81824-1 07/15/2005 1/22

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505C)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
X Registration
___ Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
81824-1	JUL 15 2005

Term of Issuance: Conditional

Name of Pesticide Product: ENS-004

Name and Address of Registrant (include ZIP Code):

Ensystex II, Inc.
2709 Breezewood Sve.
Fayetteville, NC. 28303

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/ reregistration of your product when the Agency requires all registrants of similar products to submit such data.

2. Make the following label change before you release the product for shipment:

   Revise the EPA Registration Number to read "EPA Reg. No. "81824-1".

3. Maintain the stewardship plan, "Ensystex II Inc., Stewardship Program Plan for ENS-004" as outlined in your letter dated July 15, 2005.

continued .....

Signature of Approving Official:

Daniel C. Kenny, Product Manager (01)
Insecticide-Rodenticide Branch
Registration Division (7505C)

Date:

EPA Form 8570-6

4. Submit one copy of the revised final printed label for the record before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

Daniel C. Kenny
Product Manager (01)
Insecticide-Rodenticide Branch
Registration Division (7505C)

Enclosure

RESTRICTED USE PESTICIDE DUE TO INHALATION TOXICITY

For 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.

ENS-004

Use to control existing infestations of all life stages of pests such as drywood termites, beetles (old house borer, powderpost, deathwatch), bedbugs, clothes moths, German cockroaches and rodents (rats, mice). Use to control existing infestations of non-egg life stages only of insects such as dermestid beetles (furniture carpet, carpet) and cockroaches (oriental, American, brown-banded). Use to control existing infestations of above ground Formosan termites.

For use in disinfesting structures such as dwellings, buildings, warehouses, mobile homes. For use in disinfesting vehicles such as automobiles, buses, recreational vehicles, surface ships, shipping containers, rail cars, (except aircraft). For use in disinfesting materials (construction) and furnishings (household effects).

When using, observe local, state and federal rules and regulations concerning the use of warning agents, detection devices, respiratory protection, protective clothing, security requirements and posting of warning signs.

ACTIVE INGREDIENT	
Sulfuryl fluoride	99.3%
OTHER INGREDIENTS	0.7%
TOTAL	100.0%

ACCEPTED

JUL 15 2005

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 81824-1

KEEP OUT OF REACH OF CHILDREN

DANGER  **POISON** [Editor's Note: the word POISON must appear in red]

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.)

In case of emergency endangering health or the environment involving ENS-004, call 1-800-424-9300. If you wish to obtain additional product information, visit our website at www.ensystexll.com.

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FIRST AID	
In all cases of overexposure, when symptoms such as nausea, difficulty in breathing, abdominal pain, slowing of movements and speech or numbness in extremities are exhibited, get medical attention immediately. Take affected person to a doctor or emergency treatment facility.	
If inhaled:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
If liquid is on skin or on clothing:	Immediately apply water to contaminated area of clothing before removing. Once area has thawed, remove contaminated clothing, shoes and other items covering skin. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If liquid is 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. Liquid fumigant in the eye may cause damage due to refrigeration or freezing. Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also call 1-800-424-9300 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
ENS-004 is a gas that has no warning properties such as odor, color or eye irritation. (Chloropicrin, which is used as a warning agent in conjunction with ENS-004, is the active ingredient in tear gas and will cause tearing.) Early symptoms of exposure to ENS-004 are respiratory irritation and central nervous system depression. Excitation may follow. Slowed movement, reduced awareness and slow or garbled speech may be noted. Prolonged exposure can produce lung irritation, pulmonary edema, nausea and abdominal pain. Repeated exposure to high concentrations can result in significant lung and kidney damage. Single exposures at high concentrations have resulted in death. Treat symptomatically.	

See the Side Panel for Precautionary Statements

READ THIS ENTIRE LABEL BEFORE USING THIS PRODUCT. ALL PARTS OF THIS LABEL ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS PRODUCT. AS NECESSARY, CONSULT WITH THE LEAD STATE PESTICIDE REGULATORY AGENCY TO DETERMINE OR REMAIN

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Front Panel

INFORMED OF THE CURRENT REGULATORY STATUS, REQUIREMENTS AND RESTRICTIONS CONCERNING THE USE OF THIS PRODUCT FOR FUMIGATION IN THE STATE OF INTENDED USE. CALL ENSYSTEX II, INC. (PHONE 1-888-398-3772) IF YOU HAVE ANY QUESTIONS OR DO NOT UNDERSTAND ANY PART OF THIS LABEL.

Notice: Before buying or using this product, read "Terms and Conditions of Use", "Warranty Disclaimer", "Inherent Risks of Use" and "Limitation of Remedies" sections of this label. If terms are unacceptable, return at once unopened.

Ensystex II, Inc. Fayetteville, NC 28303 USA **EPA Reg. No. 81824-R**
NET CONTENTS: XXX LBS. **EPA Est. No.**

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER  **POISON** [Editor's Note: the word POISON must appear in red]

PELIGRO

Extremely Hazardous Liquid And Vapor Under Pressure • Fatal If Inhaled • Causes Irreversible Eye Damage • Contact with Liquid Causes Freeze Burns Of Exposed Skin

Do not get in eyes, on skin or on clothing. ENS-004 is odorless and colorless. Exposure to toxic levels may occur without warning or detection by the user or exposed persons.

Protective Clothing

Wear splash resistant goggles or full face shield for eye protection during introduction of fumigant or when working around any lines containing fumigant under pressure. Do not wear gloves or rubber boots. Do not reuse clothing or shoes that have become contaminated with liquid fumigant until they have been thoroughly aerated and cleaned.

Respiratory Protection

Use of an approved Respiratory Protection Device (see *Respiratory Protection Devices*) is required to enter or remain within a fumigated space anytime the concentration of ENS-004 within that space is known to exceed 1 ppm or is unknown, such as at the start of the aeration process.

If the concentration of ENS-004 within the fumigated space, as measured by an approved and properly calibrated Low Fumigant Level Detection Device (see *Low Fumigant Level Detection Devices*), does not exceed 1 ppm, no respiratory protection is required to enter or remain within the fumigated space. Because the approved detection devices give immediate readings of the levels of fumigant present, respiratory protection is not required when these devices are in use after the initial 1 hour aeration procedure is completed. However, whenever a fumigant level reading exceeding 1 ppm is obtained within a fumigated space, anyone within the fumigated space not using an approved Respiratory Protection Device must immediately leave the fumigated space and remain outside the fumigated space until fumigant level readings of 1 ppm or greater are no longer obtained within the fumigated space. The concentration of ENS-004 must be monitored in the breathing zones. The fumigated space must remain posted until cleared for re-occupancy.

Respiratory Protection Devices

Use a NIOSH or MSHA approved positive pressure Self-Contained Breathing Apparatus (SCBA, not SCUBA) or combination air supplied/SCBA respirator, such as those manufactured by Ranger, Survivair, Scott, or MSA, when respiratory protection is required (see *Respiratory Protection*). Required

Respiratory Protection Devices must be on site and operational before an application of ENS-004 begins.

Before using any make or brand of Respiratory Protection Device, learn how to use it correctly. Determine that it is in good working order, that it has an air supply sufficient to supply air for the period of time the device will be in use, that it fits properly and that it provides an adequate seal around the face.

Low Fumigant Level Detection Devices

As part of the aeration/clearance process or cylinder leak procedure, an approved Low Fumigant Level Detection Device capable of confirming a concentration of ENS-004 of 1 ppm or less, such as the SPECTROS SF-ExplorIR, INTERSCAN or MIRAN gas analyzers, should be used to sample the air within the breathing zones of the fumigated space to confirm the level of fumigant, if any, that is still present. The INTERSCAN gas analyzer must be calibrated within one month prior to its use as a Low Fumigant Level Detection Device. All other approved Low Fumigant Level Detection Devices must be calibrated according to their manufacturer's recommendations.

ENVIRONMENTAL HAZARDS

Sulfuryl fluoride is highly toxic to fish and wildlife. Exposure to non-target organisms should be avoided.

PHYSICAL AND CHEMICAL HAZARDS

Sulfuryl fluoride is a colorless, odorless, non-irritating toxic gas. ENS-004 cylinders are under pressure and must not be stored near heat or open flame. Exposure of the cylinder(s) to temperatures above 158°F will cause a fusible plug in the valve body to melt and the contents to be released into the atmosphere. Under high heat conditions (temperatures above 752°F), ENS-004 can decompose into sulfur dioxide (SO_2), hydrofluoric acid (HF) and other decomposition products. Hydrofluoric acid is highly reactive and can corrode or damage many materials including metals, glass, ceramic finishes, fabrics, etc.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not ship or store with food, feed, drugs or clothing.

Pesticide Storage: Store in a dry, cool, well ventilated area under lock and key. Post as a pesticide storage area. Store cylinders upright, secured to a rack or wall to prevent tipping. Storage of ENS-004 in occupied buildings and spaces is prohibited unless storage area(s) is equipped with a permanently mounted and properly maintained and functioning sulfuryl fluoride monitoring device designed to alert occupants of the building to the presence of sulfuryl fluoride in the air of the storage area at a level greater than 1 ppm.

Cylinder Return: When cylinder is empty, close valve, screw safety cap onto valve outlet and replace protection bonnet. Follow registrant's instructions for return of empty or partially empty cylinders. Only the registrant is authorized to

refill cylinders. Do not use cylinders for any other purpose. Always follow the proper cylinder handling directions.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide is a violation of Federal law. If the wastes cannot be disposed of by use according to label instructions, consult your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Carefully read and follow all Directions For Use.

ENS-004 is a highly hazardous material and should be used only by individuals trained in its proper use and knowledgeable of its possible hazards. All local, state and federal rules and regulations regarding security requirements, reentry, aeration, clearance, posting of warning signs and use of detection devices, warning agents and respiratory protection equipment must be observed when fumigating with ENS-004.

Do not apply this product without first computing the dose to be applied with the Fumicalc software program. The Fumicalc program, which is available from Ensystex II, Inc., is part of the labeling for this product and must be used to calculate any dose of ENS-004.

Two persons trained in the use of ENS-004, at least one of whom is an applicator licensed/certified to perform fumigations by the state in which the application is being performed, must be present on site during any release of ENS-004, during any reentry into the fumigated space within the exposure period and during initiation of the initial aeration procedure.

If fumigating for insect pests, do not apply ENS-004 when the lowest temperature at a site of pest activity within the fumigated space is below 40°F. Generally, the lowest temperature in a slab structure is found at the slab foundation and the lowest temperature in a crawl space structure is found just below the surface of the crawl space soil. No temperature restriction applies when fumigating for rodents.

Remove edible items, including food and feed, from the structure before the fumigation if they cannot be protected against exposure to ENS-004 (see *Preparation for Fumigation*). Chloropicrin must be used to warn of the presence of fumigant within the fumigated space (see *Warning Agent*).

Handling and Transportation of Cylinders

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 or move cylinders. Transport cylinders using a hand truck or fork truck to which the cylinder can be firmly secured. Do not transport any cylinders in closed vehicles where they occupy the same common airspace as personnel. Transport cylinders securely and only in an upright position.

ENS-004 cylinders should never be transported by aircraft under any circumstances.

Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet as soon as practical after use.

The cylinder valve is designed to retain a small amount of fumigant within the cylinder when the pressure within the cylinder falls below a certain pressure. This feature prevents the introduction of unauthorized substances into the cylinder when it is empty. This is facilitated by a spring loaded residual pressure feature incorporated into the valve that cuts off gas flow when the pressure of the remaining gas falls below a certain low level. Do not attempt to defeat this mechanism as serious injury could result.

Cylinder Leak Procedure

Evacuate immediate area of leak. Use an approved Respiratory Protection Device (see *Respiratory Protection Devices*) for entry into affected areas to correct the problem. Move leaking or damaged cylinder outdoors or to an isolated location, observing strict safety precautions. Work upwind from the cylinder if possible. Entry into the affected area by persons not using approved Respiratory Protection Devices is not permitted until the concentration of ENS-004 in the air of the affected area is determined to be 1 ppm or less, as determined by an approved Low Fumigant Level Detection Device (see *Low Level Fumigant Detection Devices*).

Compressed Gas Hazards

The release of fumigant under high pressure can be forceful, creating a potential for personal injury.

A fog-out can occur if ENS-004 is released too rapidly. The chances of this condition occurring may be decreased by following the instructions contained in this label (see *ENS-004 Release Preparation*).

The rapid discharge of ENS-004 through introduction equipment will result in the cooling of parts of the equipment and the cylinders. Contact with the cooled equipment can cause frostbite.

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PREPARATION FOR FUMIGATION

Structure Occupant Fact Sheet

Prior to the application of ENS-004 to a structure, the ENS-004 Fact Sheet must be provided to an adult occupant of the structure to be fumigated. In the case of a multi-unit or connected structure (see below), the ENS-004 fact sheet must be provided to an adult occupant of each currently occupied individual living unit within these structures.

Fumigating Part(s) of A Structure

When fumigating a single unit/room that is a part of or within a larger structure (such as one or more units of a town house, apartment or condominium building/complex) the space within all units of the entire structure must be considered to be fumigated space with respect to all requirements concerning structure entrance security, posting, evacuation, reentry, aeration and clearance.

Fumigating Connected Structures

A connected structure or area is defined as any structure or area connected to or having in common with the space to be fumigated any construction elements (e.g. pipes, conduits, ducts, cavities, voids, etc.) which could possibly allow the passage of fumigant out of the fumigated space into the connected structure(s) or area(s). When fumigating a space to which other structures or areas are connected, the connected structure(s) or area(s) must be considered to be a fumigated space with respect to all requirements concerning structure entrance security, posting, evacuation, reentry, aeration and clearance.

What to Remove from the Fumigated Space

Remove all persons, non-target animals and desirable growing plants from the space to be fumigated. Remove mattresses (except waterbeds) and pillows completely enveloped in waterproof covers or alternately remove covers.

Food, feed, drugs (including tobacco products) and medicines (including those items in refrigerators and freezers) can remain within the fumigated space if they are contained within plastic, glass or metal containers with the original manufacturer's air-tight seal intact.

Protective Bagging of Open Food, Feed and Drugs

Food, feed, drugs (including tobacco products) and medicines (including those items in refrigerators and freezers) not in plastic, glass or metal containers with the original manufacturer's air-tight seal intact must be removed from the fumigated space or protected against exposure to ENS-004 if they are left within the fumigated space.

Items can be protected against exposure to ENS-004 by double bagging them in Fumiguard bags. Fumiguard bags, which are available from Ensystex II, are

made of a material highly resistant to permeation from gases such as sulfuryl fluoride. Double bag in Fumiguard bags all items that must be protected against exposure to ENS-004 that will be left within the fumigated space. Double bagging is performed by placing an item in a Fumiguard bag, twisting the top of the bag closed tightly and then securing the twisted part of the bag in its closed position. The closed bag is then double bagged by placing the closed bag inside another bag which is secured closed in the same manner as the inner bag.

Extinguishing Flames and Disconnecting Heat Sources

Extinguish all flames, including pilot lights of furnaces, water heaters, dryers, gas refrigerators, gas logs, ranges, ovens, broilers, open flames, etc. Turn off or unplug all electrical heating elements such as those in heaters, dryers, pianos, organs, etc. Shut off automatic switch controls for appliances and lighting systems that will be contained within the fumigated space. Contact your local gas company to determine what procedures should be followed in your area for shutting off natural gas or propane service. Gas service should be shut off at the main service valve. Sulfuryl fluoride can react with strong bases such as some photo developing solutions.

Doors and Openings to Closed Spaces

Open and leave open all operable internal doors. Open and leave open all operable openings to rooms, attics, sub-areas, storage rooms and closets. Open and leave open operable doors, covers or lids of any space within which fumigant could accumulate and linger during aeration including storage cabinets, drawers, storage chests and appliances (such as washers, dishwashers, dryers, microwave ovens, conventional ovens, refrigerators, freezers, etc.).

Appliances

Turn off and/or disconnect appliances as appropriate to the circumstances. Alternately leave refrigerators and freezers operating and their doors closed if the choice is made to leave properly sealed items inside of them. If the choice is made to leave sealed items in closed refrigerators and freezers during the exposure period, the appliance's doors should be opened and left open during aeration and clearance of the fumigated space until the concentration of ENS-004 within their interior is 1 ppm or less as measured by an approved and properly calibrated Low Fumigant Level Detection Device.

Air Circulation

Based on the circumstances, it may be necessary to actively circulate the air in all or part of the fumigated space with properly positioned fans after the release of ENS-004 to assure its rapid dispersion within all of the fumigated space. Parts of the structure that may warrant consideration for active air circulation may include basements, dead air spaces and areas located long distances from a point of ENS-004 introduction into the fumigated space. If possible, position and aim fans in such a manner that air closer to the point(s) of ENS-004 release is circulated towards points farther from the point(s) of ENS-004 release.

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Fumigant Confinement

The methods and materials used to confine the fumigant to a space to be fumigated can vary depending on the nature of the space (e.g., structure, vehicle, chamber, vessel) and the inherent resistance of the surfaces that form the space to the movement of the fumigant out of it (e.g., masonry walls vs. wood walls). The more gas tight the fumigated space inherently is or can be rendered to be, the higher the level of fumigant confinement that can be attained. Consider a monitored application of ENS-004 (see *Monitored Vs. Un-Monitored Application*) to any fumigated space where there is uncertainty as to whether or not an adequate level of ENS-004 can be confined to that space for the intended duration of the exposure period.

Structure Fumigation Using A Tarpaulin

When and to the extent needed, use tarpaulin(s) made of a material that effectively confines and is sufficiently impermeable to the passage of the fumigant through it such as vinyl coated nylon or polyethylene sheeting of at least 4 mil thickness to cover the structure or portion of the structure containing the space to be fumigated. Seal all seams between adjacent tarpaulins. Seal all edges of the tarpaulin that touch the ground or ground level surface to that surface with, for example, soil, sand or weighted snakes resting on the edge of the tarp. After tarping, make sure that all operable windows and interior doors of the fumigated space are open.

Fumigant can be lost (and damage to plants outside the fumigated space around the exterior of a fumigated structure can occur) when it is able to penetrate the soil surface within the fumigated space adjacent to where the tarpaulins rest against the ground and move outward. This movement is retarded when the soil between the foundation of the structure and the outermost edge of the tarpaulin around the perimeter of the structure contains a high level of moisture. If soil around the foundation of the structure is not sufficiently moist to act as a barrier to fumigant movement, wet all soil between the foundation of the structure and the outermost edge of the tarpaulin around the perimeter of the structure and around the root zone of plants that may be potentially affected.

Structure Fumigation Without Using a Tarpaulin

For fumigated spaces or structures that can be adequately sealed against the excess movement of fumigant out of them without the use of a tarpaulin, seal adequately around exterior doors, windows, vents, fireplaces and other openings of the fumigated space. Use sealing materials and techniques proven to adequately retard the movement of fumigant out of a fumigated space such as tape and polyethylene sheeting. To minimize escape of fumigant through the soil and to avoid injury to nearby plants, wet soil (if not sufficiently moist) around the structure to act as a barrier to fumigant movement.

Chamber Fumigation

Fumigations with ENS-004 may be conducted in permanent fumigation chambers enclosed within, or connected to, a larger structure. A permanent chamber is defined as a durable hard-walled structure engineered specifically for fumigation that effectively confines ENS-004. Monitor indoor areas around the permanent fumigation chamber for ENS-004 concentrations with an approved and properly calibrated Low Fumigant Level Detection Device during the fumigation, especially during fumigant introduction. No one is permitted in areas where the concentration of fumigant in the air is greater than 1 ppm unless they are using an approved Respiratory Protection Device. Aerate ENS-004 from the chamber by venting it directly to the outside of the structure using a ventilation system that does not release ENS-004 into the structure within which the chamber is located.

Fumigation of Construction Materials, Furnishings (Household effects) and Vehicles

Preparations should be as appropriate to the particular circumstances. Create a sufficiently gas tight seal that will adequately confine the fumigant to the fumigated space for the planned exposure period based on the directions for tarpaulin, non-tarpaulin and chamber fumigation above. If the sealed fumigant space is created within a larger structure (e.g., vehicle fumigated within a garage), the space within the entire structure should be considered fumigated space with respect to all requirements concerning preparation for fumigant introduction (except fumigant confinement and warning agent), structure entrance security, posting, evacuation, reentry, aeration and clearance. Stationary vehicles should be prepared and sealed following the instructions above. Vehicles, trucks, trailers, shipping containers, etc. may be fumigated with ENS-004, however all aeration/clearance procedures must be completed before these are transported or driven over public roads.

Fumigation of Surface Ships in Port

Surface ships in size up to and including large ocean-going ships may be fumigated with ENS-004 to control the pests listed on this label. The applicator and the ship's captain (or owner) shall follow all applicable regulations including those contained in the Code of Federal Regulations, Title 46 – Shipping, Chapter 1 - Coast Guard, Part 147A. Except for those persons involved in the fumigation, no people, plants, or pets may be on-board during fumigation.

The person responsible for the fumigation must notify the master of the vessel, or his representative, of the requirements relating to the use of Respiratory Protection Devices and Low Fumigant Level Detection Devices. Emergency procedures, cargo ventilation, periodic monitoring, inspections and first aid measures must be discussed with and understood by the master of the vessel or his representative.

If leakage of the fumigant is detected, the person in charge of the fumigation shall take action to correct the leakage, or shall inform the master of the vessel, or his representative, when appropriate, of the leakage in order that corrective action can be taken by them.

Edible commodities, including food and feed, shall not be exposed to the fumigant. If they are not removed from the vessel they shall be protected from exposure to the fumigant. The vessel must not be moved during the period of time between initial fumigant application and final clearance.

Approved Respiratory Protection Devices must be worn during reentry into the fumigated space when reentry occurs between the time of initial fumigant application and final clearance and a concentration of more than 1 ppm of fumigant is detected in a breathing zone of the fumigated space during that period.

Warning Agent

Chloropicrin is a warning agent that must be released within the space to be fumigated prior to introduction of ENS-004 into that space. Even at very low levels of concentration in the air, unprotected exposure to chloropicrin in the air causes tearing and smarting of the eyes accompanied by a disagreeable, penetrating smell. Chloropicrin must be released into the fumigated space only by a Certified Applicator or someone under their direct supervision. Applicators must observe the precautionary statements and safety recommendations appearing on the label of the chloropicrin containing product.

Chloropicrin must be released within a fumigated space at least 5 minutes prior to introduction of the fumigant. Apply/release 1 fluid oz of chloropicrin per 10,000 to 15,000 cubic feet - (30 ml of chloropicrin per 283 to 425 cubic meters) of fumigated space. Establish at least one chloropicrin introduction site for each 45,000 cubic feet (1275 cubic meters) of fumigated space. Dispense no more than 3 fluid ounces (90 ml) of chloropicrin into a single evaporation container.

Distribution of chloropicrin throughout a fumigated space is enhanced by applying/releasing it as follows:

1. Place a shallow, wide container directly behind a fan in its air stream.
2. Place a handful of wicking agent, (e.g., cotton) in the bottom of the container.
3. Pour the chloropicrin over the wicking agent.

Do not place chloropicrin into a container made of magnesium, aluminum, or their alloys, as chloropicrin may severely corrode these metals. Removal of all chloropicrin evaporation containers from the fumigated space as soon as possible after commencement of the initial aeration procedure will speed dissipation of the chloropicrin from the fumigated space.

The use of chloropicrin is not required when fumigating railcars and shipping containers; however if chloropicrin is not used, a thorough pre-fumigation walk-through inspection must be performed of each railcar or shipping container with their doors being immediately locked upon leaving each car or container. A guard must be continuously posted during the period between ENS-004 introduction and final clearance if no chloropicrin is used.

Securing Fumigated Structure Entrances

During the Exposure Period and Step 2 of the aeration procedures, fumigated structure(s) must be secured against the possibility of entry into the structure(s) by anyone other than a Certified Applicator or persons under their direct supervision. Two levels of security against unauthorized entry must be employed at each exterior entrance during those periods, if practicable. In addition to the use of existing locking mechanisms, if present, a secondary locking device must also be used. Secondary locks shall consist of a device or barricade that has been demonstrated to be effective in preventing the opening of exterior doors or entrances using normal opening or entering processes by anyone other than the Certified Applicator or someone under their direct supervision. Consult state and local regulations for any supplementary instructions and/or restrictions on securing against unauthorized entry into fumigated structures.

Posting of Fumigated Spaces

All entrances and all sides of the fumigated space including those within structures, chambers, vehicles, ships and stacks must be posted and placarded with warning signs. Signs must remain legible during the entire posting period. Post warning signs in advance of the fumigation in order to keep unauthorized persons away. All signs must bear the following in English and Spanish:

1. The signal word "DANGER/PELIGRO" and the SKULL and CROSSBONES symbol in red.
2. The statement, "Area under fumigation, DO NOT ENTER/NO ENTRE".
3. The date of the fumigation.
4. Name and EPA Registration Number of the fumigant.
5. Name, address, and telephone number of the fumigation company and the licensed/certified applicator.

Signs must remain in place until the fumigated space has been cleared for re-occupancy according to the applicable aeration procedure.

Determining Doses and Exposure Periods for ENS-004

The amount of ENS-004 applied to the fumigated space is referred to as the dose. The level of fumigant present in the air is referred to as the concentration. Dose is expressed in pounds of fumigant and concentration is expressed in

ounces of ENS-004 per thousand cubic feet of fumigated space. Achieving target pest mortality with ENS-004 is dependent upon the concentration of ENS-004 present in the air the target pest is breathing. However, it is also dependent upon the length of the period of time the target pest is exposed to that concentration (exposure period) and the temperature. For a given temperature and rate of ENS-004 loss from the fumigant space, increases in the concentration of ENS-004 can reduce the length of the exposure period required to kill a pest. Conversely, under the same temperature and rate of fumigant loss conditions, increases in the length of the exposure period can reduce the concentration of ENS-004 required to kill the same pest. Concentration in ounces per thousand cubic feet multiplied by the number of hours in the exposure period is referred to as the Kill Power Index.

The Fumicalc computer program, designed to run on most types of desktop and laptop computers and many handheld computers, is used to calculate the Kill Power Index that must be achieved within a fumigant space to kill the target pest and the dose and exposure period necessary to achieve that Kill Power Index. The Fumicalc program is part of the ENS-004 labeling and must be used to calculate all doses and exposure periods for ENS-004. The Fumicalc accepts as inputs the factors necessary to compute these values for all labeled target pests. The Fumicalc program is available from Ensystex II, Inc.

Certain insects are more susceptible to exposure to ENS-004 than others. This means higher Kill Power Indexes must be achieved for certain Target Pests compared to that needed to kill others. Higher Kill Power Indexes can be achieved for any fumigated space by administering a higher Concentration of ENS-004 and/or extending the Exposure Period, all of which is handled by the Fumicalc automatically. All you have to do is tell the Fumicalc the Target Pest and it makes any necessary adjustments to the Kill Power Index.

The egg stage of some Target Pests are not susceptible to sulfuryl fluoride and thus cannot be killed by ENS-004. In this case it may be advisable to fumigate once at a concentration sufficient to control the post-embryonic (larva, pupa, adult) stages. After any surviving insect eggs have hatched, but prior to these insects' maturation and deposition of new eggs, fumigate a second time, again at the post-embryonic life stage concentration.

The Kill Power Index necessary to control different target pests is expressed in the following table as multiples of the Kill Power Index required to kill Drywood termites (Index = 1), assuming the applications occurred under the same conditions. When the egg stage of a Target Pest cannot be killed with ENS-004, the multiple of the Drywood Termite Kill Power Index that must be achieved to kill the non-egg stages only is given instead. These multiples apply to the use of ENS-004 within all types of fumigated spaces.

Kill Power Indexes for Different Pests (Drywood Termite Index = 1)

Pests	Multiple of the Drywood Termite Kill Power Index	Comments
Rodents	1/2x	
Carpet Beetles	1x	Eggs are not killed
Cockroaches (except German)	1x	Eggs are not killed
Cockroach (German)	1x	
Furniture Carpet Beetles	3x	Eggs are not killed
Bedbugs	3x	
Old House Borers	4x	
Formosan Termites	4x	Above ground termites only are killed. Use in combination with other methods to kill infestations originating below ground.
Clothes Moths	6x	
Powder Post Beetles and Death Watch Beetles	10x	

Monitored Vs. Un-Monitored Application

Monitor or monitoring refers to the periodic measurement of the actual concentration of ENS-004 contained within the air of the fumigated space. Monitoring confirms the concentration of ENS-004 to which the Target Pest is exposed and allows for correction of variations of the actual from the expected concentration of ENS-004, if necessary. Monitoring can increase the accuracy with which the needed Kill Power Index is applied and is particularly recommended when a high level of precision is necessary. A monitored or unmonitored application of ENS-004 can be made to any fumigated space for the control of any type of Target Pest.

The ENS-004 Fumicalc calculator is designed to calculate the dose of ENS-002 (and supplements to the dose during the course of the fumigation in the case of a monitored application, if needed) for any fumigated space for both monitored and unmonitored applications.

ENS-004 Release Preparation

Prepare to release the ENS-004 through a shooting tube to be attached to the ENS-004 cylinder whose discharge end is positioned within the fumigated space. The system for introduction of ENS-004 into the fumigated space (tubing, connectors, etc.) should be free of leaks and designed to withstand a minimum burst pressure of 500 pounds per square inch (psi).

If monitoring will occur, run gas sampling lines from representative locations within the fumigated space to exterior monitoring points before ENS-004 introduction.

Preventing Fog - Outs

ENS-004 is packaged as a liquid under pressure. When it is released into the fumigated space it must be converted into a gas to be effective as a fumigant. This process of release and conversion, if not properly prepared for and controlled, can result in damage to surfaces within the fumigated space from contact with water condensed from the air as the liquid to gas conversion process cools the air into which the fumigant is introduced and nearby surfaces. Damage can also occur when unconverted liquid fumigant, possibly present in the fumigated space after it is released but before it converts to a gas, comes into contact with surfaces that might be damaged by its presence.

The conversion of ENS-004 from a liquid in the cylinder to a gas requires a source of heat. The heat to make this conversion is taken from the air into which the ENS-004 is released as it contacts the air. The need for heat to make this conversion can cause problems when the release of fumigant removes enough heat from the air to cause the air temperature to drop below its Dew Point temperature. The amount of moisture a parcel of air can hold is dependent upon its temperature. The Dew Point temperature for a parcel of air is the temperature at which that air is holding as much moisture as it can hold. If the temperature of air falls below its Dew Point temperature, fog can form and moisture can condense from the air onto nearby surfaces if the temperature of these surfaces is low enough. The higher the percent relative humidity and the lower the temperature of surfaces in the fumigated space before the introduction of fumigant, the greater the chance fog will form in the air and/or condensation will form on surfaces. Condensation can damage surfaces it forms on if they are sensitive to the presence of moisture.

The conversion of the fumigant from liquid to gas normally occurs almost instantaneously when it is released into the fumigated space, however it is possible that, based on the circumstances, some fumigant will remain in its liquid form for a short period of time after it has been released. This can be a problem if this super-cooled liquid fumigant is deposited onto surfaces that can be damaged by its presence, however brief.

Care must be taken to reduce the chances that moisture is condensed from the air within the fumigated space during fumigant application or that unconverted liquid fumigant is present within the fumigant space long enough to come to rest on surfaces. One way to accomplish both of these is to maximize the amount of air into which the fumigant is released. The greater the number of "units" of air used to vaporize each "unit" of fumigant, the less heat that must be removed from each "unit" of air during the conversion process. This reduces the possibility that the capacity of the air into which the fumigant is released to hold water or fumigant will be exceeded. Increase the volume of air into which the fumigant is released, and thereby maximize the rate of fumigant vaporization from liquid to gas, by situating the discharge end of the fumigant shooting tube on the positive pressure side of an operating fan (blast side) located within a large open area of the fumigated space. The air movement capacity of the fan should be at least 1,000 cubic feet per minute for each pound of ENS-004 released per minute.

Using a small inside diameter shooting tube (1/8 inch) can also reduce the chances of un-vaporized fumigant coming to rest on surfaces within the fumigated space. To further protect against the effects of un-vaporized fumigant on surfaces, it is recommended that protective sheeting, such as polyethylene plastic, be placed on the floors in the vicinity of any fumigant release point. **In order to prevent damage, do not apply fumigant directly to any surface.**

Special care should be taken when the percent relative humidity of the air within the fumigated space is high (the amount of moisture in the air is high compared to the total amount it can hold). If necessary delay the fumigation until conditions are more favorable such as when the relative humidity within the structure to be fumigated is lower.

ENS-004 Release

Before introducing the fumigant, verify that all required safety equipment is available and in good working order. Position the ENS-004 cylinder(s) outside the space to be fumigated. Do not connect cylinders to introduction equipment until all fumigation warning signs have been posted and the space to be fumigated is clear of persons, non-target animals and is properly secured.

Release the ENS-004 from outside the fumigated space. Wear splash resistant goggles or full face shield for eye protection during introduction of fumigant or when working around any lines containing fumigant under pressure. Do not wear gloves or rubber boots.

Aeration and Clearance

Aeration

The final step in using ENS-004 is to remove it from within the fumigated space (aeration) and to confirm its absence from the fumigated space after the completion of the aeration process (clearance). Aeration of ENS-004 from a fumigated space involves actively exhausting and/or allowing the ENS-004 to dissipate from the fumigated space out into the atmosphere. Clearance involves

sampling the air within the fumigated space with an approved and properly calibrated Low Fumigant Level Detection Device until readings given by the detection device indicate that fumigant is no longer present above 1 ppm within the breathing zones of any room of the fumigated space. Only when certain periods of time (see *Aeration Procedures* below) have elapsed after the initiation of the aeration process and the level of fumigant remaining is confirmed at the end of those time periods to no longer exceed 1 ppm can final clearance for re-occupancy be given.

Respiratory Protection Requirements During Aeration and Clearance

The processes of aeration and clearance of the fumigated space require entry into the fumigated space while the level of ENS-004 in the air within the fumigated space still exceeds 1 ppm. All persons entering and/or remaining inside the fumigated space between the time of initial application of ENS-004 to the fumigated space and final clearance of the fumigated space must adhere to the requirements of the *Respiratory Protection, Respiratory Protection Devices* and *Low Fumigant Level Detection Devices* sections of this label.

Aeration Procedures

There are two approved procedures for aeration. The aeration procedure used for a fumigated space is based on the total amount of ENS-004 per thousand cubic feet that was released within the fumigated space during the exposure period. All structures into which a total of more than 16 ounces of ENS-004 per thousand cubic feet of fumigated space has been released during the Exposure Period must be aerated using Aeration Procedure 2. All other fumigated spaces can be aerated using either Aeration Procedure 1 or Aeration Procedure 2.

Aeration Procedure 1 – Applied Dose 16 oz/1000 cubic feet or less

These steps must be completed in sequence.

Step (1): Aerate the fumigated space with all operable windows and doors open, aided by the use of 1 or more fans, for a minimum of 1 hour. All of the fans used shall, in total, be capable of displacing at least 5,000 cubic feet of air per minute. The fans may be turned off for the remainder of the aeration period if desired.

Step (2): Secure fumigated space and do not allow reentry for a minimum of 6 hours from the start of the aeration process (first opening of the seal). During this time, the fumigated space must remain posted.

Step (3): After the minimum 6 hour waiting period, measure the concentration of ENS-004 in the breathing zones of each room of the fumigated space using an approved and properly calibrated Low Fumigant Level Detection Device. If a concentration of ENS-004 greater than 1 ppm is detected, ventilate the fumigated space by opening operable doors and windows for at least 10 minutes. Fumigated space may be cleared for re-occupancy when the concentration of ENS-004 as measured with an approved and properly calibrated Low Fumigant Level Detection Device is determined to be 1 ppm or less.

Aeration Procedure 2 – Applied Dose More Than 16 oz/1000 cubic feet

These steps must be completed in sequence.

Step (1): Aerate the fumigated space with all operable windows and doors open, aided by the use of 1 or more fans, for a minimum of 1 hour. All of the fans used shall, in total, be capable of displacing at least 5,000 cubic feet of air per minute. The fans may be turned off for the remainder of the aeration period if desired.

Step (2): Secure the fumigated space and do not allow reentry for a minimum of 8 hours from the start of the aeration process (first opening of the seal). During this time, the fumigated space must remain posted.

Step (3): After the minimum 8 hour waiting period, measure the concentration of ENS-004 in the breathing zones of each room of the fumigated space using an approved and properly calibrated Low Fumigant Level Detection Device. If a concentration of ENS-004 greater than 1 ppm is detected, ventilate the fumigated space by opening operable doors and window for at least 10 minutes. Fumigated space may be cleared for re-occupancy when the concentration of ENS-004 as measured with an approved and properly calibrated Low Fumigant Level Detection Device is determined to be 1 ppm or less.

Final Clearance and Re-occupancy

Do not reoccupy fumigated space, i.e., structure, ship, vehicle or chamber, or move fumigated vehicles until aeration is complete and clearance has been given. Warning signs must remain posted until aeration is completed and final clearance for re-occupancy is given.

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