submitted 6/18/05

Dear Dr. Mézin:

The revised basic Confidential Statement of Formula (CSF) dated 6/18/05 referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable. Please note that this CSF supercedes all previous CSFs for this product and will be added to the regulatory file.

If you have any questions, please contact Robert Westin by phone at (703) 305-5721 or via email at westin.robert@epa.gov.

Sincerely,

Mary L. Waller

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

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

June 27, 2005

Bob: According to Dennis, the last TRB review requested changes to the CSF for certain limits. Please verify cert. limits or send to TRB. Thanks, Mary

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: IODOMETHANE (EPA Reg. No. 66330-UU) formulated products
Submission of Updated CSFs for the MIDAS formulations

Dear Ms Waller:

Included with this cover letter are updated CSFs for Iodomethane formulated products. This follows conversations I have had with Dennis McNeilly regarding this issue. CSFs are enclosed for the following products:

1. MIDAS 98:2 (EPA File No. 66330-UG) S781697
2. MIDAS 25:75 (EPA File No. 66330-UE) S781698
3. MIDAS 33:67 (EPA File No. 66330-LO) S781700
4. MIDAS 50:50 (EPA File No. 66330-LT) S781701
5. MIDAS EC BRONZE (EPA File No. 66330-LI) S781704
6. MIDAS EC GOLD (EPA File No. 66330-AN) S781706

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

Please add this letter to the file. Thanks Mary

Arvesta

January 31, 2005

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Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: IODOMETHANE and MIDAS formulations(EPA Reg. No. 66330-UU, -UG, -UE and others)
Submission of latest labels

Dear Ms Waller:

On January 14th and 19th, 2005, Arvesta Corporation submitted to the US EPA the last of the final reports commissioned for the development of a Computational Fluid Dynamic, Physiologically Based Pharmacokinetics (CFD-PBPK) models, the PERFUM models and Risk Assessment. The Arvesta "Iodomethane Human Health Risk Assessment" contained in its appendix labels taking into account the latest model refinements.

As these labels were not submitted to the agency independently, I am including them in triplicate with this cover letter. The following formulation labels are included:

Formulation	% iodomethane	% Chloropicrin	% adjuvant TM-456
MIDAS 25:75	25	75 UE	0
MIDAS 33:67	33	67	0
MIDAS EC GOLD	33	62	5
MIDAS 50:50	50	50	0
MIDAS 98:2	98	2 – UG	0

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

Tech UU

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.

MIDAS™ 98:2

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:.....2.00%
*** Contains 2% Chloropicrin (warning odorant tear gas)**
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

	• Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ___ Net Contents _____

EPA Est. No.: _____

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains a small amount of chloropicrin as a warning odorant, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 98:2 or in reentry into

treated fields may be exposed to the vapors of this active ingredient, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of iodomethane are measured with direct reading devices, such as Kitagawa tubes, certified for iodomethane. If the air concentration exceeds 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 5 ppm iodomethane, an air supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)
Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane, however, for MIDAS 98-2, personal respiratory protection devices are only required under the following circumstances. If within the working area, at any time, the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F). If the air concentration exceeds 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 98:2 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS
MIDAS 98:2 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be

encountered.

- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials, (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) – do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

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 contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
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 task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

~~(1)~~(0) "DANGER/PELIGRO"
~~(2)~~(0) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
~~(3)~~(0) Iodomethane Fumigant In Use
~~(4)~~(0) Date and time of fumigation
~~(5)~~(0) Name of this product, and
~~(6)~~(0) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):

During the 24 hour period following the application of MIDAS 98:2, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  100 feet + ((Acres Treated Per Day – 20) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application

rate, compared to the maximum rate of 179 lbs MIDAS 98:2 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 98:2 per treated acre]/179) = Distance From the Edge of the Treated Field (Adjusted for Application Rate).

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane Fumigant in Use."

  - The date and time of fumigation,
  - Name of this product, and
  - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least four inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of iodomethane is measured to be less than 0.19 ppm and no sooner than 48 hours following application. Signs must remain legible during

entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.

- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.19 ppm iodomethane in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 102 lbs (5.4 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 98:2 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 98:2 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the

depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 98:2 by shank fumigation. Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold or if MIDAS 98:2 is applied in combination with chloropicrin.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 98:2 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

CROP ROTATION RESTRICTIONS

Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 7 days after treatment. Crops other than strawberry, tomatoes and peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 98:2 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	102-179 lbs/A (5.4 – 9.5 gal/A)	7--14 days
Strawberry Nursery*	179 lbs/A + 175 lbs Chloropicrin/A (9.5 gal + 175 lbs)	7–14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	102-179 lbs/A (5.4 – 9.5 gal/A)	7–14 days

Trees Vines	120–179 lbs/A (6.3 – 9.5 gal/A)	7- 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 150 lbs/A (7.9 gal/A) of MIDAS 98:2 be applied with a minimum of 120 lbs of chloropicrin to control these weeds.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils), typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 14 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

DRIP IRRIGATION (CHEMIGATION)

Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigation system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin and compatible with iodomethane is required (ArvestaTM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- "Public water system" means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (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 or 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 back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic 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.
- 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 a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 98:2 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 700-1,000 ppm. One gallon of MIDAS 98:2 in 2275 gallons of water is equivalent to 1,000 ppm. MIDAS 98:2 must be metered into the water.
- Soil must be in good tilth and condition, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 98:2 or more than 1,000 ppm MIDAS 98:2 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 98:2 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.
- Apply MIDAS 98:2 with the surfactant ARVESTA TM-456 or an alternate surfactant recommended by Arvesta Corporation aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin. at a rate of 5 lbs of surfactant per 95 lbs of Midas 98:2.
- MIDAS 98:2 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not

allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- 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.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 98:2 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any MIDAS 98:2. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 98:2 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation, then proceed with normal agricultural practices for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 98:2 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth between 6 and 15 inches.
- Injection spacing of 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:

  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of the warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut until for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - Be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 0.19 ppm before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or

  - Closing shoes and compaction roller.
- Injection depth of at least 18 inches.
- Injection spacing of 68 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. **ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.**
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

MIDAS is a trademark of Arvesta Corporation.

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.

MIDAS™ 98:2

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:.....2.00%
*** Contains 2% Chloropicrin (warning odorant tear gas)**
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

	• Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ___ Net Contents _____

EPA Est. No.: _____

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains a small amount of chloropicrin as a warning odorant, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 98:2 or in reentry into

treated fields may be exposed to the vapors of this active ingredient, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of iodomethane are measured with direct reading devices, such as Kitagawa tubes, certified for iodomethane. If the air concentration exceeds 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 5 ppm iodomethane, an air supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)
Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane, however, for MIDAS 98-2, personal respiratory protection devices are only required under the following circumstances. If within the working area, at any time, the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F). If the air concentration exceeds 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 98:2 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS
MIDAS 98:2 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be

encountered.

- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials, (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) – do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

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 contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
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 task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

~~(1)~~(0) "DANGER/PELIGRO"
~~(2)~~(0) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
~~(3)~~(0) Iodomethane Fumigant In Use
~~(4)~~(0) Date and time of fumigation
~~(5)~~(0) Name of this product, and
~~(6)~~(0) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):

During the 24 hour period following the application of MIDAS 98:2, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  100 feet + ((Acres Treated Per Day – 20) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application

rate, compared to the maximum rate of 179 lbs MIDAS 98:2 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 98:2 per treated acre]/179) = Distance From the Edge of the Treated Field (Adjusted for Application Rate).

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane Fumigant in Use."

  - The date and time of fumigation,
  - Name of this product, and
  - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least four inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of iodomethane is measured to be less than 0.19 ppm and no sooner than 48 hours following application. Signs must remain legible during

entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.

- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.19 ppm iodomethane in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 102 lbs (5.4 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 98:2 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia*. It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 98:2 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the

depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 98:2 by shank fumigation. Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold or if MIDAS 98:2 is applied in combination with chloropicrin.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 98:2 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

CROP ROTATION RESTRICTIONS

Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 7 days after treatment. Crops other than strawberry, tomatoes and peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 98:2 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	102-179 lbs/A (5.4 – 9.5 gal/A)	7--14 days
Strawberry Nursery*	179 lbs/A + 175 lbs Chloropicrin/A (9.5 gal + 175 lbs)	7–14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	102-179 lbs/A (5.4 – 9.5 gal/A)	7–14 days

Trees Vines	120–179 lbs/A (6.3 – 9.5 gal/A)	7- 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 150 lbs/A (7.9 gal/A) of MIDAS 98:2 be applied with a minimum of 120 lbs of chloropicrin to control these weeds.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils), typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 14 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

DRIP IRRIGATION (CHEMIGATION)

Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigation system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin and compatible with iodomethane is required (ArvestaTM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- "Public water system" means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (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 or 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 back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic 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.
- 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 a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 98:2 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 700-1,000 ppm. One gallon of MIDAS 98:2 in 2275 gallons of water is equivalent to 1,000 ppm. MIDAS 98:2 must be metered into the water.
- Soil must be in good tilth and condition, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 98:2 or more than 1,000 ppm MIDAS 98:2 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 98:2 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.
- Apply MIDAS 98:2 with the surfactant ARVESTA TM-456 or an alternate surfactant recommended by Arvesta Corporation aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin. at a rate of 5 lbs of surfactant per 95 lbs of Midas 98:2.
- MIDAS 98:2 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not

allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the contaminated soil area with clean soil to absorb the material.

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or injection pump.
- 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.
- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphragm pump, venturi system or a pressure safe cylinder containing MIDAS 98:2 equipped with a metering valve and flow meter.
- Following application, continue to apply irrigation water to rinse the irrigation system of any MIDAS 98:2. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW MIDAS 98:2 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation, then proceed with normal agricultural practices for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS:

For best results, fumigations with MIDAS 98:2 shall be performed in accordance with the following application techniques. Consult with your regional agricultural advisor or Arvesta representative regarding other techniques that represent best management practices in your area.

Tarpaulin/Shallow/Broadcast

- Use either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth between 6 and 15 inches.
- Injection spacing of 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:

  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of the warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut until for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - Be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 0.19 ppm before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or

  - Closing shoes and compaction roller.
- Injection depth of at least 18 inches.
- Injection spacing of 68 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. **ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.**
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

MIDAS is a trademark of Arvesta Corporation.

File 66330-UG

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

January 18, 2005

Office of Pesticide Programs
Document Processing Desk (APPL)
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

5773583 5773584

RE: IODOMETHANE and MIDAS (EPA Reg. No. 66330-UG and -UE)
Submission of Primary Name change
TM-42501 to MIDAS 98:2
TM-42503 to MIDAS 25:75

Dear Ms Waller:

Please find enclosed applications for amendments of the products named above. These submissions amend the primary names of these products from TM-42501 to MIDAS 98:2 and from TM-42503 to MIDAS 25:75.

MIDAS is the "generic" brand name for the products to be registered and the numbers that follow describe the percentages of the ingredients Iodomethane and Chloropicrin, in that order.

In support of this application, the following documents are enclosed:

1. EPA application form 8570-1 for the name change of TM-42501
2. EPA application form 8570-1 for the name change of TM-42503
3. Triplicate copies of the labels for these formulations. These are identical to the labels submitted on January 14, 2005.

Should you have any questions, please contact me at (415) 778 4844.

Best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

577.3583

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

- [ ] Registration
- [x] Amendment
- [ ] Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 66330-UG	2. EPA Product Manager Mary Waller	3. Proposed Classification [ ] None [x] Restricted
4. Company/Product (Name) TM-42501	PM# 21	
5. Name and Address of Applicant *(Include ZIP Code)* Arvesta Corporation 100 First Street, Suite 1700 San Francisco, CA 94105 [ ] *Check if this is a new address*	6. **Expedited Reveiw.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

- [x] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated _____
- [ ] Notification - Explain below.
- [ ] Final printed labels in repsonse to Agency letter dated _____
- [ ] "Me Too" Application.
- [ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Amendment to change the principal name of the product to Midas 98-2

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
** Certification must be submitted*	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container	25, 110, and 400 gallons	[ ]

6. Manner in Which Label is Affixed to Product [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Laurent C. Mézin	Project Manager	(415) 778 4844

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title Project Manager	6. Date Application Received (Stamped)
4. Typed Name Laurent C. Mézin	5. Date Jan. 18, 2005	

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

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.

MIDAS™ 98:2

For Pre-Plant Fumigations of Fields Intended for Commercial Production of Various Crops, Ornamentals, Bushes, Trees and Vines for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:.....2.00%
*** Contains 2% Chloropicrin (warning odorant tear gas)**
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaille. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

	• Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) assistance: Call CHEMTREC at 1-800-424-9300.

For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - ___ Net Contents _____

EPA Est. No.: _____

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Corrosive to skin. May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. If clothing or absorbent materials (e.g. leather) have been drenched or heavily contaminated with this product, discard these items - do not reuse them. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains a small amount of chloropicrin as a warning odorant, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration for persons exposed to iodomethane is 0.19 ppm (1.10 mg/m^3). Persons involved in the application of MIDAS 98:2 or in reentry into

treated fields may be exposed to the vapors of this active ingredient, dependent on such factors as the weather (e.g., temperature, wind, rain) and the condition of the soil. Air concentrations of iodomethane are measured with direct reading devices, such as Kitagawa tubes, certified for iodomethane. If the air concentration exceeds 0.19 ppm iodomethane, an air-purifying respirator must be worn. If the air concentration exceeds 5 ppm iodomethane, an air supplying respirator or self-contained breathing apparatus must be worn.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks.
- It is prudent to wear an appropriate respirator whenever applying chemical fumigants such as iodomethane, however, for MIDAS 98-2, personal respiratory protection devices are only required under the following circumstances. If within the working area, at any time, the air concentration of iodomethane exceeds 0.19 ppm, applicators and other handlers must wear either (a) a respirator with a 3M Brand No. 60928 cartridge filter, or equivalent (MSHA/NIOSH approved number prefix TC-23C), (b) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) or (c) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F). If the air concentration exceeds 5 ppm iodomethane at any time, or if direct reading devices are not available for determining the air concentrations in the field, applicators and other handlers must wear (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TS-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).
- Drivers may use a closed cab equipped with an approved iodomethane adsorptive vapor filter in lieu of a personal respiratory protection device. This iodomethane filter must be installed and changed according to the manufacturer's specifications.
- Drivers may use tractor mounted working area air fan dilution system in lieu of a personal respiratory protection device.
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

A respirator of the type specified above must be available during applications of MIDAS 98:2 and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

MIDAS 98:2 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of a type appropriate for use under the pressure and vacuum conditions to be

encountered.

- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials, (e.g. leather), that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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. If clothing is drenched or heavily contaminated with this product, discard clothing or absorbent materials (e.g. leather) – do not reuse them.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

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 contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
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 task that is permitted by this labeling – is PROHIBITED from the start of the application until 48 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification at Entrances to Treated Areas:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The signs must bear the skull and crossbones symbol and state:

~~(1)~~(0) "DANGER/PELIGRO"
~~(2)~~(0) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
~~(3)~~(0) Iodomethane Fumigant In Use
~~(4)~~(0) Date and time of fumigation
~~(5)~~(0) Name of this product, and
~~(6)~~(0) Name, address, and telephone number of the applicator.

Post these fumigant warning signs instead of the WPS signs for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. These fumigant warning signs shall be posted for no less than 48 hours.

Notification for Occupied Areas Adjacent to Treated Fields (Buffer Zones):

During the 24 hour period following the application of MIDAS 98:2, it is required that the user prohibit persons from being present in areas adjacent to the treated field, as described in this section. These adjacent areas, where persons are restricted during the 24 hours following application, are called "Buffer Zones". The factors that trigger the need for Buffer Zones and the size and shape of these Buffer Zones, are determined by following the Steps provided below.

The activities that are prohibited for 24 hours within a Buffer Zone include any activities that result in a person being present within the Buffer Zones for more than 1 hour during the 24 hour period following application. Examples of activities that are restricted are work or recreation within a Buffer Zone, or occupation of structures that are within a Buffer Zone for more than a total of 1 hour during the 24 hour period following application. Examples of activities that are not included are driving past the treated field or occupying a structure that is not within the Buffer Zone.

Follow these steps to determine whether a Buffer Zone must be established and determine what the size and shape of the Buffer Zone will be:

Step 1 – Need For Buffer Zone:

- If there is a reasonable expectation that persons will be present at locations adjacent to the treated field for more than 1 hour during the 24 hour period following the application, then a Buffer Zone is required. Calculate the Buffer Zone distance (Step 2) then adjust for application rate (Step 3) and prevailing wind (Step 4), if applicable. Then re-determine the need for a Buffer Zone (Step 5).

- For all applications where a Buffer Zone is required, the minimum Buffer Zone size shall extend 25 feet from the edge of the treated field.

Step 2 – Determine Buffer Zone Distance:

- For Applications Up to 5 Acres per Day: The Buffer Zone shall extend to 25 feet from the edge of the treated field.

- For Applications Between 5 and 20 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  25 feet + ((Acres Treated Per Day – 5) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

- For Applications Between 20 and 40 Acres per Day: Use the following formula to determine the size of the Buffer Zone:

  100 feet + ((Acres Treated Per Day – 20) x 5 feet) =
  Distance From the Edge of the Treated Field (Adjusted for Acres Treated)

Step 3 – Adjust Buffer Zone to Account for Application Rate:

- The size of the Buffer Zone is reduced proportionally with the application

rate, compared to the maximum rate of 179 lbs MIDAS 98:2 per treated acre. Use the following formula, utilizing the distances calculated in Step 2, to determine the adjusted size of the Buffer Zone:

Distance From the Edge of the Treated Field (Adjusted for Acres Treated) x (Application Rate [lbs MIDAS 98:2 per treated acre]/179) = Distance From the Edge of the Treated Field (Adjusted for Application Rate).

- In no case shall this adjustment of the Buffer Zone result in a Buffer Zone that is smaller than the Minimum Buffer Zone size of 25 feet from the edge of the treated field.

Step 4 – Adjust Buffer Zone Configuration to Account for Prevailing Wind:

- When there is a clear historical expectation that a single, dominant prevailing wind direction will be present during the 24 hour period following the initiation of the application, the Buffer Zone can be limited to the semi circle downwind from the treated field.

Step 5 – Re-Determine Need For Buffer Zone:

- A Buffer Zone is not required if, after following the previous steps and determining the size and shape of the Buffer Zone, the locations identified in Step 1 (as being likely to be occupied for more than 1 hour during the 24 hours following the application) are not within the calculated Buffer Zone.

Applications shall not be made within 100 ft of occupied sensitive sites. Sensitive sites are schools, convalescent homes, and hospitals.

Users must ensure that persons are not present within the Buffer Zone for 24 hours following application.

PPE For Reentry During the Entry-Restricted Period:
Reentry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane Fumigant in Use."

  - The date and time of fumigation,
  - Name of this product, and
  - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing all other workers information about precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film and the edges of the film buried under at least four inches of compacted soil before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.
- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration of iodomethane is measured to be less than 0.19 ppm and no sooner than 48 hours following application. Signs must remain legible during

entire posting period. Signs that identify the "buffer zone" adjacent to the treated field can be removed 24 hours following application.

- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 0.19 ppm iodomethane in the air space around the treated site.
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 102 lbs (5.4 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that must only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: MIDAS 98:2 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium* and *Rhizoctonia*. It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, trees, vines, and to soils intended for strawberry nursery use.

Soil Fumigation using MIDAS 98:2 must be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants, the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the

depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply MIDAS 98:2 by shank fumigation. Use tractor mounted chisels spaced no more than 12 inches apart and at a depth of no less than 6 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately following the chisel, except when applied by deep-shank broadcast application, as detailed below under "Iodomethane Pre-Plant Field Fumigation Methods". Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold or if MIDAS 98:2 is applied in combination with chloropicrin.

To minimize the potential for crop injury, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if MIDAS 98:2 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

CROP ROTATION RESTRICTIONS

Strawberries, fresh market tomatoes and peppers can be planted into treated soil as soon as crop safety can be assured and no sooner than 7 days after treatment. Crops other than strawberry, tomatoes and peppers require a 4 month plant back rotation restriction.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	MIDAS 98:2 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	102-179 lbs/A (5.4 – 9.5 gal/A)	7--14 days
Strawberry Nursery*	179 lbs/A + 175 lbs Chloropicrin/A (9.5 gal + 175 lbs)	7–14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	102-179 lbs/A (5.4 – 9.5 gal/A)	7–14 days

Trees Vines	120–179 lbs/A (6.3 – 9.5 gal/A)	7- 14 days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 150 lbs/A (7.9 gal/A) of MIDAS 98:2 be applied with a minimum of 120 lbs of chloropicrin to control these weeds.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREES AND VINES – PREPLANT DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils), typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 14 days after the period of exposure. DO NOT PLANT if the odor of the chloropicrin warning agent used in MIDAS 98:2 is detectable.

DRIP IRRIGATION (CHEMIGATION)

Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigation system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments, should the need arise.
- A surfactant registered for use with chloropicrin and compatible with iodomethane is required (ArvestaTM-456 or an alternate product recommended by Arvesta Corporation must be used).
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- "Public water system" means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (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 or 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 back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, automatic 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.
- 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 a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.
- MIDAS 98:2 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.
- The dilution rate for drip-line fumigation is 700-1,000 ppm. One gallon of MIDAS 98:2 in 2275 gallons of water is equivalent to 1,000 ppm. MIDAS 98:2 must be metered into the water.
- Soil must be in good tilth and condition, free of clods and un-decomposed soil material.
- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC must not be exposed to undiluted MIDAS 98:2 or more than 1,000 ppm MIDAS 98:2 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.
- In very sandy soils, apply MIDAS 98:2 when soil conditions throughout the treatment zone are near field capacity. When necessary, apply a pre-treatment amount of water to wet the bed and enhance even movement of the material through the soil profile at time of treatment.
- Apply MIDAS 98:2 with the surfactant ARVESTA TM-456 or an alternate surfactant recommended by Arvesta Corporation aid in the solubility of the compound in irrigation water, when applied alone or in combination with chloropicrin. at a rate of 5 lbs of surfactant per 95 lbs of Midas 98:2.
- MIDAS 98:2 must be monitored as it enters the irrigation system and must pass through a static mixer, coarse filter, or fine strainer or equivalent devices to insure proper mixing before it is distributed through the irrigation system. Do not

  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of the warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Rearward-curved (swept-back) chisels with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth of between 6 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing of 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut until for at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - Be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 0.19 ppm before planting begins.

Tarpaulin/Deep/Broadcast

- Forward-curved chisels with either:
  - An air fan dilution system on the application tractor; or

  - Closing shoes and compaction roller.
- Injection depth of at least 18 inches.
- Injection spacing of 68 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Forward-curved chisel with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing of 66 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane or methyl bromide per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.
2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. **ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.**
3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

MIDAS is a trademark of Arvesta Corporation.

Arvesta

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December 9, 2004

Office of Pesticide Programs
Document Processing Desk
U.S. Environmental Protection Agency
Room 259, Crystal Mall 2
1801 Bell Street
Arlington, VA 22202

Attn: Mary Waller
Product Manager 21
(703) 308 9354

RE: Iodomethane - Authorization to publicly release PERFUM and risk assessment.

Dear Mary:

Please consider this letter Arvesta Corporation's formal authorization to the U.S. EPA for the public release and availability of the PERFUM probabilistic exposure model and the Agency's revised risk assessment for iodomethane.

An earlier version of the **P**robabilistic **E**xposure and **R**isk model for **FUM**igant bystander exposures (PERFUM) was available to the public in connection with its review by a Scientific Advisory Panel (SAP) in August 2004. Arvesta requested that the model be removed from the EPA website to effect the modifications requested by EPA and the SAP. These modifications were recently completed and Arvesta is pleased to offer the model to EPA for its use and public release. Arvesta expects that it will provide a very useful tool in the Agency's evaluation of exposure for all fumigants.

Arvesta further authorizes the EPA to release to the public the revised risk assessment the Agency has conducted for iodomethane, subject to an additional review of the document by Arvesta for error identification and correction, prior to its release.

Should you have any questions, please contact me at (415) 778 4844.

Thank you and best regards,

Laurent C. Mézin, Ph.D.
Project Manager
Registrations and Regulatory Affairs
Arvesta Corporation
(415) 778 4844

Cc: J. Kinzell/Arvesta
M. Allan/Arvesta
R. Tinsworth/Exponent
A. Lawyer/TSG
Files

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☑ Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 66330-UG	2. EPA Product Manager Mayr Waller	3. Proposed Classification ☐ None ☑ Restricted
4. Company/Product (Name) TM-42501	PM# 21	
5. Name and Address of Applicant *(Include ZIP Code)* Arvesta Corporation 100 First Street, Suite 1700 San Francisco, CA 94105 ☐ *Check if this is a new address*	6. **Expedited Reveiw.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

☐ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☑ Notification - Explain below.
☐ Final printed labels in repsonse to Agency letter dated _____
☐ "Me Too" Application.
☐ Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

NOTIFICATION OF AN ALTERNATE TRADE NAME
This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the *labeling* or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other (Specify) _____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container		☐

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☐ Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Robert R. Stewart, Ph.D.	Regulatory Consultant	202-828-8963

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title Regulatory Consultant
4. Typed Name Robert R. Stewart, Ph.D.	5. Date September 30, 2003

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete.

White - EPA File Copy (original) Yellow - Applicant Copy

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.

Midas™ 98:2

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%
One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Causes skin irritation. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains a small amount of chloropicrin as a warning odorant, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration for iodomethane in the working area during soil fumigation does not exceed 5 ppm.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

Midas™ 98:2 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.
- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 102 lbs (5 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: Midas™ 98:2 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using Midas™ 98:2 should be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: *Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination.* The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply Midas™ 98:2 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 3 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately after the chisel is in the ground, except when applied by deep-shank broadcast application, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold or if Midas™ 98:2 is applied in combination with chloropicrin.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if Midas™ 98:2 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin warning agent used in Midas™ 98:2 is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	Midas™ 98:2 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin to control these weeds.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils), typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 14 days after the period of exposure.

DRIP IRRIGATION (CHEMIGATION).

Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- Public water system means a system for the provision to the public of piped water for human consumption if sych system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.

- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (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 or 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 back toward the injection pump.

- The pesticide injection pipeline must contain a functional, normally closed, automatic 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.

- 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 a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

- Midas™ 98:2 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.

- The dilution rate for drip-line fumigation is 700-1,000 ppm. One gallon of Midas™ 98:2 in 350 gallons of water is equivalent to 1,000 ppm. Midas™ 98:2 must be metered into the water.

- Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted Midas™ 98:2 or more than 1,000 ppm Midas™ 98:2 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

- In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly. Apply the Midas™ 98:2 when soil moisture conditions throughout the treatment zone are near field capacity.

- Apply Midas™ 98:2 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

- Midas™ 98:2 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer or equivalent devices to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the soil with soil to absorb the material.

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

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

- 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.

- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing Midas™ 98:2 equipped with a metering valve and flow meter.

- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of Midas™ 98:2. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW Midas™ 98:2 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 3 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of the warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per treated acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 3 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.

- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - Be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Forward-curved chisels shall be used with either:
  - An air fan dilution system on the application tractor; or
  - Closing shoes and compaction roller.
- Injection depth shall be at least 18 inches.
- Injection spacing shall be 68 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block. The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

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.

Midas™ 98:2

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• *Hold eye open and rinse slowly and gently with water for 15-20 minutes.* • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Causes skin irritation. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wear protective face shield, loose fitting or well ventilated long-sleeved shirt, long pants, and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product contains a small amount of chloropicrin as a warning odorant, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration for iodomethane in the working area during soil fumigation does not exceed 5 ppm.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

Midas™ 98:2 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent.
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices containing natural rubber, aluminum, magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Follow all local government instructions for posting of treated areas and post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system for leaks or worn out equipment prior to soil injection.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

During Fumigation:

- Immediately cover treated areas with a plastic tarpaulin for a minimum of 5 days when shank injection is less than 18 inches deep.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.
- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

- Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
- To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.

Contaminated soil, water and other cleanup debris may be hazardous waste. Report any spill that exceeds 102 lbs (5 gallons of product) to the National Response Center (800-424-8802).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: Midas™ 98:2 controls soil-borne pests including nematodes, insects, weed seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using Midas™ 98:2 should be conducted according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply Midas™ 98:2 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 3 inches below the soil surface. The treated ground must be sealed, utilizing a mechanical tarp layer, with a gas-tight plastic tarpaulin immediately after the chisel is in the ground, except when applied by deep-shank broadcast application, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarps should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold or if Midas™ 98:2 is applied in combination with chloropicrin.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used as a bioassay to determine if Midas™ 98:2 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of the chloropicrin warning agent used in Midas™ 98:2 is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting intervals as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	Midas™ 98:2 / Treated Acre**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that a minimum of 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin to control these weeds.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period you may disc, plow or chisel the soil to help aeration in a flat fume (broadcast) fumigation operation.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils), typically to a depth of between 18 to 36 inches below the soil surface though deeper injections may be made as appropriate. Use 1 injection site per 100 square feet (i.e., one injection site every 10 feet in a standard grid pattern). Planting or replanting of trees or vines may begin 14 days after the period of exposure.

DRIP IRRIGATION (CHEMIGATION).

Apply this product only through buried drip tape or equivalent irrigation system. Do not use this product through any other type of irrigations system.

General Instructions for Drip Irrigation:

- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.
- Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
- Public water system means a system for the provision to the public of piped water for human consumption if sych system has at least 15 service connections or regulatory serves an average of at least 25 individuals daily at least 60 days out of the year.

- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (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 or 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 back toward the injection pump.

- The pesticide injection pipeline must contain a functional, normally closed, automatic 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.

- 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 a system interlock.

Application by Drip fumigation:

- Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

- Midas™ 98:2 may be applied through buried drip tape. Use of a tarp seal is required for all applications of this product.

- The dilution rate for drip-line fumigation is 700-1,000 ppm. One gallon of Midas™ 98:2 in 350 gallons of water is equivalent to 1,000 ppm. Midas™ 98:2 must be metered into the water.

- Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

- Use drip irrigation components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted Midas™ 98:2 or more than 1,000 ppm Midas™ 98:2 in the diluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

- In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly. Apply the Midas™ 98:2 when soil moisture conditions throughout the treatment zone are near field capacity.

- Apply Midas™ 98:2 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

- Midas™ 98:2 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer or equivalent devices to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs, discontinue the application immediately and cover the soil with soil to absorb the material.

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

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

- 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.

- Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing Midas™ 98:2 equipped with a metering valve and flow meter.

- Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of Midas™ 98:2. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW Midas™ 98:2 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 3 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut for a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of the warning agent is readily evident by onset of eye irritation or odor.
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per treated acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 3 and 15 inches. The injection depth in preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less, typically performed with a multiple shank applicator.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.

- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
    - Consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
    - Be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Forward-curved chisels shall be used with either:
    - An air fan dilution system on the application tractor; or
    - Closing shoes and compaction roller.
- Injection depth shall be at least 18 inches.
- Injection spacing shall be 68 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
    - Tarpaulins used for broadcast fumigations shall only be cut using mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
    - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of warning agent is readily evident by onset of eye irritation or odor.
    - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per treated acre.
- Forward-curved chisel shall be used with:
    - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 18 inches; or
    - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This section pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Permit requirements and Notifications of Intent for field fumigations shall be in compliance with requirements of Article 3 (Permit System), Subchapter 4 (Restricted Materials), Chapter 2, Division 6, of Title 3 (Food and Agriculture) of the California Code of Regulations.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

TECHNOLOGY SCIENCES GROUP INC

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September 30, 2003

Mary Waller
Registration Division (OPP)
US. Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, VA 22202

Subject: TM-42501: EPA File Symbol 66330-UG
Notification of an Alternate Trade Name

Dear Mary,

Arvesta Corporation submits the attached notification of an alternate trade name for its end-use product, TM-42501, containing iodomethane. Included in this submission are:

1. Application for Pesticide Notification, EPA Form No. 8570-1
2. A copy of the product label with the Alternate Trade Name printed in red.
3. A copy of the label without highlighting.

If you have any questions please contact me at 202-828-8963 or Jim Platt at 415-536-3482.

Sincerely,

Robert R. Stewart, Ph.D.
Regulatory Consultant

Cc: Arthur Lawyer, Ph.D., Technology Sciences Group Inc.
James L. Platt, Ph.D., Arvesta Corporation

Jacket

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

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

FEB 10 2003

Mr. James L. Platte
Avesta Corp.
100 First Street, Suite 1700
San Francisco, CA 94105

Subject: TM-42501, Iodomethane
EPA File Symbol: 66330-UG
Acute toxicity and product chemistry reviews

Dear Mr. Steward:

The Agency is forwarding reviews of the acute toxicity and product chemistry supporting this registration. This letter does not constitute approval of the product. The Agency simply wants to advise you of the status of these particular studies. Review of the acute toxicity studies indicates an acceptable of six-pack studies (citing acute inhalation study) and that the overall signal word for this product will be DANGER (See Masih Hashim's review dated 17 June 2002 and Byron Backus's review dated June 18, 2002). The Agency has also enclosed a review of the product chemistry data (see Sami Malak review dated 16 May 2002).

Sincerely,

Mary L. Waller

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

Enclosures: acute toxicity review
product chemistry review

DATE OUT: 16/MAY/2002

SUBJECT: PRODUCT CHEMISTRY REVIEW OF: Manufacturing-Use [ ] End-Use Product [X]
DP BARCODE No.: 282720 **EPA RECEIVED DATE:** 04/FEB/2002 **REG./File Symbol No.:** 66330-UG
PRODUCT NAME: TM-42501, 98% Iodomethane **MRIDs:** 455942-01 to -03
COMPANY NAME: Arvesta Corporation **Action Code:** 116

FROM: Sami Malak, Chemist
Technical Review Branch/RD (7505C)

TO: 21 Mary Waller/Myrta Christian
Fungicide Branch/RD (7505C)

INTRODUCTION:

In a letter dated 31/JAN/2002, the applicant requested registration of subject product as per the regulations of FIFRA sec. 3(c)(5) or sec. 3(c)(7). Included with this submission were: product chemistry data, a proposed basic CSF dated 22/JAN/2002, and a proposed label EPA received 04/FEB/2002.

FINDINGS:

1a. The subject product is produced by a an integrated formulation system, meaning that the active source in the product is currently undergoing registration. The product contains 98% Iodomethane Technical, CAS #74-88-4, 99.8% pure. Material balance of 100% consisted of 2% chlorpicrin claimed as an odorant.

1b. The full product chemistry data, label, and CSF for Iodomethane Technical were reviewed concurrently with this application by this reviewer and a recommendation was made for its registration (Reg. No. 66330-UU, DP #282719, S. Malak, 15/MAY/2002).

1c. The subject product, a fumigant liquid fungicide, is recommended for pre-plant fumigation onto fields intended for commercial production of strawberries, tomatoes, peppers, ornamental flowers, and plants and bushes for the control of soil-borne pests including nematodes, insects, weed and grass seeds and diseases.

2a. Product's storage stability (GRN 830.6317) and corrosion characteristics (GRN 830.6320) are in progress to be submitted when completed, a target completion date of January 2003.

2b. Except for the data gaps identified in Finding 2(a) above, the submitted product chemistry data is adequate and support a FIFRA sec. 3(c)(5) or sec. 3(c)(7) registration of subject product.

3. Adequate analytical methods are available for enforcement. The methods were previously submitted and reviewed in connection with request for registration of the technical sources, Iodomethane Technical, Reg. No. 66330-UU (DP #282719, S. Malak, 16/MAY/2002). Methods for chloropicrin were previously submitted and reviewed in connection with its registration, Reg. Nos. 66330-37, or [redacted]

A method was included with this submission, MRID #455942-02, entitled "Analysis of Iodomethane and Chloropicrin in Two Formulations", MRI Code 303516.1.023 & .-24. The method was authored by Avie Mainey, performed by Midwest Research Institute of Kansas City, Missouri, Dated 18/JAN/2002 (13 pages). In this method, determination of the two active ingredients is accomplished by analyzing a test and standard solutions using

Product ingredient source information may be entitled to confidential treatment

capillary gas chromatography with flame ionization detection. Chlorobenzene is used as an internal standard and each of the two solutions is diluted with ethyl acetate. Method validation data regarding accuracy, precision, linearity, and recovery data are adequate. Sample calculation and chromatograms are included.

4a. The label claim nominal concentrations of 75% Iodomethane is consistent with that on the CSF, both are in compliance with the regulations of PR Notice 91-2. Further, the storage and disposal statement is in compliance with the regulations of 40CFR§156.10.

4b. The applicant's claim of 2% chloropicrin as an odorant is in compliance with PR Notice 85-4. No need to claim it as a second active ingredient on the proposed label.

5. The submitted product's basic formulation, CSF dated 22/JAN/2002 was filled out correctly and completely and agree with the label claim nominal concentration as per the regulations of PR Notice 91-2. Further, the upper and lower certified limits are within the standard limits of 40CFR§158.175(b)(2). All ingredients claimed on the CSF are cleared for use in pesticide formulations.

CONCLUSIONS:

Pending registration of Iodomethane Technical, Reg. No. 66330-UU, and resolving Finding 2(a) above, we will have no objections for a FIFRA sec. 3(c)(5) or sec. 3(c)(7) registration of subject product. The submitted product's basic formulation, CSF dated 22/JAN/2002, and label EPA received on 04/FEB/2002 will be accepted after resolving the deficiencies cited in this paragraph.

REVIEW OF PRODUCT CHEMISTRY DATA:

1. A statement of data confidentiality dated 22/JAN/2002 was included with this submission claiming no confidentiality of any some of the submitted data the basis of its falling within the scope of FIFRA§10(d)(1)(A), (B), or (C).

2. A GLP statement dated 22/JAN/2002 was included with this submission to the effect that some of the submitted studies were conducted in compliance with the GLP requirements of 40CFR§160.

DATA SUBMITTED

MRID #455942-01 The submitted studies entitled: "Product properties, Group A, TM-42501 End-Use Product, Data Requirements of OPPTS Test Guidelines 830.1550 through 830.1900." The studies were authored by Drs. David J. Brookman and Kay K. Curry; Prepared by Technology Sciences Group, Inc. of Washington, D. C.; Submitted by Arvesta Corporation of San Francisco, California; Completed on 22/JAN/2002 (30 pages).

MRID #455942-02 The submitted study entitled: "Analysis of Iodomethane and Chloropicrin in Two Formulations, Test Method ID: Code 303516.1.023 & .024", Data Requirements of OPPTS Test Guidelines 830.1800. The study was authored by Avie Mainey; Performed by Midwest Research Institute of Kansas City, Missouri; Completed on 18/JAN/2002 (13 pages).

MRID #455942-03 The submitted studies entitled: "Product properties, Group B, TM-42501 End-Use Product, Data Requirements: Product Identity, Composition, and Analysis, OPPTS Test Guidelines 830.6303 through 830.7300." The studies were authored by Drs. David J. Brookman and Kay K. Curry; Prepared by Technology Sciences Group, Inc. of Washington, D. C.;

Submitted by Arvesta Corporation of San Francisco, California; Completed on 24/JAN/2002 (38 pages).

Group A, Series 830-Product Identity, Composition, and Analysis (40 CFR 155, 160, 162, 167, 175 & 180)

830-1550 Product Identity and Composition

The subject product contains two technical grade of active ingredients, 98% Iodomethane Technical, CAS #74-88-4, 99.8% pure, Reg. No. 66330-UU; plus 2% Chloropicrin, Reg. Nos. 66330-37, or [redacted] (claimed as an odorant on the CSF and as "Other Ingredients" on the label); plus cleared carryover impurities, water and methanol, each is <0.1%, neither is listed in the CSF dated 22/JAN/2002.

830-1600 Description of Materials Used to Produce the Product:
Refer to Confidential appendix A.

830-1650 Description of Formulation Process:
Refer to Confidential appendix A.

830-1670 Discussion of Formation of Impurities:
Refer to Confidential appendix A.

830-1700 Preliminary Analysis:
Refer to Confidential appendix A.

830-1750 Certified Limits:
Refer to Confidential appendix A.

830-1800 Enforcement Analytical Method:

Adequate analytical method is available for enforcement. The method was previously submitted and reviewed in connection with request for registration of the technical sources, Iodomethane Technical, Reg. No. 66330-UU (DP #282719, S. Malak, 14/MAY/2002). Methods for chloropicrin were previously submitted and reviewed in connection with its registration, Reg. Nos. 66330-37, or [redacted]

A method was included with this submission, MRID #455942-02, entitled "Analysis of Iodomethane and Chloropicrin in Two Formulations", MRI Code 303516.1.023 & .-24. The method was authored by Avie Mainey, performed by Midwest Research Institute of Kansas City, Missouri, Dated 18/JAN/2002 (13 pages). In this method, determination of the two active ingredients is accomplished by analyzing a test and standard solutions using capillary gas chromatography with flame ionization detection. Chlorobenzene is used as an internal standard and each of the two solutions is diluted with ethyl acetate. Method validation data regarding accuracy, precision, linearity, and recovery data are adequate. Sample calculation and chromatograms are included.

Group B, Series 830-Physical and Chemical Properties (40 CFR 158.190):

Product ingredient source information may be entitled to confidential treatment

GUIDELINE REFERENCE NO.(GRN 830.)/TITLE	VALUE OR QUALITATIVE DESCRIPTION
.6302 Color	NA as per PR Notice 92-5.
.6303 Physical State	Liquid.
.6304 Odor	NA as per PR Notice 92-5.
.6314 Oxidation/Reduction: Incompatibility	Hazards such as significant temperature increases, evolution of gases, noxious fumes, splattering and evolution of flame will not occur as a result of normal uses, or if the formulation comes into contact with water, zinc powder, ammonium phosphate, household bleach, or unleaded gasoline.
.6315 Flammability/Flame Extension	Non flammable.
.6316 Explodability	Not considered to be potentially explosive. Iodomethane does not contain organically-bonded nitro groups or other functional groups that might confer this hazard. Chloropicrin in bulk containers can detonate but the addition of iodomethane, which is not explosive, is expected to diminish this possibility.
.6317 Storage Stability	Is in progress to be submitted when completed targeted for January, 2003.
.6319 Miscibility	NA. Ready-to-use product that does not need dilution with water or other solvents.
.6320 Corrosion Characteristics	Is in progress to be submitted when completed targeted for January, 2003. In a preliminary study, the product was found to be non corrosive to the packaging container made of stainless steel after 120 days in storage. However, product's storage is not expected to exceed 60 days.
.6321 Dielectric Breakdown Voltage	Not recommended for use around electrical equipment.
.7000 pH	6.55 (1% suspension in water @ 25°C)
.7100 Viscosity	0.521 mPa-sec @ 20.5°C, and 0.432 mPa-sec @ 40.5°C.
.7300 Density/Relative Density Bulk Density	2.28 g/ml (19 lbs/gal).

Confidential Appendix A

830-1600 Description of Materials Used to Produce the Product:

The subject product contains two technical grade of active ingredients, 98% Iodomethane Technical; plus 2% Chloropicrin (claimed as an odorant on the CSF and as "Other Ingredients" on the label); plus cleared carryover impurities, water and methanol, each at <0.1%, neither is listed in the CSF dated 22/JAN/2002.

[redacted]

830-1650 Description of Formulation Process:

[redacted]

830-1670 Discussion of Formation of Impurities:

The applicant reported no impurities ≥0.1% by weight were known to be formed during formulation and storage of the product.

830-1700 Preliminary Analysis:

Will be required if registration of iodomethane is not imminent.

830-1750 Certified Limits:

The applicant reported the same ingredients at percentages and upper/lower limits as those reported on product's CSF.

Product ingredient source information may be entitled to confidential treatment

Manufacturing process information may be entitled to confidential treatment

S. Malak and Central File (Reg. No. 66330-UG).
7505C:RD:TRB:CM-2:Rm.268:s.m.:16/MAY/2002:703-308-9365:<66330-UG>.

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

OFFICE OF PREVENTION,
PESTICIDES AND TOXIC SUBSTANCES

17/JUNE /2002

MEMORANDUM

Subject: EPA Reg. No: 66330-UG TM 42501
DP Barcode: D282272
Case No: 071529
PC Code: 00011, 81501

From: Masih Hashim, Toxicologist
Technical Review Branch
Registration Division (7505C)

To: Myrta Christian, PM 21
Fungicide Branch
Registration Division (7505C)

Applicant: Arvesta Corporation
100 First Street
San Francisco, CA 94105

FORMULATION FROM LABEL:

Active / Other Ingredient(s):	% by wt.
Iodomethane	98.0
Chloropicrin (odorant)	2.0
Total:	100.0

ACTION REQUIRED: PM requests a review of the acute toxicity studies for the File 66330-UG.

BACKGROUND: Arvesta Corporation has submitted a set of acute toxicity studies (MRID 455942-04 thru 455942-08) to support the registration of its product TM-42501, File Symbol 66330-UG. The product contains Iodomethane and chloropicrin. The animal studies were conducted at the Springborn Laboratories, Spencerville, Ohio.

RECOMMENDATIONS: The acute toxicity studies on TM-42501 are in compliance with the Sub- Division F guidelines.

The Company could have saved a few animals and pain and stress to these animals by citing the eye irritation study (Tox Category I) from the technical completed last year. Adding chloropicrin (2%) to this product will not (normally) alter the toxicity of the product. One of the priorities of EPA is to minimize the use of laboratory animals for FIFRA studies. We are surprised with this (repeat) test.

Toxicology profile for the proposed product TM-42501 is as follows:

Iodomethane 98%
Chloropicrin 2%

acute oral toxicity	II	acceptable	MRID 455942-04
acute dermal toxicity	III	acceptable	MRID 455942-05
acute inhalation	IV	cited	MRID 456413-01
primary eye irritation	I	acceptable	MRID 455942-06
primary dermal irritation	II	acceptable	MRID 455942-07
dermal sensitization	pos.	acceptable	MRID 455942-08

LABELING:

PRODUCT ID #:66330-41

PRODUCT NAME: TM-42501

PRECAUTIONARY STATEMENTS

SIGNAL WORD: DANGER

Hazards to Humans and Domestic Animals:

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Wear protective eye wear. Avoid contact with skin. Remove contaminated clothing and wash them before reuse. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

May be fatal if swallowed. Harmful if absorbed through skin. Causes skin irritation. Do not get into skin or on clothing.

Prolonged or frequent repeated skin contact may cause allergic reaction in some individuals.

First Aid:

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.

-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

If on skin:
-Take off contaminated clothing.
-Rinse skin immediately with plenty of water for 15-20 minutes.
-Call a poison control center or doctor for treatment advice.

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor.

Note to Physician:
Mucosal damage may contraindicate the use of gastric lavage.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE ORAL TOXICITY TESTING (870-1100)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) An Acute Oral Toxicity Study (Up/Down Design) in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.25 dated 1-25-02, MRID 455942-04. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: An acute oral toxicity study (455942-04) was conducted on Iodomethane /Chloropicrin (98:2) using the Up/Down procedure in SD rats (wt. 293-299 g f-190-212 g, Source: Harlan Sprague Dawley). The study utilized several dose levels from 70 to 260 mg/kg using 1 to 3 animal(s)/dose level (Table 1). The animals were observed daily and weekly body weights were taken. Gross pathology was recorded at necropsy (page 11of the study report).

Oral LD_{50} for Iodomethane /Chloropicrin (98:2) in male rats was 151 mg/kg, and 82 mg/kg in females. This study is classified as Tox Category II.

Table 1 shows mortality in rats for each dose level. Major clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased/no defecation, hypothermia, hunched posture, ocular discharge, dilated pupils, closed eyelids, dark material around eyes, salivation and nasal discharge. Body weights were also affected during the test period.

Necropsy findings in decedents included red lungs, and abnormal contents in the gastrointestinal tract. Necropsy findings in terminal animals were not significant.

This study (870-1100) is Acceptable in accordance with the Sub-Division F guidelines.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS:

Table 1. Number of Deaths/ Number of animals Tested

Dosage mg/kg	Male	Female
70	-	0/1
91	-	2/3
118	0/1	2/2
154	2/2	1/1
200	1/2	1/1
260	1/1	-

OBSERVATIONS: Mortality occurred in males by Day 0, and by Day 2 in females. Major clinical signs in decedent animals and one surviving animal included decreased activity, breathing abnormalities, decreased or no defecation, hypothermia, hunched posture, ocular discharge, dilated pupils, closed eyelids, dark material around eyes, salivation and nasal discharge. Body weight were also affected during the test period.

Necropsy Findings: Necropsy findings included red lungs, abnormal contents in the gastrointestinal tract. Terminal necropsy findings in animals were not significant.

DATA EVALUATION RECORD

STUDY TYPE: ACUTE DERMAL TOXICITY TESTING (870-1200)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2), Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) An Acute Dermal Toxicity Study in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3528.26 dated 1-25-02, MRID 455942-05. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a single dose dermal toxicity study (MRID 455942-05) with Iodomethane / Chloropicrin (98:2), Sprague Dawley rats, 5/sex (wt.- 311-345 g, fe- 196-227 g, Source: Harlan Sprague Dawley, Indianapolis, IN) were topically applied with a limit dose at 2000 mg/kg body weight. Animals received the test substance on 10% (body) surface area spread evenly and held in contact with the skin using a gauze patch (+occlusive binding). This was secured by an elastic wrap and a tape over the trunk of the animal. The wrappings were removed after 24 hours and the test sites were cleaned. Animals were observed for mortality and signs of gross toxicity for 14 days. Weekly body weights and terminal necropsy findings were recorded.

Dermal LD50 of Iodomethane /Chloropicrin (98:2) in male/female rats was > 2000 mg/kg. The test substance is classified as tox Category III.

There were no deaths on the study. Dermal irritation was noted on the test site. Animals had dark material around the facial area, and showed decreased defecation.

This study (870-1200) is Acceptable in accordance with the Sub-Division F guideline.

COMPLIANCE: The study is in compliance with GLP, signed and dated.

RESULTS:

Number of Deaths/ Number tested

Dosage mg/kg	Male	Female	Total
2000	0/5	0/5	0/10

OBSERVATIONS: There were no deaths on the study. Weight gain was not affected. There was dark material around the facial area. Dermal irritation was noted at the test site.

NECROPSY FINDINGS: Unremarkable.

DATA EVALUATION RECORD

STUDY TYPE: PRIMARY EYE IRRITATION TESTING (870-2400)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Primary Eye Irritation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.27 dated 1-25-02, MRID 455942-06. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a primary eye irritation study (MRID 45504906), 0.1 ml Iodomethane /Chloropicrin (98:2) was placed into the conjunctival sac of the right eye of each of the 6 NZW rabbits (Myrtle's Rabbitry, Thompson Station, TN). The eye lid was held closed for one second after instillation. The contra lateral eye of each animal served as the control. All eyes were graded for irritation such as abnormalities of cornea, iris and conjunctiva at 1, 24, 48, and 72 hours, up to 21 days. (*Only the 3 unwashed eyes are included in this summary since unwashed eyes are required for the Agency).*

All animals showed conjunctivitis at the 1st hour reading, 2 of 3 animals showed iritis (Table 1). All animals showed lesions in cornea, iris and conjunctiva at 24 hours. Corneal opacity and conjunctival lesions still remained in 2 of 3 animals, and iritis in 1 of 3 animals through 21 days. Mean ocular score at 24 hours was 45.0, and 27.0 on 21st day.

Iodomethane /Chloropicrin (98:2) is a severe irritant/ corrosive to the rabbit eye and is classified as Tox Category I.

This study (870-2400) is Acceptable in accordance with the Sub-Division F guidelines.

COMPLIANCE: The study is in compliance with GLP requirements, signed and dated.

RESULTS:

Table 1. Eye lesions/ No. of animals affected

Lesion	1 hr	24	48	72	7 days	10	14	21
Corneal opacity	0/3	3/3	2/3	2/3	2/3	2/3	2/3	2/3
Iritis	2/3	3/3	2/3	2/3	2/3	2/3	1/3	1/3
Conjunctivitis	3/3	3/3	3/3	3/3	2/3	2/3	2/3	2/3

DATA EVALUATION RECORD

STUDY TYPE: PRIMARY DERMAL IRRITATION TESTING (870-2500)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Primary Skin Irritation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.28 dated 1-25-02, MRID 455942-07. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: In a primary dermal irritation study (MRID 455942-07), 0.5 ml of Iodomethane/ Chloropicrin (98:2) was topically applied to the clipped intact skin at the dorsum (1x1 inch) of each of 3 NZW rabbits (Source: Myrtle's Rabbitry, Thompson Station, TN). A gauze patch and a semi occlusive binder was used to keep the test article in place for 3 minutes, 1 hour, and 4 hours (one site for each exposure). After each exposure period, the binder was removed and the remaining test article was wiped out from the skin using a wet gauze. The test sites were examined for dermal irritation at (timely) intervals up to 14 days.

The test substance produced (well defined) moderate erythema and severe edema in 3 of 3 animals at each exposure time, i.e., 3 minutes, 1 hour and 4 hours. Irritation resolved by 14th day of study. Superficial lightening and desquamation were also noted (around) the test sites. The irritation indices were:

3 minutes 4.67, one hour 5.17, and for 4 hours 5.67.

Iodomethane / Chloropicrin (98:2) is a severe skin irritant in rabbits, it is classified as Tox Category II. The study is Acceptable in accordance with the Sub Division F guideline.

COMPLIANCE: The study(870-2500) is in compliance with GLP, signed and dated.

OBSERVATIONS: The test substance produced (well defined) moderate erythema and severe edema in 3 of 3 animals at each exposure time, i.e., 3 minutes, 1 hour and 4 hours. Irritation resolved by 14th day of study. Superficial lightening and desquamation were also noted (around) the test sites. The irritation indices were: 3 minutes 4.67, one hour 5.17, and for 4 hours 5.67.

DATA EVALUATION RECORD

STUDY TYPE: DERMAL SENSITIZATION TESTING (870-2600)

PRODUCT MANAGER: 21 **REVIEWER**: M. HASHIM

TEST MATERIAL: TM-42501, Iodomethane /Chloropicrin (98:2) , Lot No. 920178/30501-1, Clear light brown liquid.

CITATION: Bonnette, K. L. (2002) A Dermal Sensitization Study (Modified Buehler Design) in Guinea Pigs with Iodomethane/Chloropicrin 98:2 (TM-42501). Springborn Laboratories, Spencerville, Ohio. Study #3527.31 dated 1-25-02, MRID 455942-08. Unpublished.

SPONSOR: Tomen Agro, Inc., San Francisco, CA 94105 (Current Sponsor, Arvesta Corporation, San Francisco, CA 94105)

EXECUTIVE SUMMARY: Dermal sensitization potential of Iodomethane /Chloropicrin (98:2) was evaluated in Hartley albino guinea pigs using the Modified Buehler Method (MRID 455942-08). Twenty guinea pigs (10/sex) were topically treated with 10% test substance (w/v in polyethylene glycol, PEG 400). This (induction) procedure was performed once a week for 3 consecutive weeks. After a 2-week rest period, these animals in addition to 10 naive controls, were challenged with 5% test substance (w/v in PEG 400).

Following the challenge dose 17 of 20 test animals at 24 hours, and 10 of 20 animals at 48 hours elicited (slight) positive response (score of 1). Control animals showed no response (score 0). Iodomethane /Chloropicrin (98:2) is considered a contact sensitizer.

DNCB and HCA were used for validation of the test system, both as the historical controls. The response was appropriate.

COMPLIANCE: The test meets GLP requirements. It is Acceptable in accordance with the Sub Division F guide lines.

ACUTE TOX ONE-LINERS

1. DP BARCODE: D282272
2. PC CODE: 00011, 81501
3. CURRENT DATE: 6-17-02
4. TEST MATERIAL: Iodomethane /Chloropicrin (98:2)

Study/Species/Lab Study #/Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity study/ rat/ Springborn Labs/ 3522.25/ 1-25-02	455942-04	LD_{50} = 117 mg/kg (for m+f)	II	A
Acute dermal toxicity study/ rat/ Springborn Labs/ 3527.26/ 1-25-02	455942-05	Dermal LD_{50} > 2000 mg/kg	III	A
Primary eye irritation study/ rabbit/ Springborn Labs/ 3527.27/ 1-25-02	455942-06	corrosive	I	A
Primary dermal irritation/ rabbit/ Springborn Labs/ 3527.28/ 1-25-02	455942-07	severe irritant	II	A
Dermal sensitization/ g. pig/ Springborn Labs/ 3527.31/ 1-25-02	455942-08	contact sensitizer	-	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated

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

OFFICE OF
PREVENTION, PESTICIDES
AND
TOXIC SUBSTANCES

June 18, 2002

MEMORANDUM

Product Name: TM-42501
EPA File Symbol: 66330-UG
Company: Arvesta Corporation
DP Barcode: D282078
Case No: 071529
Submission: S613235
Chemical: 000011 Iodomethane

From: Byron T. Backus, Ph.D., Toxicologist
Technical Review Branch
Registration Division (7505C)

Byron T. Backus
6/18/2002

To: Myrta Christian/Mary Waller PM 21
Registration Division (7505C)

ACTION REQUESTED: "Please review the attached study MRID #45641301 "An acute inhalation (Nose-only) study of Iodomethane/chloropicrin 98:2 (TM-42501) in rats."

BACKGROUND: No label was provided for this submission. However, the test material contained 98% iodomethane and 2% chloropicrin, so that presumably it would declare as an active ingredient the iodomethane at 98%, consistent with information on the bean sheet.

COMMENTS AND RECOMMENDATIONS:

1. The study in MRID 45641301 has been classified as acceptable.

2. The test material (containing 98% iodomethane and 2% chloropicrin) is in toxicity category IV in terms of its inhalation hazard potential. A partial acute toxicity profile is given below:

Acute inhalation LC50	Category IV	Acceptable (MRID 45641301)

3. As this is not a complete acute toxicity profile, and as the product is in toxicity category IV in terms of its acute inhalation toxicity hazard potential, TRB is unable to make any recommendations regarding the product's precautionary labeling at this time.

Product Manager: 21 **Reviewer:** Byron T. Backus, Ph.D.
MRID No.: 45641301

CITATION: Hilaski, R.J. An Acute Inhalation (nose-only) Toxicity Study of Iodomethane/ Chloropicrin 98:2 (TM-42501) in Rats. Laboratory Study Identification 926-001. Unpublished study prepared by MPI Research, Inc., 54943 N. Main St., Mattawan, MI 49071-9399. Study Completion Date: March 28, 2002. MRID 45641301.

SUBMITTER: Arvesta Corporation

STUDY SPONSOR: Tomen Agro, Inc., 100 First Street, Suite 1700, San Francisco, CA 94105

TEST MATERIAL: Iodomethane 98%/Chloropicrin 2% (TM-42501), Lot No. 920178/30501-1, described as a yellow liquid with an expiration date of November 7, 2003. Note: the certificate of analysis on p. 23 of MRID 45641301 is for a formulation containing Iodomethane 25%/Chloropicrin 75%.

SPECIES: Rat, albino, Sprague-Dawley Crl:CD(SD)IGS BR
AGE(at exposure): young adult, approximately 2 months old
WEIGHT (at exposure): Males: 248-308 g; Females: 175-205 g;
SOURCE: Charles River Laboratories, Portage, MI

EXECUTIVE SUMMARY: ***In an acute inhalation toxicity study (MRID 45641301), groups of 5 male and 5 female young adult (approximately 2 months old) albino Sprague-Dawley Crl:CD(SD)IGS BR rats received 4-hour nose-only exposures to mean concentrations of 107, 317, 489, 729 or 1036 ppm (as the mean molecular weight of a 98% iodomethane 2% chloropicrin formulation would be 142.4 these values would be respectively equivalent to 0.623, 1.85, 2.85, 4.25 and 6.03 mg/L of the test material) of TM-42501, Lot No. 920178/30501-1 (containing Iodomethane 98%/Chloropicrin 2%). The report does not give mean MMADs and GSDs, however, iodomethane has a relatively low boiling point (42.4°C); while chloropicrin has a somewhat higher boiling point (112.2°) it has a relatively high vapor pressure (equivalent to 18.3 mm Hg at 20°C).***

There were no mortalities at the two lowest concentration exposure levels (107 and 317 ppm, or 0.623 and 1.85 mg/L), with all animals normal by days 7 and 9 respectively. At 489 ppm (2.85 mg/L) 2/5 males and 0/5 females died, with most of the animals still showing clinical signs (including difficult/audible/rapid breathing) 14 days after exposure. At 729 ppm (4.25 mg/L) 5/5 males and 3/5 females died; the two surviving females were normal by day 9. At 1036 ppm (6.03 mg/L) 5/5 males and 5/5 females died, with most mortalities on the day after exposure. At the lowest exposure level (0.623 mg/L) symptoms were minimal (one male and one female had skin that was cold to the touch 4 hours after exposure, one female had rapid breathing on days 2-5, another female was vocalizing at 2 and 4 hours after exposure and again on days 3-6, with few feces on day 4, and another female had few feces on days 3-5). Symptoms at higher dose levels included audible/difficult/rapid/shallow breathing, soft/few feces, vocalization, skin warm/cold to touch, yellow/red/brown material around the eyes/nose/mouth, salivation, decreased activity, hunched posture, unkempt appearance, aggressive behavior, red material in pan, tremors, retropulsion and clear nose/muzzle discharge. Exposure to the test article at all concentrations resulted in body weight

losses (10-28% for males and 12-18% for females) and reduced mean body weight gains up to day 3. However, except for one male and one female in the 489 ppm (2.85 mg/L) and one female in the 729 ppm (4.25 mg/L) groups all survivors equaled or exceeded their pretest weight at the end of the 14-day observation period.

Individual neurobehavioral observations were made prior to exposure, within 45 minutes following exposure, at 2-2.5 hrs post exposure, at 4-4.5 hrs post exposure, and on a daily basis thereafter. In the period following exposure, general tremors were present in some males and females at all dose levels; at higher dose levels there was a lack of response following sensory stimulus. These symptoms were generally gone by day 9.

All rats that died during the observation period had mild to moderate red discolored lungs. Following terminal sacrifice, one surviving male from the 107 ppm (0.623 mg/L) group, two surviving males and one surviving female from the 317 ppm (1.85 mg/L) group, and one surviving male and one surviving female from the 489 ppm (2.85 mg/L) group had red discolored lungs.

Inhalation LC50 Males = 496 ppm (=2.89 mg/L)
Inhalation LC50 Females = 719 ppm (=4.18 mg/L)
Combined LC50 = 618 ppm (=3.60 mg/L) with 95% C.L. of 519-728 ppm (=3.02 to 4.24 mg/L).

TM-42501, Lot No. 920178/30501-1 (containing Iodomethane 98%/Chloropicrin 2%) is in toxicity category IV in terms of acute inhalation toxicity, based on the lowest LC50 value (2.89 mg/L for male rats).

Study Classification: Acceptable

COMPLIANCE: Signed and dated Statement of Compliance with GLP (p. 3), Quality Assurance (p. 7) and No Data Confidentiality (p. 2) statements are provided.

Procedure (including deviations from 870.1300): Exposure was nose-only for four hours. "Exposure atmospheres were generated by delivering the test article vapor from a 200 L gas bag to the chamber... The concentration of the test article vapor in the gas bag was based on the desired concentration in the exposure chamber. Test article vapor and compressed air, metered by a flowmeter, entered the chamber inlet tee and [were] mixed to provide the desired concentration... Examinations for clinical findings were conducted on all animals pre-test, every 15 minutes during the first exposure hour, hourly for the remaining exposure duration, within 45 minutes of removal from the exposure system, and at 2-2.5 and 4-4.5 hours post-exposure. Examinations continued daily for 14 days, or until all signs of reversible toxicity had subsided... Neurobehavioral examinations were conducted at the same intervals as the detailed clinical examinations, except during the exposure. Findings were detailed and carefully recorded using explicitly defined scales where possible. Findings included, but were not limited to, autonomic effects such as salivation, nervous system effects including tremors and convulsions, changes in the level of motor activity, gait and posture, reactivity to handling or sensory stimuli, grip strength, and stereotypies or bizarre behavior (e.g., self-mutilation, walking backwards)."

Mean Exposure Concentration ppm [mg/L] (Analytically Determined)	Number of Deaths/Number Tested		
	Males	Females	Combined
107 (104[a]+3[b]) [0.623 mg/L]	0/5	0/5	0/10
317 (310[a]+7[b]) [1.85 mg/L]	0/5	0/5	0/10
489 (478[a]+11[b]) [2.85 mg/L]	2/5	0/5	2/10
729 (689[a]+40[b]) [4.25 mg/L]	5/5	3/5	8/10
1036 (986[a]+50[b]) [6.03 mg/L]	5/5	5/5	10/10

[a]Mean concentration of iodomethane in ppm
[b]Mean concentration of chloropicrin in ppm
Data extracted in part from information on p. 17 of MRID 45641301.

From information on p. 14 of MRID 45641301 the nominal concentrations were 113, 355, 523, 728 and 994 ppm.

Clinical Observations: At 489 ppm [2.85 mg/L] one male was found dead 7 days after exposure and another male was found dead 14 days after exposure. At 729 ppm [4.25 mg/L] the 5 males died in the period 2 to 8 days after exposure; three female mortalities occurred in the period 3 to 8 days after exposure. At 1036 ppm [6.03 mg/L] all rats died in the period 1 to 7 days after exposure.

At the lowest exposure level (0.623 mg/L) symptoms were minimal (one male and one female had skin that was cold to the touch 4 hours after exposure, one female had rapid breathing on days 2-5, another female was vocalizing at 2 and 4 hours after exposure and again on days 3-6, with few feces on day 4, and another female had few feces on days 3-5). Symptoms at higher dose levels included audible/difficult/rapid/shallow breathing, soft/few feces, vocalization, skin warm/cold to touch, yellow/red/brown material around the eyes/nose/mouth, salivation, decreased activity, hunched posture, unkempt appearance, aggressive behavior, red material in pan, tremors, abnormal gait, retropulsion and clear nose/muzzle discharge. Exposure to the test article at all concentrations resulted in body weight losses (10-28% for males and 12-18% for females) and reduced mean body weight gains up to day 3. However, except for one male and one female in the 489 ppm (2.85 mg/L) and one female in the 729 ppm (4.25 mg/L) groups all survivors equaled or exceeded their pretest weight at the end of the 14-day observation period.

Neurobehavioral changes included tremors (usually within 4.5 hours of exposure), however, ½ female survivors at 729 ppm (4.25 mg/L) is reported as stumbling around in the cage on day 8 and presumably the same animal was the one exhibiting abnormal gait and convulsions. However, this animal had recovered from this episode the following day.

Gross Necropsy: All rats that died during the observation period had mild to moderate red discolored lungs. Following terminal sacrifice, one surviving male from the 107 ppm (0.623 mg/L) group, two surviving males and one surviving female from the 317 ppm (1.85 mg/L) group, and one surviving male and one surviving female from the 489 ppm (2.85 mg/L) group had red discolored lungs. However, euthanasia was by carbon dioxide inhalation and this finding may have been from euthanasia-associated hemorrhage in the lungs.

Particle Size Distribution: The report does not give mean MMADs and GSDs, however, iodomethane has a relatively low boiling point (42.4°C); while chloropicrin has a somewhat higher boiling point (112.2°) it has a relatively high vapor pressure (equivalent to 18.3 mm Hg at 20°C).

Chamber Environment	
Internal Chamber Volume	30 L(?)[a]
Mean Airflow (inlet)	7.0-9.8 LPM
Mean Temperature	19-21°C
Mean Relative Humidity	3 to 17%

[a]Not reported; however, on p. 27 of MRID 45641301 it is stated that "A minimum chamber airflow of 0.6 L/min/animal supplied by the generation system resulted in at least 12 chamber air changes per hour." As there were ten animals, there was at least 6 LPM (=360 LPH) airflow, and if there was then at least 12 chamber air changes per hour then the inference is that the chamber volume was approximately 30 L (360/12 = 30).

ACUTE TOX ONE-LINERS

1. **DP BARCODE:** D282078
2. **PC CODE:** 000011 Iodomethane
3. **CURRENT DATE:** June 18, 2002
4. **TEST MATERIAL:** [EPA File Symbol: 66330-UG]; TM-42501; Iodomethane 98%/Chloropicrin 2%, Lot No. 920178/30501-1, described as a yellow liquid with an expiration date of November 7, 2003.

Study/Species/Lab Study #/Date	MRID	Results	Tox. Cat.	Core Grade
Acute inhalation toxicity/rat/ MPI Research Inc. Mattawan MI/926-001/MARCH-28-2002	45641301	LC_{50} (M) = 2.89 mg/L; LC_{50} (F) = 4.18 mg/L; LC_{50} combined = 3.60 mg/L with 95% C.L. 3.02-4.24 mg/L. Groups of 5M & 5F Sprague-Dawley rats were exposed for 4 hrs to 107, 317, 489, 729 or 1036 ppm (=0.623, 1.85, 2.85, 4.25 and 6.03 mg/L). Report does not give MMADs or GSDs but Iodomethane has a low boiling point (42.4°C). No mortalities at 2 lowest concentrations; at 2.85 mg/L 2/5M and 0/5F died; at 4.25 mg/L 5/5M and 3/5F died; at 6.03 mg/L all died. At lowest exposure level (0.623 mg/L) symptoms were minimal (breathing abnormalities, vocalizations) with all animals normal by day 7.Symptoms included abnormal breathing, soft/few feces, vocalization, salivation, decreased activity, hunched posture. Exposure to test material at all concentrations resulted in body weight losses (10-28% for males, 12-18% for females) and reduced mean body weight gains. Rats dying during observation period had mild to moderate red discolored lungs.	IV	A

Core Grade Key: **A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated**

8/4/02

FILE NUMBER 06330-46

_____ No Data - File Room 'Make Ready' for _____.
(FM or Individual)

✓ _____ Data - File Room 'Assign Jacket to Shelf'

_____ Rejected - File Room 'Assign Jacket to Rejected Shelf'

Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

January 31, 2002

Mr. Peter Caulkins, Director
Registration Division (OPP)
US. Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, VA 22202

Subject: Arvesta Corporation
Application to Register TM-42501 for Pre-Plant Fumigant Non-Food Use

Dear Mr. Caulkins:

Arvesta Corporation (EPA Firm No. 66330), formerly Tomen Agro, Inc., submits this application to register an end-use product, TM-43501. TM-42501 contains a new active ingredient, Iodomethane (methyl iodide, TM-425). Iodomethane is a candidate replacement for all uses of methyl bromide and Arvesta has filed an application to register Iodomethane Technical, the source of the active ingredient in TM-42501, concurrent with this registration application. In this application Arvesta is requesting registration for pre-plant fumigation of fields intended for commercial production of strawberries, tomatoes, peppers, and ornamental flowers, plants, and bushes and replants of vines and trees for the control of soil-borne pests, including plant diseases, nematodes, insects, weed and grass seeds.

The active ingredient Iodomethane is a candidate replacement for all uses of methyl bromide. In this application Arvesta is requesting registration for use on tomatoes, peppers and strawberries, the pre-harvest uses that consume the most methyl bromide. EPA indicated in Pesticide Registration Notice 95-4 that it would expedite all applications for products and uses that will replace existing uses of methyl bromide because methyl bromide is being phased out under the Clean Air Act and the Montreal Protocol. Tomen, therefore, requests that EPA expedite the review of this application.

Timing

In its discussions with EPA, Arvesta agreed to submit this application together with the application for Iodomethane Technical by the end of January, 2002 and EPA agreed to complete its reviews and be prepared to make a registration decision in December, 2002 (telephone conversations with R. Keigwin and personal communication with P. Caulkins). Arvesta agreed to submit the product chemistry and acute toxicity data to support this end-use registration. We have enclosed the required studies, with the single exception of the acute inhalation toxicity study which will be submitted to the Agency in March 2002.

Contents of the Application

This application includes 9 volumes. Volume 1 is the Administrative Volume and includes the following administrative documents:

1. Application for Pesticide Registration, EPA Form 8570-1
2. Letter of Authorization Identifying Technology Sciences Group Inc. as agent
3. Certification with Respect to Citation of Data, EPA form 8570-34
4. Matrix of Data, EPA form 8570-35
5. Confidential Statement of Formula, EPA Form 8570-4
6. Five (5) copies of the proposed label

The remaining 8 volumes (of our 9 volume submission) contain the supporting scientific data. Three copies of each of these volumes are included. A listing of these volumes and the scientific studies they contain is included in the attached Transmittal Document.

We greatly appreciate the time and attention the EPA has provided Arvesta Corporation during the last several years as we have been developing this application to register a methyl bromide replacement.

Please contact me at 415-536-3482 if you have any questions or need further information.

Sincerely,

James L. Platt, Jr.

James L. Platt, Jr., Ph.D.
Project Manager, Iodomethane
Registration and Regulatory Affairs
Arvesta Corporation

Enclosures
RSS:OAM:JLP/cover letter to EPA TM-42501 01-23-02.doc

Cc: Peter Caulkins, EPA
Richard Keigwin, EPA
Robert Stewart, Technology Sciences Group Inc.
Arthur Lawyer, Technology Sciences Group Inc.
Desmond Byrne, Arvesta Corporation

TRANSMITTAL DOCUMENT

Name and Address of Submitter

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

Regulatory Action in Support of Which this Package Is Submitted

Registration of TM-42501

Transmittal Date

January 31, 2002

List of Submitted Studies

Volume	Citation
1	Administration Volume
2	Brookman, D.J. & K.K. Curry, 22-Jan-02, Product Properties - Group A TM-42501 End-Use Product, Technology Sciences Group Inc., TM-425-03
3	Mainey, A., 18-Jan-02, Analysis of Iodomethane and Chloropicrin in Two Formulations, Midwest Research Institute, 303516.1.023 & .024
4	Brookman, D.J. & K.K. Curry, 24-Jan-02, Product Properties - Group B TM-425-1 End-Use Product, Toxicon Corporation, TM-425-04
5	Bonnette, K.L., 28-Jan-02, An Acute Oral Toxicity Study (Up/Down Study Design) in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501), Springborn Laboratories, 3527.25
6	Bonnette, K.L., 28-Jan-02, An Acute Dermal Toxicity Study in Rats with Iodomethane/Chloropicrin 98:2 (TM-42501), Springborn Laboratories, 3527.26
7	Bonnette, K.L., 28-Jan-02, A Primary Eye Irritation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501), Springborn Laboratories, 3527.27
8	Bonnette, K.L., 28-Jan-02, A Primary Dermal Irriation Study in Rabbits with Iodomethane/Chloropicrin 98:2 (TM-42501), Springborn Laboratories, 3527.28

9 Bonnette, K.L., 28-Jan-02, A Dermal Sensitization Study (Modified Buehler Design) in Guinea Pigs with Iodomethane/Chloropicrin 98:2 (TM-42501), Springborn Laboratories, 3527.31

Company Official	Robert R. Stewart, Ph.D. Regulatory Agent
Company Name	Arvesta Corporation
Company Contact	James Platt Tel No. 415-536-3482

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.

TM-42501

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed and Grass Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse.

This product contains a small amount of chloropicrin, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for person exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3). The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration in the working area during soil fumigation does not exceed 0.1 ppm for chloropicrin or 5 ppm for iodomethane.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

With all bulk and mini-bulk containers, TM-42501 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product beyond a pump must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices incorporating natural rubber or aluminum or magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
  - Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
  - To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system prior to soil injection for leaks or worn out equipment.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts
- Follow all local government instructions for posting of treated areas.

During Fumigation:

- Immediately cover treated areas with plastic tarpaulin for a minimum of 7 days when shank injection is less than 18 inches.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report spill to the National Response Center (800-424-8802) if the quantity exceeds 102 lbs (5 gallons of product).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: TM-42501 controls soil-borne pests including nematodes, insects, weed and grass seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, and turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using TM-42501 should be conducted only according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of soil pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry soil borne pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply TM-42501 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 8 inches below the soil surface. The treated ground must be sealed with a gas-tight plastic tarpaulin immediately after the chisel is in the ground with a mechanical tarp layer, except when applied by deep-shank broadcast applications, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarp should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold, or if TM-42501 is applied in combination with chloropicrin with a suitable surfactant.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used to bioassay to determine if TM-42501 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of TM-42501 (from the chloropicrin warning agent) is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	TM-42501 / A**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that rates below 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period disc or plow the soil to help aeration.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Use 1 injection site per 100 square feed (on a 10 feet by 10 feet grid pattern) with the injection in the center of the area to be treated. Planting or replanting of trees or vines may begin 14 days after the period of exposure.

CHEMIGATION

Application by Drip fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

TM-42501 may be applied through buried drip tape. Use of a trap seal is required for all applications of this product.

The dilution ratio for drip-line fumigation is 700-1,000 ppm. One gallon of TM-42501 in 350 gallons of water is equivalent to 1,000 ppm.

Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

Use drip components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted TM-42501 or more than 1,000 ppm TM-42501 in the undiluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly.

Apply TM-42501 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

Apply the TM-42501 when conditions throughout the treatment zone are near field capacity. The concentration of TM-42501 in the drip lines must be between 700 and 1,000 ppm. TM-42501 must be metered into the water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

TM-42501 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs then discontinue the application immediately and cover the soil with soil to absorb the material.

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

The pesticide injection pipeline must also contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or 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 shutdown.

The system must contain functional inter-locking 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.

Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing TM-42501 equipped with a metering valve and flow meter.

Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of TM-42501. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW TM-42501 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

Apply this product only through buried drip tape, not through any other type of irrigation system except as described in this labeling.

Do not apply this product through any system that has access to public water systems.

Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 8 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 8 and 15 inches. The injection depth to preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Forward-curved chisels shall be used with either:

- An air fan dilution system on the application tractor; or
- Closing shoes and compaction roller.

- Injection depth shall be at least 20 inches.
- Injection spacing shall be 66 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 56 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 400 pounds of iodomethane per acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 20 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.
- Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

The operator of the property to be treated shall submit a proposed worksite plan to the commissioner for evaluation at least 7 days prior to submitting a notice of intent. The proposed worksite plan shall include, but is not limited to, method of application to be used, acreage and identification of each application block to be treated, application rate to be used, description of the notification procedure to property operators pursuant to state notification requirements.

An application block shall not exceed 40 acres.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Fumigation equipment shall be operated to eliminate pesticide drip by clearing the fumigant from the injection device before it is lifted or removed from the soil.

- **Iodomethane Field Fumigation Notification Requirements**

Notification to the Commissioner: The operator of the property to be treated shall assure that the county agricultural commissioner is notified (notice of intent) at least 48 hours prior to commencing fumigation. The notification shall include:

(1) Restricted Use Permit number;
(2) Name and address of permittee and applicator;
(3) Location of areas to be treated and name of farm operator;
(4) Crop or commodity, or if there is no crop or commodity the site to be treated;
(5) Approximate acres or other units;
(6) Method of application;
(7) Pesticide(s);
(8) Dilution, volume per acre or other units, and dosage;
(9) Pest(s) to be controlled;
(10) Date intended application is to commence;
(11) Hour the fumigation is intended to commence.

The fumigation shall not commence sooner than the intended starting time or later than 12 hours after the intended starting time specified on the notice of intent. If fumigation of an application block does not commence within the time specified, a new notice of intent must be submitted but no 48-hour waiting period is needed unless required by the agricultural commissioner. One notice of intent may be allowed for multiple application blocks to be fumigated sequentially. In lieu of submitting a separate notice of intent for each application block to be fumigated, the notice may include a multiple block schedule. The schedule must specify the date and time each application block is intended to be fumigated.

Notification to Property Operators.

The operator of the property to be treated shall assure that operators of the following properties within 300 feet from the perimeter of the outer buffer zone receive notification that a permit to use iodomethane near their property has been issued by the commissioner: properties that contain schools, residences, hospitals, convalescent homes, onsite employee housing, or other similar sites identified by the commissioner. Notification shall be in writing, or by other means approved by the commissioner. The operator of the property to be treated shall assure that notification is delivered at least seven (7) days prior to the submission of the notice of intent. The notification shall include the following information:

(1) The name of the chemical(s) to be applied;
(2) Name, business address, and business telephone number of the operator of the property to be treated;
(3) Name, business address, and business telephone number of the commissioner;
(4) The earliest and latest dates that the fumigation will start; and
(5) How to request subsequent notification of specific date and time of the fumigation.

The operator of the property to be treated shall assure that specific notification of the date and time of the start of the fumigation and anticipated expiration of buffer zones is provided to those persons who request specific fumigation information. This specific fumigation notification shall be provided at least 48 hours prior to starting the fumigation. If a request for specific notification is received after the submission of the notice of intent and before the fumigation begins, the specific fumigation notification shall be provided prior to starting the fumigation, but the 48-hour requirement shall not apply. If the fumigation of an application block does not commence within the time frame specified, then a new notification must be provided to those persons who requested the information, but the 48-hour requirement shall not apply unless required by the commissioner.

Fumigation Handling Activities

- Fumigation handling activities includes an employee involved in assisting with covering the tarpaulin at the end of the rows (shoveling); observing the overall operation, checking tarpaulin placement, changing cylinders (copiloting); operating application equipment (driving); and tarpaulin cutting and removal.

Employer Recordkeeping

- The employer shall maintain records for all employees involved in application, tarpaulin cutting, tarpaulin repair, and tarpaulin removal activities. The records shall identify the person, work activityies, dates, duration of handling, the product registration number, and the brand name of the iodomethane product handled. The employer shall maintain these use records at a central location for two years and the records shall be made available to the commissioner upon request.

Employee Protection Requirements for Fumigation Handlers.

- Employees involved primarily in shoveling shall work only at the ends of the application rows.
- Whenever iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent, is used for field soil fumigation, at least two trained employees shall be present during introduction of the fumigant and removal of tarpaulins, if used.

Limited Work Hours

- Multiple Task Employees. An employee may work in more than one work task and/or application method in a 24-hour period as long as the employee's total work hours do not exceed 8 total hours .

Tarpaulin Cutting and Removal Procedures

- Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).

- Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.

Tarpaulin Repair

- The operator of the property shall assure that a "tarpaulin repair response plan" is provided to the commissioner. The tarpaulin repair response plan shall identify the responsibilities of the licensed pest control business and/or the permittee with regard to tarpaulin damage detection and repair activities. At a minimum, the tarpaulin repair response plan shall indicate the parties responsible for the repair and incorporate the applicable elements listed below.

- The "tarpaulin repair response plan" approved by the commissioner in the worksite plan must state with specificity the situations when tarpaulin repair must be conducted. The situations should be based on, but not limited to, hazard to the public, residents or workers; proximity to occupied structures, size of the damaged area(s); timing of damage; feasibility of repair; and environmental factors such as wind speed and direction.

- The ambient air in the damaged areas of the tarpaulin to be repaired must be tested for iodomethane concentration by a certified applicator of the licensed pest control business that made the application, or by a certified applicator employee of the permittee, or certified applicator permittee, using a testing device as specified by the labeling. The certified applicator must wear self-contained breathing apparatus (SCBA) when conducting these tests.

- All repair work areas must test less than 5 ppm iodomethane before any employee without respiratory protection shall be allowed to enter and conduct tarpaulin repair. Such employee is limited to one (1) work hour in a 24-hour period.

Maximum Work Hours Exemption

- The maximum work hour restrictions stated above under Limited Work Hours and Tarpaulin Repair for fumigation handlers shall not apply if the fumigation handlers wear National Institute for Occupational Safety and Health (NIOSH) certified respiratory protection specifically recommended for use in atmospheres containing less than 5 ppm iodomethane and the NIOSH certified respiratory protection is worn for the entire duration of the fumigation handling activities.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

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

2/04/2002

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ARVESTA CORPORATION
100 FIRST STREET, SUITE 1700
SAN FRANCISCO, CA 94105

PRODUCT NAME: TM-42501
COMPANY NAME: ARVESTA CORPORATION
OPP IDENTIFICATION NUMBER: 284049
EPA FILE SYMBOL: 66330-UG
EPA RECEIPT DATE: 2/04/02

SUBJECT: RECEIPT OF APPLICATION FOR A NEW REGISTRATION

DEAR REGISTRANT:

The Office of Pesticides Programs has received your application for a new registration and it has passed an administrative screen for completeness.

Please note that this is only a notification of receipt of your application. This is only the first step in the application process, and does NOT constitute approval.

If you have any questions, please contact Mary Waller at 703-308-9354.

Sincerely,

Patricia R. Moore

Front End Processing Staff
Information Services Branch
Information Resources & Services Division

Please read instructions on reverse before completing form. Form Approved. OMB No. 2070-0060

EPA

United States
Environmental Protection Agency
Washington, DC 20460

[X] Registration
[ ] Amendment
[ ] Other

OPP Identifier Number
284049

Application for Pesticide - Section I

1. Company/Product Number: 66330-UG	2. EPA Product Manager: Mary Waller	3. Proposed Classification: [ ] None [X] Restricted
4. Company/Product (Name): TM-42501	PM#: 21	
5. Name and Address of Applicant *(Include ZIP Code)*: Arvesta Corporation, 100 First Street, Suite 1700, San Francisco, CA 94105 [ ] *Check if this is a new address*	6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. ____ Product Name ____	

Section - II

[ ] Amendment - Explain below.
[X] Resubmission in response to Agency letter dated ____
[ ] Notification - Explain below.
[ ] Final printed labels in response to Agency letter dated ____
[ ] "Me Too" Application.
[ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes* [X] No	[ ] Yes [X] No	[ ] Yes [X] No	[X] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) ____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[X] Label [ ] Container	25, 110, and 400 gallons	[X] On Label [ ] On Labeling accompanying product

6. Manner in Which Label is Affixed to Product: [ ] Lithograph [X] Paper glued [ ] Stenciled [ ] Other ____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Robert R. Stewart, Ph.D.	Regulatory Agent	202-828-8963

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title	4. Typed Name	5. Date
[signature]	Regulatory Agent	Robert R. Stewart, Ph.D.	January 31, 2002

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

PAPERWORK REDUCTION ACT NOTICE and INSTRUCTIONS

PAPERWORK REDUCTION ACT NOTICE: Public reporting burden for this collection of information is estimated to average 0.85 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, (2136), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

INSTRUCTIONS: This form is to be used for all applications for new registration, end use reregistration, amendment, resubmission, to applications for notifications, final printed labeling, reregistration, etc. In order to process an application for a new registration submitted on this form, the following material must accompany the application:

1. Certification with Respect to Citation of Data (EPA Form 8570-29). [If not exempted by 40 CFR 152.81 (b) (4)];
2. Confidential Statement of Formula (EPA Form 8570-4);
3. Formulator's Exemption Statement (EPA Form 8570-27);
4. Five copies of draft labeling;
5. Three copies of any data submitted;
6. Authorization letter where applicable;
7. Matrices where applicable.

Submission of Labeling - Labeling should first be submitted in the form of draft labels with all applications for new registration. Such draft labels may be in the form of typed label text on 8.5 x 11 inch paper for submission or a mockup of the proposed label. If prepared for mockup, it should be constructed in a way as to facilitate storage in an 8.5 x 11 inch file. Mockup labels significantly smaller than 8.5 x 11 inches should be mounted on 8.5 x 11 inch paper for submission.

Submission of Data - Data submitted in support of this application must be submitted in accordance with PR Notice 86-5.

SPECIFIC INSTRUCTIONS: Please read the instructions listed below before completing this application. First determine the type of registration action, listed in Block A, for which you are submitting this application. For applications submitted in connection with New Registration actions, Sections I, III, and IV must be completed by the applicant. For applications submitted in connection with amended reregistration actions, resubmissions, notifications, reregistrations, etc., Sections I, II, and IV must be completed by the applicant.

Block A - Check the appropriate action for which you are submitting this form.

SECTION I - This section must be completed, as applicable, for all registration actions.

1. **Company/Product Number** - Insert your Company Number, if one has been assigned by EPA. This number may have been assigned to you as a basic registrant, a distributor, or as an establishment. If your product is registered, insert the Product Number.
2. **EPA Product Manager** - If known, fill in the name and PM number of the EPA Product Manager.
3. **Proposed Classification** - Specify the proposed classification of this product.
4. **Product Name** - Enter the complete product name of this pesticide as it will appear on the label. The name must be specific to this product only. Duplication of names is not permitted among products of the same company. Do not include any brand name or company line designations.
5. **Name and Address of Applicant** - The name of the firm or person and address shown in your application is the person or firm to whom the registration will be issued. If you are acting in behalf of another party, you must submit authorization from that party to act for them in registration matters. An applicant not residing in the United States must have an authorized agent residing in the United States to act for them in all registration matters. The name and complete mailing address of such an agent must accompany this application.
6. **Expedited Review** - FIFRA section 3 (c) 3 (B) provides for expedited review of applications for registration, or amendments to existing registrations, that are similar or identical to other pesticide products that are currently registered with the EPA. In order for your application to be eligible for expedited review, you must provide us with the EPA Registration Number and product name of the product you believe is similar to or identical to your product. The product must be similar or identical in both formulation and labeled uses.

SECTION II - This section must be completed for all applications submitted to amend the registration only of a currently registered product (Amendment), for a resubmission in response to an Agency letter, for notifications to the Agency, for the submission of final printed labeling, for reregistration and for any other action that pertains to a specific EPA-registered product. This section is not to be used for a new application for registration.

1. **Subject of submission** - Check the applicable block and provide the Agency letter date if appropriate. Provide a brief explanation of the purpose(s) for the submission, such as "the addition of a site, pest or crop (specify)"; "amend the Confidential Statement of Formula by..."; "reregistration submission"; "general label revision of use directions." Attach a separate page if additional space is needed.

SECTION III (Packaging and Container Information) - This Section must be completed for all applications submitted in connection with new registration or applicable amendments.

1. **Type of Packaging** - Check the appropriate block if your product will be packaged in the indicated packaging types. Indicate the size of the individual packets and number per retail container.
2. **Type of Retail Container** - Indicate type of container in which product will be marketed.
3. **Location of Net Contents** - Indicate the location of the net contents information for your product.
4. **Size(s) of Retail Container** - Specify the net contents of all retail containers for your product.
5. **Location of Use Directions** - Indicate the location of the use directions for your product.
6. **Manner in which label is affixed to product** - Indicated the method product label is attached to retail container.

SECTION IV (Contact Point) - This Section must be completed for all applications for Registration actions, i.e., new products registration, resubmission, "me-too," reregistration, etc.

1-5. Self-explanatory.
6. EPA Use Only.

Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060

EPA

United States
Environmental Protection Agency
Washington, DC 20460

[X] Registration
[ ] Amendment
[ ] Other

OPP Identifier Number
284049

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
66330-UG	Mary Waller	[ ] None [X] Restricted
4. Company/Product (Name) TM-42501	PM# 21	

5. Name and Address of Applicant *(Include ZIP Code)*
Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105

[ ] *Check if this is a new address*

6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section - II

[ ] Amendment - Explain below.
[ ] Resubmission in response to Agency letter dated _____
[ ] Notification - Explain below.
[ ] Final printed labels in response to Agency letter dated _____
[ ] "Me Too" Application.
[ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes* [X] No	[ ] Yes [X] No	[ ] Yes [X] No	[X] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
Certification must be submitted	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[X] Label [ ] Container	25, 110, and 400 gallons	[X] On Label [ ] On Labeling accompanying product

6. Manner in Which Label is Affixed to Product [ ] Lithograph [X] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Robert R. Stewart, Ph.D.	Regulatory Agent	202-828-8963

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

Signature	3. Title	
	Regulatory Agent	
4. Typed Name: Robert R. Stewart, Ph.D.	5. Date: January 31, 2002	

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of San Francisco } ss.

On Jan. 24, 2002 (Date), before me, Marissa N. Carlos. Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),

personally appeared Desmond Byrne (Name(s) of Signer(s)),

☑ personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(~~s~~) whose name(~~s~~) (~~is/are~~) subscribed to the within instrument and acknowledged to me that (~~he/she/they~~) executed the same in (~~his/her/their~~) authorized capacity(~~ies~~), and that by (~~his/her/their~~) signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(s) acted, executed the instrument.

MARISSA N. CARLOS
Commission #1311953
Notary Public - California
San Francisco County
My Comm. Expires Jul 2, 2005

WITNESS my hand and official seal.

Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Tomen Agro, Inc. Registration of Iodomethane + Formulations Letter of Authorization

Document Date: Jan. 24, 2002 Number of Pages: 01

Signer(s) Other Than Named Above: —

Capacity(ies) Claimed by Signer

Signer's Name:
☐ Individual
☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other:

Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

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Arvesta

Arvesta Corporation
100 First Street, Suite 1700
San Francisco, CA 94105
Tel (415) 536-3480
Fax (415) 284-9883
www.arvesta.com

January 24, 2002

Mr. Peter Caulkins, Acting Director
Registration Division (OPP)
US Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, VA 22202

Subject: Tomen Agro, Inc.
Registration of Iodomethane and Formulations
Letter of Authorization

Dear Mr. Caulkins:

Arvesta Corporation, also known as Tomen Agro, Inc., has an agreement with Technology Sciences Group Inc. (TSG) to provide regulatory assistance regarding the registration of the subject pesticide products. This letter constitutes authorization for EPA to discuss the status of these registrations and supporting data with representatives of TSG, including disclosure of trade secret information.

We thank you for your cooperation with TSG regarding the applications for registration of these products.

Sincerely,

Desmond Byrne

Desmond Byrne
Executive Director
Registrations & Regulatory Affairs

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460.
Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Arvesta Corporation 100 First Street, Suite 1700, San francisco, CA 94105 617-536-3482	EPA Registration Number/File Symbol
Active Ingredient(s) and/or representative test compound(s) Iodomethane	Date January 31, 2002
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial, non-food	Product Name TM-42501

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☑ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses .

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (I) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature	Date	Typed or Printed Name and Title
	Jan. 29, 2002	Robert R. Stewart, Ph.D. Regulatory Agent

EPA Form 8570-34 (8-97) Electronic and Paper versions available. Submit only Paper version.

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date January 31, 2002	EPA Reg No./File Symbol 66330-	Page 1 of 2
Applicant's/Registrant's Name & Address Arvesta Corporation, 100 First Street, Suite 1700, San Francisco, CA 94105	Product TM-42501:	
Ingredient 98% Mel + 2% Pic		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1550	Product Identity and Composition	This Submission	Arvesta Corporation	Own	
830.1600	Description of Materials Used to Produce Product	This Submission	Arvesta Corporation	Own	
830.1650	Description of Formulation Process	This Submission	Arvesta Corporation	Own	
830.1700	Preliminary Analysis	This Submission	Arvesta Corporation	Own	
830.1750	Certified Limits	This Submission	Arvesta Corporation	Own	
830.1800	Enforcement Analytical Method	This Submission	Arvesta Corporation	Own	
830.1900	Submittal of Samples	This Submission	Arvesta Corporation	Own	
830.6303	Physical State	This Submission	Arvesta Corporation	Own	
830.6314	Oxidation/Reduction: Chemical Incompatability	This Submission	Arvesta Corporation	Own	
830.6315	Flammability	This Submission	Arvesta Corporation	Own	
830.6316	Explodability	This Submission	Arvesta Corporation	Own	
830.6317	Storage Stability	This Submission	Arvesta Corporation	Own	
830.6319	Miscibility	This Submission	Arvesta Corporation	Own	
830.6320	Corrosion Characteristics	This Submission	Arvesta Corporation	Own	

Signature	Name and Title	Date
	Robert R. Stewart, Ph.D., Regulatory Agent	Jan. 31, 2002

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

Form Approved OMB No. 2070-0060

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401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

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Applicant's/Registrant's Name & Address Arvesta Corporation, 100 First Street, Suite 1700, San Francisco, CA 94105	Product TM-42501:	
Ingredient 98% Mel + 2% Pic		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6321	Dielectric Breakdown Voltage	This Submission	Arvesta Corporation	Own	
830.7000	pH	This Submission	Arvesta Corporation	Own	
830.7100	Viscosity	This Submission	Arvesta Corporation	Own	
830.7300	Density, Bulk Density, Specific Gravity	This Submission	Arvesta Corporation	Own	
870.1100	Acute Oral Toxicity	This Submission	Arvesta Corporation	Own	
870.1200	Acute Dermal Toxicity	This Submission	Arvesta Corporation	Own	
870.1300	Acute Inhalation Toxicity	This Submission	Arvesta Corporation	Own	
870.2400	Acute Eye Irritation	This Submission	Arvesta Corporation	Own	
870.2500	Acute Dermal Irritation	This Submission	Arvesta Corporation	Own	
870.2600	Skin Sensitization	This Submission	Arvesta Corporation	Own	

Signature	Name and Title	Date
	Robert R. Stewart, Ph.D., Regulatory Agent	Jan. 31, 2002

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Date January 31, 2002	EPA Reg No./File Symbol 66330-	Page 1 of 2
Applicant's/Registrant's Name & Address Arvesta Corporation, 100 First Street, Suite 1700, San Francisco, CA 94105	Product TM-42501:	
Ingredient 98% Mel + 2% Pic		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
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			Arvesta Corporation	Own	
			Arvesta Corporation	Own	
			Arvesta Corporation	Own	

Signature	Name and Title	Date
	Robert R. Stewart, Ph.D., Regulatory Agent	Jan. 31, 2002

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Agency Internal Use Copy

Form Approved OMB No. 2070-0060

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

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Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
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			Arvesta Corporation	Own	

Signature	Name and Title	Date
	Robert R. Stewart, Ph.D., Regulatory Agent	Jan. 31, 2002

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

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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.

TM-42501

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed and Grass Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%

One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse.

This product contains a small amount of chloropicrin, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for person exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3). The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration in the working area during soil fumigation does not exceed 0.1 ppm for chloropicrin or 5 ppm for iodomethane.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

With all bulk and mini-bulk containers, TM-42501 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product beyond a pump must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices incorporating natural rubber or aluminum or magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
  - Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
  - To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system prior to soil injection for leaks or worn out equipment.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts
- Follow all local government instructions for posting of treated areas.

During Fumigation:

- Immediately cover treated areas with plastic tarpaulin for a minimum of 7 days when shank injection is less than 18 inches.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report spill to the National Response Center (800-424-8802) if the quantity exceeds 102 lbs (5 gallons of product).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: TM-42501 controls soil-borne pests including nematodes, insects, weed and grass seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, and turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using TM-42501 should be conducted only according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of soil pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry soil borne pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply TM-42501 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 8 inches below the soil surface. The treated ground must be sealed with a gas-tight plastic tarpaulin immediately after the chisel is in the ground with a mechanical tarp layer, except when applied by deep-shank broadcast applications, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarp should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold, or if TM-42501 is applied in combination with chloropicrin with a suitable surfactant.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used to bioassay to determine if TM-42501 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of TM-42501 (from the chloropicrin warning agent) is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	TM-42501 / A**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that rates below 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period disc or plow the soil to help aeration.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Use 1 injection site per 100 square feed (on a 10 feet by 10 feet grid pattern) with the injection in the center of the area to be treated. Planting or replanting of trees or vines may begin 14 days after the period of exposure.

CHEMIGATION

Application by Drip fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

TM-42501 may be applied through buried drip tape. Use of a trap seal is required for all applications of this product.

The dilution ratio for drip-line fumigation is 700-1,000 ppm. One gallon of TM-42501 in 350 gallons of water is equivalent to 1,000 ppm.

Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

Use drip components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted TM-42501 or more than 1,000 ppm TM-42501 in the undiluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly.

Apply TM-42501 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

Apply the TM-42501 when conditions throughout the treatment zone are near field capacity. The concentration of TM-42501 in the drip lines must be between 700 and 1,000 ppm. TM-42501 must be metered into the water.

<u>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</u>

TM-42501 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs then discontinue the application immediately and cover the soil with soil to absorb the material.

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

The pesticide injection pipeline must also contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or 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 shutdown.

The system must contain functional inter-locking 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.

Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing TM-42501 equipped with a metering valve and flow meter.

Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of TM-42501. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW TM-42501 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

Apply this product only through buried drip tape, not through any other type of irrigation system except as described in this labeling.

Do not apply this product through any system that has access to public water systems.

Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 8 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 8 and 15 inches. The injection depth to preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Forward-curved chisels shall be used with either:

- An air fan dilution system on the application tractor; or
- Closing shoes and compaction roller.

- Injection depth shall be at least 20 inches.
- Injection spacing shall be 66 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 56 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 400 pounds of iodomethane per acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 20 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.

  Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

The operator of the property to be treated shall submit a proposed worksite plan to the commissioner for evaluation at least 7 days prior to submitting a notice of intent. The proposed worksite plan shall include, but is not limited to, method of application to be used, acreage and identification of each application block to be treated, application rate to be used, description of the notification procedure to property operators pursuant to state notification requirements.

An application block shall not exceed 40 acres.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Fumigation equipment shall be operated to eliminate pesticide drip by clearing the fumigant from the injection device before it is lifted or removed from the soil.

Iodomethane Field Fumigation Notification Requirements

Notification to the Commissioner: The operator of the property to be treated shall assure that the county agricultural commissioner is notified (notice of intent) at least 48 hours prior to commencing fumigation. The notification shall include:

(1) Restricted Use Permit number;
(2) Name and address of permittee and applicator;
(3) Location of areas to be treated and name of farm operator;
(4) Crop or commodity, or if there is no crop or commodity the site to be treated;
(5) Approximate acres or other units;
(6) Method of application;
(7) Pesticide(s);
(8) Dilution, volume per acre or other units, and dosage;
(9) Pest(s) to be controlled;
(10) Date intended application is to commence;
(11) Hour the fumigation is intended to commence.

The fumigation shall not commence sooner than the intended starting time or later than 12 hours after the intended starting time specified on the notice of intent. If fumigation of an application block does not commence within the time specified, a new notice of intent must be submitted but no 48-hour waiting period is needed unless required by the agricultural commissioner. One notice of intent may be allowed for multiple application blocks to be fumigated sequentially. In lieu of submitting a separate notice of intent for each application block to be fumigated, the notice may include a multiple block schedule. The schedule must specify the date and time each application block is intended to be fumigated.

Notification to Property Operators.

The operator of the property to be treated shall assure that operators of the following properties within 300 feet from the perimeter of the outer buffer zone receive notification that a permit to use iodomethane near their property has been issued by the commissioner: properties that contain schools, residences, hospitals, convalescent homes, onsite employee housing, or other similar sites identified by the commissioner. Notification shall be in writing, or by other means approved by the commissioner. The operator of the property to be treated shall assure that notification is delivered at least seven (7) days prior to the submission of the notice of intent. The notification shall include the following information:

(1) The name of the chemical(s) to be applied;
(2) Name, business address, and business telephone number of the operator of the property to be treated;
(3) Name, business address, and business telephone number of the commissioner;
(4) The earliest and latest dates that the fumigation will start; and
(5) How to request subsequent notification of specific date and time of the fumigation.

The operator of the property to be treated shall assure that specific notification of the date and time of the start of the fumigation and anticipated expiration of buffer zones is provided to those persons who request specific fumigation information. This specific fumigation notification shall be provided at least 48 hours prior to starting the fumigation. If a request for specific notification is received after the submission of the notice of intent and before the fumigation begins, the specific fumigation notification shall be provided prior to starting the fumigation, but the 48-hour requirement shall not apply. If the fumigation of an application block does not commence within the time frame specified, then a new notification must be provided to those persons who requested the information, but the 48-hour requirement shall not apply unless required by the commissioner.

Fumigation Handling Activities

- Fumigation handling activities includes an employee involved in assisting with covering the tarpaulin at the end of the rows (shoveling); observing the overall operation, checking tarpaulin placement, changing cylinders (copiloting); operating application equipment (driving); and tarpaulin cutting and removal.

Employer Recordkeeping

- The employer shall maintain records for all employees involved in application, tarpaulin cutting, tarpaulin repair, and tarpaulin removal activities. The records shall identify the person, work activityies, dates, duration of handling, the product registration number, and the brand name of the iodomethane product handled. The employer shall maintain these use records at a central location for two years and the records shall be made available to the commissioner upon request.

Employee Protection Requirements for Fumigation Handlers.

- Employees involved primarily in shoveling shall work only at the ends of the application rows.
- Whenever iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent, is used for field soil fumigation, at least two trained employees shall be present during introduction of the fumigant and removal of tarpaulins, if used.

Limited Work Hours

- Multiple Task Employees. An employee may work in more than one work task and/or application method in a 24-hour period as long as the employee's total work hours do not exceed 8 total hours .

Tarpaulin Cutting and Removal Procedures

- Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).

- Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.

Tarpaulin Repair

- The operator of the property shall assure that a "tarpaulin repair response plan" is provided to the commissioner. The tarpaulin repair response plan shall identify the responsibilities of the licensed pest control business and/or the permittee with regard to tarpaulin damage detection and repair activities. At a minimum, the tarpaulin repair response plan shall indicate the parties responsible for the repair and incorporate the applicable elements listed below.

- The "tarpaulin repair response plan" approved by the commissioner in the worksite plan must state with specificity the situations when tarpaulin repair must be conducted. The situations should be based on, but not limited to, hazard to the public, residents or workers; proximity to occupied structures, size of the damaged area(s); timing of damage; feasibility of repair; and environmental factors such as wind speed and direction.

- The ambient air in the damaged areas of the tarpaulin to be repaired must be tested for iodomethane concentration by a certified applicator of the licensed pest control business that made the application, or by a certified applicator employee of the permittee, or certified applicator permittee, using a testing device as specified by the labeling. The certified applicator must wear self-contained breathing apparatus (SCBA) when conducting these tests.

- All repair work areas must test less than 5 ppm iodomethane before any employee without respiratory protection shall be allowed to enter and conduct tarpaulin repair. Such employee is limited to one (1) work hour in a 24-hour period.

Maximum Work Hours Exemption

- The maximum work hour restrictions stated above under Limited Work Hours and Tarpaulin Repair for fumigation handlers shall not apply if the fumigation handlers wear National Institute for Occupational Safety and Health (NIOSH) certified respiratory protection specifically recommended for use in atmospheres containing less than 5 ppm iodomethane and the NIOSH certified respiratory protection is worn for the entire duration of the fumigation handling activities.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

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.

TM-42501

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed and Grass Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%
One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse.

This product contains a small amount of chloropicrin, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for person exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3). The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration in the working area during soil fumigation does not exceed 0.1 ppm for chloropicrin or 5 ppm for iodomethane.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

With all bulk and mini-bulk containers, TM-42501 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product beyond a pump must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices incorporating natural rubber or aluminum or magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
  - Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
  - To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system prior to soil injection for leaks or worn out equipment.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts
- Follow all local government instructions for posting of treated areas.

During Fumigation:

- Immediately cover treated areas with plastic tarpaulin for a minimum of 7 days when shank injection is less than 18 inches.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report spill to the National Response Center *(800-424-8802) if the quantity exceeds 102 lbs (5 gallons of product).*

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: TM-42501 controls soil-borne pests including nematodes, insects, weed and grass seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, and turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using TM-42501 should be conducted only according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of soil pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry soil borne pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply TM-42501 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 8 inches below the soil surface. The treated ground must be sealed with a gas-tight plastic tarpaulin immediately after the chisel is in the ground with a mechanical tarp layer, except when applied by deep-shank broadcast applications, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarp should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold, or if TM-42501 is applied in combination with chloropicrin with a suitable surfactant.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used to bioassay to determine if TM-42501 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of TM-42501 (from the chloropicrin warning agent) is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	TM-42501 / A**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that rates below 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period disc or plow the soil to help aeration.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Use 1 injection site per 100 square feed (on a 10 feet by 10 feet grid pattern) with the injection in the center of the area to be treated. Planting or replanting of trees or vines may begin 14 days after the period of exposure.

CHEMIGATION

Application by Drip fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

TM-42501 may be applied through buried drip tape. Use of a trap seal is required for all applications of this product.

The dilution ratio for drip-line fumigation is 700-1,000 ppm. One gallon of TM-42501 in 350 gallons of water is equivalent to 1,000 ppm.

Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

Use drip components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted TM-42501 or more than 1,000 ppm TM-42501 in the undiluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly.

Apply TM-42501 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

Apply the TM-42501 when conditions throughout the treatment zone are near field capacity. The concentration of TM-42501 in the drip lines must be between 700 and 1,000 ppm. TM-42501 must be metered into the water.

<u>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</u>

TM-42501 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs then discontinue the application immediately and cover the soil with soil to absorb the material.

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

The pesticide injection pipeline must also contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or 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 shutdown.

The system must contain functional inter-locking 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.

Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing TM-42501 equipped with a metering valve and flow meter.

Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of TM-42501. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW TM-42501 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

Apply this product only through buried drip tape, not through any other type of irrigation system except as described in this labeling.

Do not apply this product through any system that has access to public water systems.

Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 8 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 8 and 15 inches. The injection depth to preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Forward-curved chisels shall be used with either:

- An air fan dilution system on the application tractor; or
- Closing shoes and compaction roller.

- Injection depth shall be at least 20 inches.
- Injection spacing shall be 66 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 56 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 400 pounds of iodomethane per acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 20 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.

  Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

The operator of the property to be treated shall submit a proposed worksite plan to the commissioner for evaluation at least 7 days prior to submitting a notice of intent. The proposed worksite plan shall include, but is not limited to, method of application to be used, acreage and identification of each application block to be treated, application rate to be used, description of the notification procedure to property operators pursuant to state notification requirements.

An application block shall not exceed 40 acres.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Fumigation equipment shall be operated to eliminate pesticide drip by clearing the fumigant from the injection device before it is lifted or removed from the soil.

Iodomethane Field Fumigation Notification Requirements

Notification to the Commissioner: The operator of the property to be treated shall assure that the county agricultural commissioner is notified (notice of intent) at least 48 hours prior to commencing fumigation. The notification shall include:

(1) Restricted Use Permit number;
(2) Name and address of permittee and applicator;
(3) Location of areas to be treated and name of farm operator;
(4) Crop or commodity, or if there is no crop or commodity the site to be treated;
(5) Approximate acres or other units;
(6) Method of application;
(7) Pesticide(s);
(8) Dilution, volume per acre or other units, and dosage;
(9) Pest(s) to be controlled;
(10) Date intended application is to commence;
(11) Hour the fumigation is intended to commence.

The fumigation shall not commence sooner than the intended starting time or later than 12 hours after the intended starting time specified on the notice of intent. If fumigation of an application block does not commence within the time specified, a new notice of intent must be submitted but no 48-hour waiting period is needed unless required by the agricultural commissioner. One notice of intent may be allowed for multiple application blocks to be fumigated sequentially. In lieu of submitting a separate notice of intent for each application block to be fumigated, the notice may include a multiple block schedule. The schedule must specify the date and time each application block is intended to be fumigated.

Notification to Property Operators.

The operator of the property to be treated shall assure that operators of the following properties within 300 feet from the perimeter of the outer buffer zone receive notification that a permit to use iodomethane near their property has been issued by the commissioner: properties that contain schools, residences, hospitals, convalescent homes, onsite employee housing, or other similar sites identified by the commissioner. Notification shall be in writing, or by other means approved by the commissioner. The operator of the property to be treated shall assure that notification is delivered at least seven (7) days prior to the submission of the notice of intent. The notification shall include the following information:

(1) The name of the chemical(s) to be applied;
(2) Name, business address, and business telephone number of the operator of the property to be treated;
(3) Name, business address, and business telephone number of the commissioner;
(4) The earliest and latest dates that the fumigation will start; and
(5) How to request subsequent notification of specific date and time of the fumigation.

The operator of the property to be treated shall assure that specific notification of the date and time of the start of the fumigation and anticipated expiration of buffer zones is provided to those persons who request specific fumigation information. This specific fumigation notification shall be provided at least 48 hours prior to starting the fumigation. If a request for specific notification is received after the submission of the notice of intent and before the fumigation begins, the specific fumigation notification shall be provided prior to starting the fumigation, but the 48-hour requirement shall not apply. If the fumigation of an application block does not commence within the time frame specified, then a new notification must be provided to those persons who requested the information, but the 48-hour requirement shall not apply unless required by the commissioner.

Fumigation Handling Activities

- Fumigation handling activities includes an employee involved in assisting with covering the tarpaulin at the end of the rows (shoveling); observing the overall operation, checking tarpaulin placement, changing cylinders (copiloting); operating application equipment (driving); and tarpaulin cutting and removal.

Employer Recordkeeping

- The employer shall maintain records for all employees involved in application, tarpaulin cutting, tarpaulin repair, and tarpaulin removal activities. The records shall identify the person, work activityies, dates, duration of handling, the product registration number, and the brand name of the iodomethane product handled. The employer shall maintain these use records at a central location for two years and the records shall be made available to the commissioner upon request.

Employee Protection Requirements for Fumigation Handlers.

- Employees involved primarily in shoveling shall work only at the ends of the application rows.
- Whenever iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent, is used for field soil fumigation, at least two trained employees shall be present during introduction of the fumigant and removal of tarpaulins, if used.

Limited Work Hours

- Multiple Task Employees. An employee may work in more than one work task and/or application method in a 24-hour period as long as the employee's total work hours do not exceed 8 total hours .

Tarpaulin Cutting and Removal Procedures

- Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).

- Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.

Tarpaulin Repair

- The operator of the property shall assure that a "tarpaulin repair response plan" is provided to the commissioner. The tarpaulin repair response plan shall identify the responsibilities of the licensed pest control business and/or the permittee with regard to tarpaulin damage detection and repair activities. At a minimum, the tarpaulin repair response plan shall indicate the parties responsible for the repair and incorporate the applicable elements listed below.

- The "tarpaulin repair response plan" approved by the commissioner in the worksite plan must state with specificity the situations when tarpaulin repair must be conducted. The situations should be based on, but not limited to, hazard to the public, residents or workers; proximity to occupied structures, size of the damaged area(s); timing of damage; feasibility of repair; and environmental factors such as wind speed and direction.

- The ambient air in the damaged areas of the tarpaulin to be repaired must be tested for iodomethane concentration by a certified applicator of the licensed pest control business that made the application, or by a certified applicator employee of the permittee, or certified applicator permittee, using a testing device as specified by the labeling. The certified applicator must wear self-contained breathing apparatus (SCBA) when conducting these tests.

- All repair work areas must test less than 5 ppm iodomethane before any employee without respiratory protection shall be allowed to enter and conduct tarpaulin repair. Such employee is limited to one (1) work hour in a 24-hour period.

Maximum Work Hours Exemption

- The maximum work hour restrictions stated above under Limited Work Hours and Tarpaulin Repair for fumigation handlers shall not apply if the fumigation handlers wear National Institute for Occupational Safety and Health (NIOSH) certified respiratory protection specifically recommended for use in atmospheres containing less than 5 ppm iodomethane and the NIOSH certified respiratory protection is worn for the entire duration of the fumigation handling activities.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

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.

TM-42501

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed and Grass Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%
One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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 detaile. (If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300.
For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse.

This product contains a small amount of chloropicrin, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for person exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3). The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration in the working area during soil fumigation does not exceed 0.1 ppm for chloropicrin or 5 ppm for iodomethane.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

With all bulk and mini-bulk containers, TM-42501 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product beyond a pump must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices incorporating natural rubber or aluminum or magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
  - Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
  - To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system prior to soil injection for leaks or worn out equipment.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts
- Follow all local government instructions for posting of treated areas.

During Fumigation:

- Immediately cover treated areas with plastic tarpaulin for a minimum of 7 days when shank injection is less than 18 inches.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report spill to the National Response Center (800-424-8802) if the quantity exceeds 102 lbs (5 gallons of product).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: TM-42501 controls soil-borne pests including nematodes, insects, weed and grass seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, and turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using TM-42501 should be conducted only according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of soil pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry soil borne pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply TM-42501 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 8 inches below the soil surface. The treated ground must be sealed with a gas-tight plastic tarpaulin immediately after the chisel is in the ground with a mechanical tarp layer, except when applied by deep-shank broadcast applications, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarp should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold, or if TM-42501 is applied in combination with chloropicrin with a suitable surfactant.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used to bioassay to determine if TM-42501 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of TM-42501 (from the chloropicrin warning agent) is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	TM-42501 / A**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that rates below 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period disc or plow the soil to help aeration.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Use 1 injection site per 100 square feed (on a 10 feet by 10 feet grid pattern) with the injection in the center of the area to be treated. Planting or replanting of trees or vines may begin 14 days after the period of exposure.

CHEMIGATION

Application by Drip fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

TM-42501 may be applied through buried drip tape. Use of a trap seal is required for all applications of this product.

The dilution ratio for drip-line fumigation is 700-1,000 ppm. One gallon of TM-42501 in 350 gallons of water is equivalent to 1,000 ppm.

Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

Use drip components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted TM-42501 or more than 1,000 ppm TM-42501 in the undiluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly.

Apply TM-42501 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

Apply the TM-42501 when conditions throughout the treatment zone are near field capacity. The concentration of TM-42501 in the drip lines must be between 700 and 1,000 ppm. TM-42501 must be metered into the water.

<u>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</u>

TM-42501 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs then discontinue the application immediately and cover the soil with soil to absorb the material.

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

The pesticide injection pipeline must also contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or 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 shutdown.

The system must contain functional inter-locking 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.

Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing TM-42501 equipped with a metering valve and flow meter.

Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of TM-42501. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW TM-42501 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

Apply this product only through buried drip tape, not through any other type of irrigation system except as described in this labeling.

Do not apply this product through any system that has access to public water systems.

Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 8 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 8 and 15 inches. The injection depth to preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Forward-curved chisels shall be used with either:

- An air fan dilution system on the application tractor; or
- Closing shoes and compaction roller.

- Injection depth shall be at least 20 inches.
- Injection spacing shall be 66 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 56 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 400 pounds of iodomethane per acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 20 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.

  Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

The operator of the property to be treated shall submit a proposed worksite plan to the commissioner for evaluation at least 7 days prior to submitting a notice of intent. The proposed worksite plan shall include, but is not limited to, method of application to be used, acreage and identification of each application block to be treated, application rate to be used, description of the notification procedure to property operators pursuant to state notification requirements.

An application block shall not exceed 40 acres.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Fumigation equipment shall be operated to eliminate pesticide drip by clearing the fumigant from the injection device before it is lifted or removed from the soil.

Iodomethane Field Fumigation Notification Requirements

Notification to the Commissioner: The operator of the property to be treated shall assure that the county agricultural commissioner is notified (notice of intent) at least 48 hours prior to commencing fumigation. The notification shall include:

(1) Restricted Use Permit number;
(2) Name and address of permittee and applicator;
(3) Location of areas to be treated and name of farm operator;
(4) Crop or commodity, or if there is no crop or commodity the site to be treated;
(5) Approximate acres or other units;
(6) Method of application;
(7) Pesticide(s);
(8) Dilution, volume per acre or other units, and dosage;
(9) Pest(s) to be controlled;
(10) Date intended application is to commence;
(11) Hour the fumigation is intended to commence.

The fumigation shall not commence sooner than the intended starting time or later than 12 hours after the intended starting time specified on the notice of intent. If fumigation of an application block does not commence within the time specified, a new notice of intent must be submitted but no 48-hour waiting period is needed unless required by the agricultural commissioner. One notice of intent may be allowed for multiple application blocks to be fumigated sequentially. In lieu of submitting a separate notice of intent for each application block to be fumigated, the notice may include a multiple block schedule. The schedule must specify the date and time each application block is intended to be fumigated.

Notification to Property Operators.

The operator of the property to be treated shall assure that operators of the following properties within 300 feet from the perimeter of the outer buffer zone receive notification that a permit to use iodomethane near their property has been issued by the commissioner: properties that contain schools, residences, hospitals, convalescent homes, onsite employee housing, or other similar sites identified by the commissioner. Notification shall be in writing, or by other means approved by the commissioner. The operator of the property to be treated shall assure that notification is delivered at least seven (7) days prior to the submission of the notice of intent. The notification shall include the following information:

(1) The name of the chemical(s) to be applied;
(2) Name, business address, and business telephone number of the operator of the property to be treated;
(3) Name, business address, and business telephone number of the commissioner;
(4) The earliest and latest dates that the fumigation will start; and
(5) How to request subsequent notification of specific date and time of the fumigation.

The operator of the property to be treated shall assure that specific notification of the date and time of the start of the fumigation and anticipated expiration of buffer zones is provided to those persons who request specific fumigation information. This specific fumigation notification shall be provided at least 48 hours prior to starting the fumigation. If a request for specific notification is received after the submission of the notice of intent and before the fumigation begins, the specific fumigation notification shall be provided prior to starting the fumigation, but the 48-hour requirement shall not apply. If the fumigation of an application block does not commence within the time frame specified, then a new notification must be provided to those persons who requested the information, but the 48-hour requirement shall not apply unless required by the commissioner.

Fumigation Handling Activities

- Fumigation handling activities includes an employee involved in assisting with covering the tarpaulin at the end of the rows (shoveling); observing the overall operation, checking tarpaulin placement, changing cylinders (copiloting); operating application equipment (driving); and tarpaulin cutting and removal.

Employer Recordkeeping

- The employer shall maintain records for all employees involved in application, tarpaulin cutting, tarpaulin repair, and tarpaulin removal activities. The records shall identify the person, work activityies, dates, duration of handling, the product registration number, and the brand name of the iodomethane product handled. The employer shall maintain these use records at a central location for two years and the records shall be made available to the commissioner upon request.

Employee Protection Requirements for Fumigation Handlers.

- Employees involved primarily in shoveling shall work only at the ends of the application rows.
- Whenever iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent, is used for field soil fumigation, at least two trained employees shall be present during introduction of the fumigant and removal of tarpaulins, if used.

Limited Work Hours

- Multiple Task Employees. An employee may work in more than one work task and/or application method in a 24-hour period as long as the employee's total work hours do not exceed 8 total hours .

Tarpaulin Cutting and Removal Procedures

- Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).

- Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.

Tarpaulin Repair

- The operator of the property shall assure that a "tarpaulin repair response plan" is provided to the commissioner. The tarpaulin repair response plan shall identify the responsibilities of the licensed pest control business and/or the permittee with regard to tarpaulin damage detection and repair activities. At a minimum, the tarpaulin repair response plan shall indicate the parties responsible for the repair and incorporate the applicable elements listed below.

- The "tarpaulin repair response plan" approved by the commissioner in the worksite plan must state with specificity the situations when tarpaulin repair must be conducted. The situations should be based on, but not limited to, hazard to the public, residents or workers; proximity to occupied structures, size of the damaged area(s); timing of damage; feasibility of repair; and environmental factors such as wind speed and direction.

- The ambient air in the damaged areas of the tarpaulin to be repaired must be tested for iodomethane concentration by a certified applicator of the licensed pest control business that made the application, or by a certified applicator employee of the permittee, or certified applicator permittee, using a testing device as specified by the labeling. The certified applicator must wear self-contained breathing apparatus (SCBA) when conducting these tests.

- All repair work areas must test less than 5 ppm iodomethane before any employee without respiratory protection shall be allowed to enter and conduct tarpaulin repair. Such employee is limited to one (1) work hour in a 24-hour period.

Maximum Work Hours Exemption

- The maximum work hour restrictions stated above under Limited Work Hours and Tarpaulin Repair for fumigation handlers shall not apply if the fumigation handlers wear National Institute for Occupational Safety and Health (NIOSH) certified respiratory protection specifically recommended for use in atmospheres containing less than 5 ppm iodomethane and the NIOSH certified respiratory protection is worn for the entire duration of the fumigation handling activities.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

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.

TM-42501

Intended For Pre-Plant Fumigations Onto Fields Intended for Commercial Production of Strawberries, Tomatoes, Peppers, and Ornamental Flowers, Plants, and Bushes For The Control Of Soil-Borne Pests Including Nematodes, Insects, Weed and Grass Seeds and Diseases.

ACTIVE INGREDIENT:
Iodomethane..... 98.00%
OTHER INGREDIENT*:..... 2.00%
* Contains 2% Chloropicrin (warning odorant tear gas)
TOTAL:.....100.00%
One gallon weighs 18.9 pounds. Contains 18.5 pounds Iodomethane active ingredient per gallon.

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).

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOT LINE NUMBER	
For 24-hour chemical emergency (spill, leak, fire or accident) Assistance: Call CHEMTREC at 1-800-424-9300. For 24-hour emergency medical assistance: Call 1-800-228-5635 Ext. 174	
NOTE TO PHYSICIAN	
Probable mucosal damage may contraindicate the use of gastric lavage. Symptoms of overexposure may include irritation to eyes, skin, and respiratory system, shortness of breath, nausea, vomiting, dizziness, ataxia, slurred speech, drowsiness, blurred vision, staggering gait and mental imbalance, with probable recovery after period of no exposure. Treatment is symptomatic.	

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 66330 - XX
EPA Est. No.: XXX - XX

Net Volume: XXX
Lot Number: XXX

Arvesta Corporation
100 First St., Suite 1700
San Francisco, CA 94105

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash clothing before reuse.

This product contains a small amount of chloropicrin, which may be irritating to the upper respiratory tract, and even at low levels can cause painful irritation to the eyes, producing tearing. If these symptoms occur, leave the fumigation area immediately. Early symptoms of chloropicrin overexposure are tearing of the eyes, respiratory distress and vomiting.

AIR CONCENTRATION LEVEL

The acceptable air concentration level for person exposed to chloropicrin is 0.1 ppm (0.7 mg/m^3). The acceptable air concentration level for persons exposed to iodomethane is 5 ppm (20 mg/m^3). The air concentration level is measured by a direct reading device, such as a Kitigawa or Sensidyne, certified for iodomethane.

It has been determined that when this product is used according to the Directions for Use, the typical air concentration in the working area during soil fumigation does not exceed 0.1 ppm for chloropicrin or 5 ppm for iodomethane.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Loose fitting or well ventilated long-sleeved shirt and long pants.
- Shoes plus socks
- No respirator is required if the air concentration of iodomethane in the working area is less than 5 ppm.
- A respirator is required if the acceptable air concentration of 5 ppm for iodomethane is exceeded at any time. The respirator must be approved for use with iodomethane such as 1) a supplied air respirator (MSHA/NIOSH approval number TC-19C) or 2) a self-contained breathing apparatus (SCBA or MSHA/NIOSH approval number prefix TC-13F).
- When handling the liquid product (e.g. the mixer/loader), full face shield or safety glasses with brow, temple and side protection is required. Do NOT wear goggles.

Under normal soil fumigation conditions, the air concentration level of iodomethane in the working area will not generally exceed 5 ppm as a time-weighted average and, as a result, no respiratory protection would be required. However, there is the possibility of a spill or leak during soil fumigation. Therefore, a respirator of a type specified above must be available and will be required for entry into an affected area in the event of a leak or spill.

ENGINEERING CONTROL REQUIREMENTS

With all bulk and mini-bulk containers, TM-42501 must be transferred through connecting hoses, pipes, and/or couplings sufficiently tight to prevent workers or other persons from coming in contact with the liquid.

- All hoses, piping, and tanks used in connection with this product shall be of type appropriate for use under the pressure and vacuum conditions to be encountered.
- External sight gauges shall be equipped with valves so that pipes to sight gauge can be shut off in case of breakage or leakage.
- The mechanical transfer system must be adequate to make necessary measurements of the pesticide being used.
- Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent leakage of product when the transfer is stopped and hose is removed or disconnected. A dry coupler that will minimize pesticide leakage must be installed at the disconnect point.
- The pressure in hoses used to move the product beyond a pump must not exceed the manufacturer's maximum pressure specifications.

USER SAFETY REQUIREMENTS

- Do not wear jewelry, gloves, goggles, tight clothing or any rubber protective clothing/boots that can trap iodomethane or chloropicrin vapors against your skin. Iodomethane and chloropicrin vapors can be trapped inside clothing and cause skin injury.
- Remove all clothing that comes in contact with liquid material at once.
- Aerate all affected clothing thoroughly prior to washing with hot water and detergent
- Discard any clothing or absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.
- Follow PPE manufacturer's instructions for cleaning / maintaining protective eyewear and respirators.

USER SAFETY RECOMMENDATIONS

User 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 or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat, open flames, or sparking electrical equipment. Do not use application devices incorporating natural rubber or aluminum or magnesium or their alloys.

STORAGE, HANDLING AND DISPOSAL

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

Storage: Store in a dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area.

Handling: Product cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device that the cylinder can be firmly secured to.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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, or follow the label instructions for return of partially empty containers.

Return of Containers: This pesticide container is the property of the manufacturer or distributor where it was purchased and should be returned promptly by collect freight. Do not ship containers without safety caps or valve protection bonnets. When a cylinder is partially full and there is no further requirement for the product, contact the manufacturer or distributor for return instructions. Containers should never be refilled by the consumer or used for any other product or purpose.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 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 on this label about personal protective equipment (PPE), 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:
Outdoor Soil Fumigation: Entry (including early entry that would otherwise be permitted under the WPS) by any person - other than a correctly trained and equipped handler who is performing a task that is permitted by this labeling – is PROHIBITED from the start of the application until 36 hours after application. If tarps are used for the application, non-handler entry is prohibited while tarps are being removed.

Notification:
Notify all workers of the fumigation verbally and by posting warning signs at entrances to treated areas. The sign must bear the skull and crossbones symbol and state:

(1) "DANGER/PELIGRO"
(2) "Areas under fumigation, DO NOT ENTER/NO ENTRE"
(3) Iodomethane Fumigant In Use
(4) Date and time of fumigation
(5) Name of this product, and
(6) Name, address, and telephone number of the applicator.

Post the fumigant warning sign instead of the WPS sign for this application, but follow all WPS requirements pertaining to location, legibility, size and timing of posting and removal. Signs should be posted until tarps are removed.

PPE For Reentry During the Entry-Restricted Period:
PPE for entry is limited to inspection and repair of tarping material allowed by this labeling. The PPE required for these tasks are listed in the "Personal Protective Equipment" section of this label's PRECAUTIONARY STATEMENTS.

Precautions for Usage Prior to, During and After Soil Fumigation:

Prior to fumigation:

- Post all treated areas with warning signs:
  - The applicator (or supervisor of the application) must placard all entrances to the fumigated area with signs bearing the following:
    - Skull and crossbones symbol.
    - "DANGER/PELIGRO".
    - "Area under fumigation. DO NOT ENTER/NO ENTRE."
    - "Iodomethane fumigant in use."
    - The date and time of fumigation,
    - Name of this product, and
    - The name, address, and telephone number of the applicator.
  - Do not allow entry by unprotected persons into the fumigated area until the signs are removed. Such signs must only be removed when the air concentration level of iodomethane is measured to be less than 5 ppm or no sooner than 36 hours following application. Signs must remain legible during entire posting period.
  - To determine whether aeration is complete, each fumigated site should be monitored and shown to contain less than 5 ppm iodomethane in the air space around the treated site.
- Comply with all local ordinances and regulations. Obtain an application permit and file necessary site plans as designated by the local regulatory agency.
- Do not apply this product when there is an atmospheric inversion.
- Never fumigate alone. A minimum of two trained people must be present during handling and application of soil fumigants.
- Drivers of application equipment are responsible for providing information to all other workers of precautions and procedures in soil fumigation.
- Additional instructions must be made available to workers in the mechanical operation of the tractor and how to safely work with the operator while fumigating.
- Always handle this product in the open, with all workers standing "upwind" from the container and where there is adequate ventilation.
- Check the fumigation system prior to soil injection for leaks or worn out equipment.
- When fumigating from a tractor, it is required that 5 gallons of water be carried on the tractor and readily available for rinsing and cleaning purposes. An additional 5 gallons of water must be available in the service truck. This water must be potable and in containers marked "Decontamination water not to be used for drinking."
- Soil preparation of the treatment area should be reasonably free of trash and in good tilth prior to soil treatment.
- Avoid applying to wet or cold soils (<55°F at a depth of 8 inches).
- Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts
- Follow all local government instructions for posting of treated areas.

During Fumigation:

- Immediately cover treated areas with plastic tarpaulin for a minimum of 7 days when shank injection is less than 18 inches.
- Allow time for complete voiding of material in the buried shanks following closure of the shutoff valve and before removing shanks from the soil.
- In the event that trash is pulled up with the shanks after completing a treatment pass, the trash must be covered with plastic film before making the next pass through the field.
- Do not change cylinders when the fumigant system is under pressure. Change cylinders with all cylinder valves in the off position.

- Do not open cylinders when structures or people are located downwind from the treatment area in sufficient distance where exposures could exceed the allowable limit.

Following Fumigation:

- Keep all pets, livestock and other domestic animals away from the treated areas until after the tarpaulin has been removed.
- Remove the plastic tarps with a minimum of two trained people present during the operation.

Spill and Leak Procedures:

- Cease all operations if any leak develops in the fumigation system.
- Evacuate all people from the area to a safe distance upwind.
- Wear all Personal Protective Equipment including respirators and/or SCBA for entry into the area to correct the problem.
- Approach the area from the upwind side.
- Contaminated soil, water and other cleanup debris may be hazardous waste. Report spill to the National Response Center (800-424-8802) if the quantity exceeds 102 lbs (5 gallons of product).

General Information and Instructions

This fumigant is a highly hazardous material. It is a restricted use pesticide that may only be used by individuals trained and certified in its proper use. Before using, read the entire label and follow all use directions and precautions. All persons working with this fumigant must be knowledgeable about the hazards and trained in the use of required respirator equipment and detector devices, emergency procedures and proper use of the fumigant.

SOIL BORNE PESTS CONTROLLED: TM-42501 controls soil-borne pests including nematodes, insects, weed and grass seeds, and diseases such as those caused by *Phytophthora, Pythium, Fusarium, Verticillium and Rhizoctonia.* It is to be applied as a pre-plant soil fumigation to fields intended for the commercial production of strawberries, tomatoes, peppers, ornamentals, and turf, tree and vine replanting, and to soils intended for strawberry nursery use.

Soil Fumigation using TM-42501 should be conducted only according to directions and conditions of use described in this label. Application of this product will control only those pests present in the soil at time of soil treatment. It is not to be used as a preventative treatment for pests that may be introduced after the fumigant has been applied and/or tarps removed. To avoid the re-introduction of soil pests (nematodes, weed seed and disease), do not use irrigation water, transplants or equipment that could carry soil borne pests into the planting area. Avoid moving infested soil back into the treated area through cultivation or other means.

SOIL PREPARATION: Prior to the application of soil fumigants the ground must be sufficiently moist to imbibe seeds for germination. The soil should be worked to the depth that is desirable for the fumigant to penetrate. Plant refuse should be worked into the soil and allowed enough time to decompose prior to treatment with soil fumigants.

FIELD FUMIGATION: Apply TM-42501 by either shank fumigation or through drip fumigation. For shank fumigation, use a tractor mounted chisels spaced no more that 12 inches apart and at a depth of no less than 8 inches below the soil surface. The treated ground must be sealed with a gas-tight plastic tarpaulin immediately after the chisel is in the ground with a mechanical tarp layer, except when applied by deep-shank broadcast applications, as detailed below under Iodomethane Pre-Plant Field Fumigation Methods. Tarp should remain on the soil for at least 5 days prior to removal and planting.

PLANTING INTERVAL: Do not disturb treated soil for at least 7 days after application of the fumigant. A longer period before planting may be necessary if the soil is wet or cold, or if TM-42501 is applied in combination with chloropicrin with a suitable surfactant.

To prevent phytotoxicity, allow the fumigant to dissipate completely before planting a crop. Seed may be used to bioassay to determine if TM-42501 is present in the soil at concentrations sufficient to cause plant injury. DO NOT PLANT if the odor of TM-42501 (from the chloropicrin warning agent) is detectable.

Application by Broadcast or Flat Fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below.

Application by Bed Shank fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Soil Fumigation Table below. Row or bed applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

PRE-PLANT SOIL FUMIGATION TABLE

CROP	TM-42501 / A**	Time Between Application and Planting***
Strawberry Tomato Pepper	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7-14 days
Strawberry Nursery*	175 lbs / A + 175 lbs Chloropicrin or 9.2 gal + 175 lbs	Minimum 7 –14 days
Turf Ornamentals (flowers grown for cutting, bulbs, nursery plants)	100-235 lbs/A or 5.2 – 12.4 gal/A	Minimum 7 –14 days
Tree re-plants Vine re-plants	150 – 235 lbs/A or 7.9 gal – 12.4 gal/A	Minimum 7 - 14days

* Minimum rates for both iodomethane and chloropicrin applied in combination to maintain Phytosanitary Certification.

** Use higher rates for Nutsedge and Malva control. It is recommended that rates below 150 lbs or 7.9 gal/A of Iodomethane be applied with a minimum of 120 lbs of chloropicrin.

*** Tarps are not to be removed for at least 5 days following application. Use of iodomethane in combination with chloropicrin rates higher than 100 lbs/A could result in the need for planting interval longer than 7 days. If odors of fumigant persist beyond the two-week period disc or plow the soil to help aeration.

NOTE: Fumigation of highly acid soils or those high in organic matter can cause ammonia toxicity and or elevated levels of soluble salts in the soil. Fertilize as indicated from soil analysis following fumigation and avoid those fertilizers using ammonium salts

FOR TREE AND VINE REPLANT – DEEP INJECTION AUGER-PROBE TREATMENT: Use 1 pound iodomethane per injection site in light soils (2 pounds in fine-textured soils) to a depth of 36 inches or more below the soil surface. Use 1 injection site per 100 square feed (on a 10 feet by 10 feet grid pattern) with the injection in the center of the area to be treated. Planting or replanting of trees or vines may begin 14 days after the period of exposure.

CHEMIGATION

Application by Drip fumigation: Use dosage rates and planting interval times as indicated in the Pre-Plant Fumigation Table (above). Drip applications may be made at the broadcast rates but the amount will be proportionately less per acre depending upon the row spacing and width of treatment in the row or bed.

TM-42501 may be applied through buried drip tape. Use of a trap seal is required for all applications of this product.

The dilution ratio for drip-line fumigation is 700-1,000 ppm. One gallon of TM-42501 in 350 gallons of water is equivalent to 1,000 ppm.

Soil must be in good tilth and condition. Free of clods and un-decomposed soil material.

Use drip components made of brass, stainless steel, copper, nickel, polypropylene, polyethylene, Teflon, viton, rigid PVC, and EPDM. Rigid PVC should not be exposed to undiluted TM-42501 or more than 1,000 ppm TM-42501 in the undiluted form. Do not use aluminum, vinyl, plastic (other than polypropylene or polyethylene), zinc or alloys.

In very sandy soils it may be necessary to apply a pre-irrigation amount of water to wet the bed and enhance movement of the material through the soil profile more evenly.

Apply TM-42501 with a suitable surfactant to aid in the solubility of the compound in irrigation water when applied alone or in combination with chloropicrin.

Apply the TM-42501 when conditions throughout the treatment zone are near field capacity. The concentration of TM-42501 in the drip lines must be between 700 and 1,000 ppm. TM-42501 must be metered into the water.

<u>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</u>

TM-42501 must be monitored as it enters the irrigation system and must pass through a static mixer, course filter, or fine strainer to insure proper agitation before it is distributed through the irrigation system. Do not allow treatment solution to accumulate on the soil surface. Do not allow treatment solution to pond, puddle or run-off. If run-off occurs then discontinue the application immediately and cover the soil with soil to absorb the material.

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent back flow contamination of the water source.

The pesticide injection pipeline must also contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the chemical supply or 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 shutdown.

The system must contain functional inter-locking 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.

Pump types must be suitable for the injection of corrosive materials and capable of being fitted with a system interlock. Injection systems must use a metering pump, such as a positive displacement or diaphram pump, venturi system or a pressure safe cylinder containing TM-42501 equipped with a metering valve and flow meter.

Following application, continue to apply irrigation water to rinse the irrigation system of any mixture of TM-42501. Make sure any rigid dead end or low spots are drained or flushed completely. DO NOT ALLOW TM-42501 TO REMAIN IN THE IRRIGATION SYSTEM. Leave the soil undisturbed for at least 7 days after fumigation. Then proceed with agricultural practices normal for crop management activities.

Apply this product only through buried drip tape, not through any other type of irrigation system except as described in this labeling.

Do not apply this product through any system that has access to public water systems.

Only a person knowledgeable of the chemigation system and responsible for its operation, or persons under their direct supervision shall operate the system and make the necessary adjustments should the need arise.

IODOMETHANE PRE-PLANT FIELD FUMIGATION METHODS.

Fumigations must be performed in accordance with the following restrictions, according to the application technique being used:

Tarpaulin/Shallow/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Application shall be made using either:
  - An application tractor equipped with an air fan dilution system, and with a plow consisting of horizontal v-shaped blades mounted by a vertical arm to the tool bar. The fumigant shall be injected laterally beneath the soil surface; or
  - Rearward-curved (swept-back) chisels, closing shoes, and compaction roller shall be used.
- Injection depth shall be between 8 and 15 inches.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until a minimum of 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut and removed as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 5 days.

Tarpaulin/Shallow/Bed

- Application rate shall not exceed 235 pounds of iodomethane per acre of coverage.
- Rearward-curved (swept-back) chisels shall be used with either:
  - Closing shoes and compaction roller. The closing shoes shall cover the chisel marks with soil just ahead of the compaction roller, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Bed shaper. The chisels shall be placed with the injection point under the bed shaper, and the tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor; or
  - Combination bed former and bed shaper. The chisels shall be placed between the bed former and the bed shaper. The tractor with the tarpaulin-laying equipment shall immediately follow the application tractor.
- Injection depth shall be between 8 and 15 inches. The injection depth to preformed beds must not be below the bed furrow.
- Injection spacing shall be 12 inches or less.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block.
- If tarpaulins are removed before planting, tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed. The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 6 days.
- If tarpaulins are not to be removed before planting, the application block restricted entry interval shall either:
  - consist of the 5-day period described above plus an additional 48 hours after holes have been cut for planting, or
  - be at least 14 days. If this option is chosen, the iodomethane air concentration underneath the tarpaulin must test less than 5 parts per million before planting begins.

Tarpaulin/Deep/Broadcast

- Application rate shall not exceed 235 pounds of iodomethane per acre.
- Forward-curved chisels shall be used with either:

- An air fan dilution system on the application tractor; or
- Closing shoes and compaction roller.

- Injection depth shall be at least 20 inches.
- Injection spacing shall be 66 inches or less.
- The tarpaulin shall be laid down simultaneously (with fumigant injection) by tarpaulin-laying equipment mounted on the application tractor.
- The tarpaulin shall not be cut until at least 5 days (120 hours) following completion of injection to the application block. The tarpaulin shall be cut as follows:
  - Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.
  - Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).
  - Tarpaulin removal shall begin no sooner than 24 hours after tarpaulin cutting has been completed.
- The application block restricted entry interval shall end at completion of tarpaulin removal, and shall be at least 56 days.

Nontarpaulin/Deep/Broadcast

- Application rate shall not exceed 400 pounds of iodomethane per acre.
- Forward-curved chisel shall be used with:
  - An application tractor equipped with an air fan dilution system and the injection depth shall be at least 20 inches; or
  - Closing shoes and compaction roller and the injection depth shall be at least 24 inches.

  Injection spacing shall be 68 inches or less.
- The soil shall not be disturbed for at least 4 days (96 hours) following completion of injection to the application block.
- The application block restricted entry interval shall be 4 days.

FOR USE IN CALIFORNIA ONLY

Field Fumigation: This pertains to field soil fumigation use requirements using iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent. For California purposes field soil fumigation does not apply to tree holes, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses.

The operator of the property to be treated shall submit a proposed worksite plan to the commissioner for evaluation at least 7 days prior to submitting a notice of intent. The proposed worksite plan shall include, but is not limited to, method of application to be used, acreage and identification of each application block to be treated, application rate to be used, description of the notification procedure to property operators pursuant to state notification requirements.

An application block shall not exceed 40 acres.

Tarpaulins shall have a permeability factor between 5 and 8 milliliters iodomethane per hour, per square meter, per 1,000 parts per million of iodomethane under the tarpaulin at 30 degrees Celsius, and be approved by the state pesticide officials.

Tarpaulins shall be buried under at least four inches of firmly packed soil at the end of the rows. The tarpaulins shall remain in place for the time specified for the fumigation method.

Fumigation equipment shall be operated to eliminate pesticide drip by clearing the fumigant from the injection device before it is lifted or removed from the soil.

Iodomethane Field Fumigation Notification Requirements

Notification to the Commissioner: The operator of the property to be treated shall assure that the county agricultural commissioner is notified (notice of intent) at least 48 hours prior to commencing fumigation. The notification shall include:

(1) Restricted Use Permit number;
(2) Name and address of permittee and applicator;
(3) Location of areas to be treated and name of farm operator;
(4) Crop or commodity, or if there is no crop or commodity the site to be treated;
(5) Approximate acres or other units;
(6) Method of application;
(7) Pesticide(s);
(8) Dilution, volume per acre or other units, and dosage;
(9) Pest(s) to be controlled;
(10) Date intended application is to commence;
(11) Hour the fumigation is intended to commence.

The fumigation shall not commence sooner than the intended starting time or later than 12 hours after the intended starting time specified on the notice of intent. If fumigation of an application block does not commence within the time specified, a new notice of intent must be submitted but no 48-hour waiting period is needed unless required by the agricultural commissioner. One notice of intent may be allowed for multiple application blocks to be fumigated sequentially. In lieu of submitting a separate notice of intent for each application block to be fumigated, the notice may include a multiple block schedule. The schedule must specify the date and time each application block is intended to be fumigated.

Notification to Property Operators.

The operator of the property to be treated shall assure that operators of the following properties within 300 feet from the perimeter of the outer buffer zone receive notification that a permit to use iodomethane near their property has been issued by the commissioner: properties that contain schools, residences, hospitals, convalescent homes, onsite employee housing, or other similar sites identified by the commissioner. Notification shall be in writing, or by other means approved by the commissioner. The operator of the property to be treated shall assure that notification is delivered at least seven (7) days prior to the submission of the notice of intent. The notification shall include the following information:

(1) The name of the chemical(s) to be applied;
(2) Name, business address, and business telephone number of the operator of the property to be treated;
(3) Name, business address, and business telephone number of the commissioner;
(4) The earliest and latest dates that the fumigation will start; and
(5) How to request subsequent notification of specific date and time of the fumigation.

The operator of the property to be treated shall assure that specific notification of the date and time of the start of the fumigation and anticipated expiration of buffer zones is provided to those persons who request specific fumigation information. This specific fumigation notification shall be provided at least 48 hours prior to starting the fumigation. If a request for specific notification is received after the submission of the notice of intent and before the fumigation begins, the specific fumigation notification shall be provided prior to starting the fumigation, but the 48-hour requirement shall not apply. If the fumigation of an application block does not commence within the time frame specified, then a new notification must be provided to those persons who requested the information, but the 48-hour requirement shall not apply unless required by the commissioner.

Fumigation Handling Activities

- Fumigation handling activities includes an employee involved in assisting with covering the tarpaulin at the end of the rows (shoveling); observing the overall operation, checking tarpaulin placement, changing cylinders (copiloting); operating application equipment (driving); and tarpaulin cutting and removal.

Employer Recordkeeping

- The employer shall maintain records for all employees involved in application, tarpaulin cutting, tarpaulin repair, and tarpaulin removal activities. The records shall identify the person, work activityies, dates, duration of handling, the product registration number, and the brand name of the iodomethane product handled. The employer shall maintain these use records at a central location for two years and the records shall be made available to the commissioner upon request.

Employee Protection Requirements for Fumigation Handlers.

- Employees involved primarily in shoveling shall work only at the ends of the application rows.
- Whenever iodomethane, singly or in combination with chloropicrin or any other pesticide or warning agent, is used for field soil fumigation, at least two trained employees shall be present during introduction of the fumigant and removal of tarpaulins, if used.

Limited Work Hours

- Multiple Task Employees. An employee may work in more than one work task and/or application method in a 24-hour period as long as the employee's total work hours do not exceed 8 total hours .

Tarpaulin Cutting and Removal Procedures

- Tarpaulin cutting and tarpaulin removal shall be discontinued if the presence of gas is readily evident (onset of eye irritation or odor).

- Tarpaulins used for broadcast fumigations shall be cut using only mechanical methods (all-terrain vehicle or a tractor with a cutting wheel). Each tarpaulin panel used for broadcast fumigations shall be cut lengthwise.

Tarpaulin Repair

- The operator of the property shall assure that a "tarpaulin repair response plan" is provided to the commissioner. The tarpaulin repair response plan shall identify the responsibilities of the licensed pest control business and/or the permittee with regard to tarpaulin damage detection and repair activities. At a minimum, the tarpaulin repair response plan shall indicate the parties responsible for the repair and incorporate the applicable elements listed below.

- The "tarpaulin repair response plan" approved by the commissioner in the worksite plan must state with specificity the situations when tarpaulin repair must be conducted. The situations should be based on, but not limited to, hazard to the public, residents or workers; proximity to occupied structures, size of the damaged area(s); timing of damage; feasibility of repair; and environmental factors such as wind speed and direction.

- The ambient air in the damaged areas of the tarpaulin to be repaired must be tested for iodomethane concentration by a certified applicator of the licensed pest control business that made the application, or by a certified applicator employee of the permittee, or certified applicator permittee, using a testing device as specified by the labeling. The certified applicator must wear self-contained breathing apparatus (SCBA) when conducting these tests.

- All repair work areas must test less than 5 ppm iodomethane before any employee without respiratory protection shall be allowed to enter and conduct tarpaulin repair. Such employee is limited to one (1) work hour in a 24-hour period.

Maximum Work Hours Exemption

- The maximum work hour restrictions stated above under Limited Work Hours and Tarpaulin Repair for fumigation handlers shall not apply if the fumigation handlers wear National Institute for Occupational Safety and Health (NIOSH) certified respiratory protection specifically recommended for use in atmospheres containing less than 5 ppm iodomethane and the NIOSH certified respiratory protection is worn for the entire duration of the fumigation handling activities.

CONDITIONS OF SALE

1. Arvesta Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the Directions for Use under normal conditions of use.

2. This warranty does not extend to the use of this product contrary to the label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Arvesta. ARVESTA DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLLUSIVE REMEDY SHALL BE LIMITED OT THE REFUND OF THE PURCHASE PRICE. ARVESTA DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.

3. Critical and unforeseeable factors beyond Arvesta's control prevent Arvesta from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants and crops to which the product is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for the use stated on the label and even though label directions are followed. Except as stated in 1 above, Buyer and User acknowledge and assume all risks and liabilities resulting from handling, storage, and use of this product.

Pages 186-187 Confidential Statement of Formula may be entitled to confidential treatment