

Specimen Label

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.

SULFURYL FLUORIDE

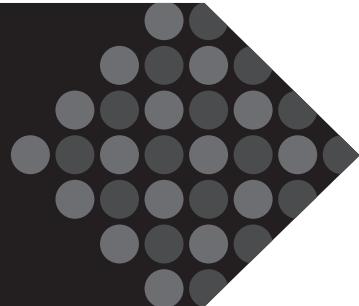
GROUP

8C

INSECTICIDE



VIKANE®



GAS FUMIGANT

[®]Trademark of Douglas Products and Packaging Company ("Douglas Products")

For control of: Existing infestations of listed insects and related pests such as drywood termites, Formosan termites, powder post beetles, death watch beetles, old house borers, bedbugs, clothes moths, rodents (rats, mice), the larvae and adults of carpet beetles (except egg stage), German, oriental, American, and brown-banded cockroaches, and pests in sulfuryl fluoride quarantine treatment schedules, such as brown marmorated stink bugs.

For use in: Dwellings (including mobile homes), buildings, construction materials, furnishings (household effects), shipping containers and vehicles including automobiles, buses, surface ships, passenger railcars, and recreational vehicles (but not including aircraft), and all contents, parts, or materials that could comprise or be located within any of the foregoing.

When fumigating, observe local, state, and federal rules and regulations including such things as use of chloropicrin, clearing devices, positive-pressure self-contained breathing apparatus, security requirements, and placement of warning signs.

Application personnel must participate in Douglas Products' Product Stewardship Plan.

Active Ingredient

 sulfuryl fluoride.....99.8%

Other Ingredients.....

0.2%

Total100.0%

EPA Reg. No. 1015-78

Keep Out of Reach of Children

DANGER **POISON**

PELIGRO

Precaucion al usuario: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente. (If you do not understand the label, find someone to explain it to you in detail.)



Escanee el código QR para la etiqueta en español (scan QR Code for Spanish label)

Precautionary Statements

Hazards to Humans and Domestic Animals

Extremely Hazardous Liquid And Vapor Under Pressure • Fatal If Inhaled • May Be Fatal If Swallowed • Liquid May Cause Freeze Burns of Exposed Skin

Do not get in eyes, on skin, or on clothing. Vikane® gas fumigant is odorless. Exposure to toxic levels may occur without warning or detection by the user.

Refer to the Directions for Use section on this label and the Structural Fumigation Manual for Vikane for additional precautionary information and Directions for Use.

Notice: Labeling for Vikane consists of the label and the structural fumigation manual. Both the label and the manual must be read and understood before using this product. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-844-845-3129 or 1-352-323-3500.

Pest Control Chemical: Do not ship or store with food, feed, drugs, or clothing.

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.

FIRST AID

IF INHALED:	<ul style="list-style-type: none">Get exposed person to fresh air.Keep warm and at rest.Make sure person can breathe freely.If breathing has stopped, call 911 or an ambulance, then give artificial respiration.Do not put anything in the mouth of an unconscious person.Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none">Immediately apply water to contaminated area of clothing before removing.Once area has thawed, remove contaminated clothing, shoes, and other items covering skin.Rinse contaminated skin area with plenty of water for 15-20 minutes.Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none">Hold eye open and rinse slowly and gently with water for 15 to 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.

HOT LINE NUMBER

In all cases of overexposure, such as nausea, difficulty in breathing, abdominal pain, slowing of movements and speech, numbness in extremities, get medical attention immediately. Take person to a doctor or emergency treatment facility. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call 1-844-845-3129 or 1-352-323-3500.

NOTE TO PHYSICIAN

Vikane® gas fumigant is a gas which has no warning properties such as odor or eye irritation. (However, chloropicrin is used as a warning agent and is a known lacrymator). Early symptoms of exposure to Vikane 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. Liquid Vikane in the eye may cause damage due to frostbite or freezing.

Refer to Chapter 7 in the Structural Fumigation Manual for Vikane for first aid for overexposure to chloropicrin.

Storage and Handling

Store in dry, cool, well-ventilated area under lock and key. Post as a pesticide storage area. If the storage area is in an occupied building, the storage area must have either 1) a forced air ventilation system that meets required local ordinances for the storage of hazardous materials and operates continuously; or 2) be equipped with a permanently mounted and properly maintained and functioning sulfuryl fluoride monitoring device designed to alert occupants of the building if sulfuryl fluoride in the air of the storage area is greater than 1 ppm. Store cylinders upright, secured to a rack or wall to prevent tipping. Do not contaminate water, food, or feed by storage.

Cylinders must not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging, or sliding beyond that which would normally occur when moving cylinders. Do not transport any cylinders in closed vehicles where they occupy the same common airspace as personnel. Transport securely only in an upright position.

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.

When cylinder is empty, close valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to supplier. Only the registrant is authorized to refill cylinders. Do not use cylinder for any other purpose. Follow registrant's instructions for return of empty or partially empty cylinders.

Leak Procedures: Evacuate immediate area of leak. Use a NIOSH or MSHA approved positive-pressure self-contained breathing apparatus (SCBA, not SCUBA) or combination air-supplied/SCBA respirator, such as manufactured by Ranger, Survivair, Scott, or MSA, for entry into affected areas to correct problem. Move leaking or damaged cylinder outdoors or to an isolated location, observing strict safety precautions. Work upwind if possible. Do not permit entry into leakage area by unprotected persons until concentration of fumigant in the breathing zone (areas within the structure where individuals typically stand, sit, or lie down) is determined to be 1 part per million (ppm) or less. Confirm concentration of sulfuryl fluoride of 1 ppm or less with a clearance device. Refer to EPA's website at Sulfuryl Fluoride | US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices. For more detailed information on the source and use of air monitoring devices or respirators, consult distributors for Vikane and for these devices and respirators.

Cylinder and Product Disposal: Promptly return all empty cylinders to your distributor of Vikane. Follow proper cylinder handling directions above.

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide is a violation of Federal law. If these 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.

Information

The Structural Fumigation Manual is part of the labeling for Vikane® gas fumigant. Before using, read and follow all label precautions and directions. After the parties enter into a fumigation contract, the Fact Sheet for Vikane must be provided to an adult occupant of the structure to be fumigated or of each currently occupied unit in multi-unit structures.

Vikane is a highly hazardous material and must be used only by individuals knowledgeable of the hazards of this chemical and trained in the use of required respiratory equipment, fumigant detection devices, emergency procedures, and in the proper use of this fumigant.

When used for fumigation of enclosed spaces, such as houses and other structures, warehouses, vaults, chambers, trucks, vans, boxcars, ships, and other transport vehicles, 2 persons trained in the use of this product, at least one being an applicator who is licensed/certified by the state, must be present during introduction of fumigant, reentry prior to aeration, and during the initiation of the initial aeration procedure when exposure exceeds 1 ppm. **Two persons need not be present if monitoring is conducted remotely (outside the area being fumigated) and no one enters the fumigated structure.**

If fumigating for insect pests, do not apply when temperature at site of pest activity is below 40°F. This temperature may be measured at the slab foundation, sub-floor soil, or wherever the coolest part of the structure may be. This restriction does not apply when fumigating for rodents.

When fumigating a single unit/room within or connected to a larger structure (such as town houses, apartments, condominiums), all units of the entire structure must be vacated during the fumigation and aeration periods.

Chloropicrin must be used as described on this label to warn of an ongoing fumigation.

Douglas Products' Product Stewardship Plan

Douglas Products' Product Stewardship Plan, that includes EPA's stewardship plan criteria, is available at Sulfuryl Fluoride I US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>). Applicators and distributors of Vikane must participate in Douglas Products' Product Stewardship Plan for residential structural fumigations. This plan is also available at Sulfuryl Fluoride I US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for Vikane. Vikane must only be used by application personnel who satisfactorily comply with the Vikane Stewardship Plan, including the initial and annual training requirements.

Preparation for Fumigation

Site-Specific Structural Fumigation Log

Structural Fumigation Log requirements. The following elements for structural fumigation for each site must be documented.

The Site-specific Structural Fumigation Log is intended to ensure a safe and effective fumigation. The certified applicator in charge of fumigation is responsible for verifying that a Fumigation Log must contain, at a minimum, the information listed below. The information followed by a "(B)" below must be documented before the initiation of the fumigation; other information listed below without a "B" must be documented during the fumigation process, if not before. Contracts, site graphs, dose calculation reports, state or federally required forms and/or other documents prepared for or used during the fumigation can be used as documentation for these Fumigation Log requirements. Fumigation employees who introduce chloropicrin and sulfuryl fluoride, initiate aeration, and/or conduct final clearance testing must have participated in the registrant's sulfuryl fluoride training, as required by the registrant's stewardship plan.

1. General Information:
 - a. Fumigation company (B)
 - b. Fumigation site address (B)
 - c. Structure type (B)
 - d. Target pest(s) (B)
2. Fumigant Introduction:
 - a. Dosing calculations:
 - i. Dosage factor
 - ii. Tarp condition
 - iii. Under seal type
 - iv. Seal condition
 - v. Wind (mph)
 - vi. Volume of fumigated space (1000 cubic feet) (B)
 - vii. Underseal
 - viii. Temperature
 - ix. Hours of Exposure
 - b. Introduction of chloropicrin and sulfuryl fluoride:
 - i. Name, license number, and signature of certified applicator responsible for introduction of chloropicrin and sulfuryl fluoride.
 - ii. Name(s) of second trained person(s) and certified applicator(s) assisting with introduction of chloropicrin and sulfuryl fluoride.
 - iii. Total ounces of warning agent chloropicrin introduced and number of introduction sites.
 - iv. Cylinder serial number(s) of sulfuryl fluoride applied.
 - v. Pounds of fumigant applied.
 - vi. Date and time of fumigant release.
3. Aeration:
 - a. Name, license number, and signature of certified applicator responsible for initiating aeration.
 - b. Name(s) of certified applicator(s) and second trained person(s) assisting with initiating aeration.
 - c. Date and time of aeration initiated.
4. Final clearance testing:
 - a. Name, license number, and signature of certified applicator responsible for conducting final clearance testing.
 - b. Name(s) of certified applicators assisting final clearance testing.
 - c. Date and time final clearance testing completed.
 - d. Clearance device model type
5. Emergency response information:
 - a. Get exposed person to fresh air. Call 911 or an ambulance. Keep exposed person warm and at rest. Make sure person can breathe freely. If breathing has stopped, give artificial respiration. Do not put anything in the mouth of an unconscious person.
6. Open Comment field:
 - a. Provide an open field for additional comments or issues that are not captured in other sections of this Structural Fumigation Log.

Structural Fumigation

Remove from the structure to be fumigated all persons, domestic animals, pets, and desirable growing plants. See the Structural Fumigation Manual for instructions regarding the handling of fish tanks. For mattresses (excluding waterbeds) and pillows completely enveloped in waterproof coverings, do one of the following: 1) open the seal of the waterproof covering or 2) remove the mattress or pillow from the space to be fumigated if the waterproof covering cannot be opened. Mattresses and pillows with waterproof coverings containing built-in vents designed to permit air passage are considered to have an open seal to the waterproof covering and can remain as-is in the fumigated space. Food, feed, drugs (including tobacco products), and medicinals (including those items in refrigerators and freezers) can remain in the structure if they are in plastic, glass, or metal bottles, cans, or jars with the original manufacturer's air-tight seal intact. Food, feed, drugs (including tobacco products), and medicinals (including those items in refrigerators and freezers) not in plastic, glass, or metal bottles, cans, or jars with the original manufacturer's air-tight seal intact, need to be removed from the fumigation site, or double bagged in Nylofume® bags, which are available from distributors of Vikane® gas fumigant.

Note: Extinguish all flames, including pilot lights of water heaters, gas refrigerators, ranges, ovens, broilers, dryers, gas fireplaces, etc. Turn off or unplug all electrical heating elements such as those in heaters, pianos, organs, etc. Shut off automatic switch controls for appliances and lighting systems which will be included in the space to be fumigated.

Prepare for Aeration Procedures 1 and 2 by doing the following:

- a) Open all operable attic doors and accesses and direct a fan into the attic.
- b) Position introduction and circulation fans to provide for air circulation throughout the fumigated space. For example, a circulation fan in the hall could be used to aid air circulating in bedrooms and bathrooms.
- c) For residential structures, use a minimum of one fan of at least 18 inches in diameter for every 22,500 cubic feet of space to be fumigated.¹

Open operable internal doors, internal openings to attics and sub areas, furniture with large voids (such as wardrobes, etc.), cabinets, drawers, closets, and appliances (such as washers, dishwashers, dryers, microwave or conventional ovens, etc.). Using electric fan(s) will help provide for forced distribution and aeration of basements and other dead air spaces to facilitate rapid dispersion of gas. Refrigerator and freezer doors may be left open if the units are turned off or disconnected and all food items have been removed. If the applicator chooses to leave any appliance, including refrigerators and freezers closed during the fumigation, the appliances must be opened when clearing the structure until the concentration of Vikane in it is 1 ppm or less.

Multi-Unit Structures: When fumigating a single unit/room within a larger structure (such as townhouses, apartments, condominiums), all units of the entire structure must be prepared as a fumigated structure, and all applicable rules, regulations and label instructions apply, such as occupant notification, structure preparation, posting, securing, and aeration. An adult occupant of each currently-occupied unit must be provided with the Fact Sheet for Vikane. Ensure that all exterior entranceways and exterior doors providing access to individual units are secured with secondary locks (see Securing Structure Entrances) so that only the state licensed applicator in charge can gain access. Chloropicrin need only be used in the fumigated space where Vikane is introduced.

During Step (3) of Aeration Procedure 1 or 2, check all units within the fumigated structure for concentrations of Vikane with a clearance device. Confirm concentration of sulfuryl fluoride of 1 ppm or less with a clearance device. Refer to EPA's website at [Sulfuryl Fluoride | US EPA](https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride) (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices. If the concentration of Vikane is greater than 1 ppm in the breathing zone (i.e., areas within the structure where individuals typically stand, sit or lie down) in a unit, ventilate the unit with operable doors and windows open and continue to measure the concentration of Vikane until it is 1 ppm or less. Structure may be reoccupied when concentrations in the breathing zones in all units is 1 ppm or less.

Connected Structures: A connected structure is defined as any structure connected with the structure to be fumigated by construction elements (e.g., pipes, conduits, ducts, etc.) which may allow passage of fumigant between the structures. If state rules and regulations do not describe or permit a process to isolate and seal a connected structure to prevent passage of fumigant from the fumigated structure, then the connected structure must be vacated during the fumigation. When it is necessary to vacate any connected structure, that structure shall be considered as a fumigated structure and all applicable rules, regulations and label instructions apply, such as occupant notification, structure preparation, posting, securing, and aeration. Chloropicrin need only be used in structures where Vikane is introduced. Concentration levels of Vikane must be measured in the breathing zones (areas within the structure where individuals typically stand, sit or lie down) (see Aeration and Reentry) in any connected space or structure to confirm concentrations are 1 ppm or less before structure can be reoccupied.

Tarpaulin Fumigation

Open operable windows as permitted by local and state regulations and as described in the Structural Fumigation Manual for Vikane. When tarping, use a highly resistant material such as a vinyl coated nylon, or polyethylene sheeting of at least 4 mil thickness. Seal all seams. Seal the bottom edges of the cover to the ground using materials such as soil, sand, or weighted "snakes." To minimize escape of gas through the soil and to avoid injury to nearby plants, wet soil outward from foundation to the cover if not sufficiently moist to act as a barrier for the gas.

Taped Fumigation

For fumigation sites that can be sealed with plastic, paper, or tape, seal adequately around doors, windows, vents, and other openings.

Chamber Fumigation

For chamber fumigation use a tightly-sealed chamber with adequate circulation.

Construction Materials, Furnishings (Household Effects), Vehicles, and Shipping Containers

Follow preparations as appropriate in above paragraphs for chamber, taped fumigation, or tarpaulin fumigation to assure good confinement of the gas for the recommended period of exposure.

Fumigation of Surface Ships in Port

Surface ships in size up to and including large ocean-going ships may be fumigated with Vikane to control the various pests listed. The professional fumigator and the ship's captain (or owner) shall follow all applicable regulations including those listed in the Coast Guard, DOT, Title 46, Shipping section, Parts 147A.1-147A.43. Except for those persons involved in 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 personal protection equipment and detection equipment. Emergency procedures, cargo ventilation, periodic monitoring and 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, of the leakage so that corrective action can be taken.

The vessel must not be moved during the fumigation and aeration periods. If reentry is necessary before aeration is completed, positive-pressure self-contained respiratory protection must be worn.

¹ A residential structure is where people typically live (temporarily or permanently) and sleep, such as single-family residences, mobile homes, apartments, townhouses, condominiums, hotels, motels, assisted care facilities, nursing homes, hospitals, barracks, and dormitories.

Warning Agent

Chloropicrin is a warning agent introduced into the structure during fumigation. Chloropicrin is an effective warning agent but is not intended to be used to vacate people, pets, domestic animals, or feral animals from the structure prior to introduction of Vikane® gas fumigant. Therefore, the structure to be fumigated must be inspected to confirm required preparations have been completed prior to introduction of chloropicrin. In order to avoid direct exposure to the fumigant being released, chloropicrin must be released within the structure at least 5 to 10 minutes prior to introduction of the fumigant. Place a handful of wicking agent (e.g., cotton) in a chloropicrin evaporation container(s). Do not use chloropicrin evaporation containers or application equipment made of magnesium, aluminum, or their alloys as chloropicrin may be severely corrosive to such metals. To enhance the distribution of chloropicrin throughout the structure, place the chloropicrin evaporation container in the air stream of a fan. Pour chloropicrin over the wicking agent. When adding chloropicrin to evaporation containers, dispense no more than 3 fl oz per container. Use 1 fl oz/10,000 to 15,000 cubic feet (30 ml/283 to 425 cubic meters) of space to be fumigated or follow dosage rate calculated by the Vikane Fumiguide® Calculator. Establish at least one chloropicrin introduction site for each 45,000 cubic feet of space to be fumigated. When applying chloropicrin at multiple chloropicrin introduction points within a structure, start at the point farthest from the exit and work toward the exit. Removal of all chloropicrin evaporation containers from the fumigated space during the initial phase of aeration after tarp removal will aid in the dissipation of the warning agent from the structure.

Chloropicrin need not be used when fumigating passenger railcars; however, a thorough walk-through inspection must be performed of each railcar with doors being immediately locked upon leaving each car, and a guard must be posted during fumigant introduction, exposure period, and aeration.

Chloropicrin is a warning agent which causes smarting of the eyes, tears, and discomfort, and has a very disagreeable pungent odor at very low concentrations. Chloropicrin must be used by persons certified to apply Vikane or under their supervision. Applicators must observe the chloropicrin precautionary statements and personal protective equipment appearing in the "Release of Warning Agent" Chapter of the Structural Fumigation Manual for Vikane.

Personal Protection Equipment

Eye Protection

Wear splash-resistant goggles (goggles designed and made of material that allows no measurable movement of the liquid pesticide being used to pass through them during use) or full-face shield for eye protection during introduction of the fumigant.

Protective Clothing

Do not wear gloves or rubber boots. Do not reuse clothing or shoes that have become contaminated with liquid Vikane until thoroughly aerated and cleaned.

Respiratory Protection

If the concentration of Vikane in the breathing zone (areas within the structure where individuals typically stand, sit or lie down) of the fumigated area (as measured with a clearance device that does not exceed 1 ppm (4 mg/cubic meter), no respiratory protection is required. Confirm concentration of sulfuryl fluoride of 1 ppm or less with a clearance device. Refer to EPA's website at Sulfuryl Fluoride | US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices. When this concentration is exceeded, all persons in the exposed area must wear a NIOSH or MSHA approved positive-pressure self-contained breathing apparatus (SCBA, not SCUBA) or combination air-supplied/SCBA respirator such as manufactured by Ranger, Survivair, Scott, or MSA. Before using any make or brand of SCBA, learn how to use it correctly. Determine that it has an adequate air supply for the job at hand, that it fits properly, providing an adequate seal around the face, and that it is in good working order. For more detailed information on the source and use of air monitoring devices and respirators, consult distributors for Vikane and for these devices and respirators.

Prefumigation Check: Check for potential leaks.

Securing Structure Entrances

To secure the structure against unauthorized entry during the fumigation exposure period and Step 2 of Aeration Procedure 1 or 2, use a locking device or barricade on all exterior doors or doorways. A locking device, such as a secondary lock, or barricade must be demonstratively effective in preventing an exterior door or doorway from being opened from the exterior using normal opening or entering processes by anyone other than the certified applicator in charge of the fumigation or persons in his/her on-site direct supervision. Consult state and local regulations for any supplementary instructions and restrictions on securing against entry. See the Structural Fumigation Manual for Vikane for directions for securing Passenger Railcars.

Dosage and Exposure Time

For fumigation to control drywood termites and non-egg stages of other insect and related structural and household pests, the Fumiguide is to be used for the coordination of fumigant rates with soil or slab temperature, exposure period, and fumigant loss rate measured as half-loss-time (HLT). When control of the egg stage is desired or when fumigating for Formosan termites, use the indicated multiple factor of the drywood termite dosage (as determined by the Fumiguide) for pests listed in the following table:

Pest	Dosage Factor (as a multiple of drywood termite dosage)
rodents ¹	1/2X
carpet beetles ² , German cockroaches, and other cockroach species ²	1X
Bedbugs	1.9X
furniture carpet beetles ²	3X
old house borers and Formosan termites	4X
clothes moths	6X
powder post beetles and death watch beetles	10X

These dosages apply to dwellings, buildings, construction materials, furnishings, and vehicles.

Do not use less than the specified dosage factors when treating for rodents, cockroaches, bed bugs, and termites.

¹To determine the proper dose for rodent control, use 80°F as the calculating temperature. Unlike insects, rodents are warm blooded and do not require increased dosages at lower temperatures.

²More than one fumigation may be needed to control the infestation after egg hatch.

For fumigation to control rodents, use sufficient gas to accumulate at least 36 ounce-hours following equilibrium, regardless of ambient air temperature. Refer to the Structural Fumigation Manual for Vikane.

Software versions of the Vikane Fumiguide® Calculator are available for use on various devices and platforms. Contact Douglas Products or your distributor of Vikane for information on how to obtain the Fumiguides.

Posting of Fumigated Areas

The following is a baseline of requirements for warning signs to be posted for fumigations using Vikane® gas fumigant. States that currently have requirements that are comparable to the elements listed here, can maintain those requirements for warning signs. Additional elements imposed by states may also be added to these warning signs.

1. The applicator must post the fumigated areas with warning signs with a white background stating the following:
 - a. The signal word DANGER/PELIGRO at a minimum height of 2 inches, the SKULL and CROSSBONES symbol at a minimum height of 1 inch, and the statement "Area under fumigation, DO NOT ENTER/NO ENTRE" all printed in one or more colors contrasting with the white background.
 - b. The date of fumigation.
 - c. Brand name of fumigant used (minimum height 1/2 inch).
 - d. Name, address, and telephone number of the applicator, or company performing the fumigation.
2. Information on warning signs must remain legible and visible for the duration of the fumigation and aeration periods.
3. Warning signs must be placed on the structure at or near all doors and entrances.
4. On tented structures, additional warning signs must be placed on the outside of the tarp so that they are clearly visible from all accessible sides, and from any direction from which the site may be approached.

Only a certified applicator may authorize removal of placards, and only when the concentration of Vikane within the structure where individuals typically stand, sit or lie down, is 1 ppm or less.

Introducing the Fumigant

Release the fumigant from outside the structure, tarp, or vehicle. The release point(s) should be into a large open space(s) in the fumigation site(s). Release the fumigant through a suitable leak-proof tube with a minimum burst pressure of 500 pounds per square inch (psi). Direct the fumigant into the blast of air from a fan(s) having a capacity of at least 1,000 cubic feet per minute (cfm) for each pound of Vikane released per minute. Damage to household materials can occur if insufficient fan capacity is used for the rate of Vikane released. It is recommended that protective sheeting, such as polyethylene plastic under the shooting stand, shooting hose, and shooting fan be used to further protect floors during application. **To prevent damage, do not apply fumigant directly to any surface.**

Aeration and Reentry

Structures

No one is allowed in treated areas if the level of Vikane is above 1 ppm unless provided with a NIOSH or MSHA approved positive-pressure self-contained breathing apparatus (SCBA, not SCUBA) or combination air supplied/SCBA respirator such as manufactured by Ranger, Survivair, Scott, or MSA. **Note: During the initial aeration procedure, approved respiratory protection must be worn until the concentration of Vikane is confirmed not to exceed 1 ppm.** Confirm concentration of sulfuryl fluoride of 1 ppm or less with a clearance device. Refer to EPA's website at Sulfuryl Fluoride | US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices. Since clearance devices give immediate readings, respiratory protection is not required when clearing with these instruments after having completed the initial aeration procedure. If a reading indicates levels in excess of 1 ppm, leave the affected area immediately.

Aeration of Residential Structures

A residential structure is where people typically live (temporarily or permanently) and sleep, such as single-family residences, mobile homes, apartments, townhouses, condominiums, hotels, motels, assisted care facilities, nursing homes, hospitals, barracks, and dormitories.

Preparation

Prepare for Aeration Procedures 1 and 2 by doing the following:

- Open all operable attic doors and accesses and direct a fan into the attic.
- Position introduction and circulation fans to provide for air circulation throughout the fumigated space. For example, a circulation fan in the hall could be used to aid air circulating in bedrooms and bathrooms.
- Use a minimum of one fan of at least 18 inches in diameter for every 22,500 cubic feet of space to be fumigated.

Select the appropriate procedure based on the fumigation rate:

All residential structures² fumigated at 16 oz/MCF (1000 cubic feet of gas) or less may be aerated using Aeration Procedure 1 or 2.

All residential structures fumigated at concentrations greater than 16 oz/MCF must be aerated using Aeration Procedure 2.

Aeration Procedure 1

These steps must be completed in sequence.

Step (1): Aerate structure with all operable windows and doors open, aided by the use of at least one fan (of at least 18 inches in diameter) for every 22,500 cubic feet of fumigated space for a minimum of 2 hours following the directions in the Preparation section. If the structure has an attached garage, the door between the garage and structure should be open. If the structure has a central air system, turn on only the fan (or blower) for each operational unit. As an alternative, a circulation fan may be placed in front of a furnace inlet to blow air into central heating and cooling ducts. Removal of all chloropicrin evaporation containers from the fumigated space during Step (1) will aid in the dissipation of the warning agent from the structure.

Step (2): Secure structure and do not allow reentry for a minimum of 12 hours from the start of aeration (first opening of the seal) for residential structures.² During this time structures must remain posted with warning signs.

Step (3): After the minimum 12-hour waiting period in Step (2), measure the concentration of Vikane in breathing zones of each room with a clearance device. If the concentration of Vikane is greater than 1 ppm, ventilate structure with operable doors and windows open and confirm concentrations are 1 ppm or less before the structure is reoccupied. Refer to EPA's website at Sulfuryl Fluoride | US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices.

Aeration Procedure 2

These steps must be completed in sequence.

Step (1): Aerate structure with all operable windows and doors open, aided by the use of at least one fan (of at least 18 inches in diameter) for every 22,500 cubic feet of fumigated space, for a minimum of 2 hours following the directions in the Preparation Section. If the structure has an attached garage, the door between the garage and structure should be open. If the structure has a central air system, turn on only the fan (or blower) for each operational unit. As an alternative, a circulation fan may be placed in front of a furnace inlet to blow air into central heating and cooling ducts. Removal of all chloropicrin evaporation containers from the fumigated space during Step (1) will aid in the dissipation of the warning agent from the structure.

Step (2): Secure the structure and do not allow reentry for the minimum number of hours as listed in the **Table 1. Determining Minimum Hours of Aeration Time Based on Initial Concentration of Sulfuryl Fluoride Introduced**, from the start of aeration (first opening of the seal) for residential structures.² During this time the structure must remain posted.

² A residential structure is where people typically live (temporarily or permanently) and sleep, such as single-family residences, mobile homes, apartments, townhouses, condominiums, hotels, motels, assisted care facilities, nursing homes, hospitals, barracks, and dormitories.

Table 1. Determining Minimum Hours of Aeration Time Based on Initial Concentration of Sulfuryl Fluoride Introduced

Initial Concentration of Sulfuryl Fluoride Introduced (ounces per-thousand cubic feet)	Minimum Hours of Aeration Time**
Greater than 16 to 32	14
Greater than 32 to 48	16
Greater than 48 to 64	18
Greater than 64 to 96	20
Greater than 96 to 112	22
Greater than 112	24

**When the high ambient temperature for the aeration period is below 40°F at the fumigation site, a minimum of 24 hours of aeration is required.

Step (3): After the minimum waiting period in Step (2), measure the concentrations of Vikane® gas fumigant in breathing zones of each room with a clearance device. Refer to EPA's website at Sulfuryl Fluoride | US EPA (<https://www.epa.gov/ingredients-used-pesticide-products/sulfuryl-fluoride>) for more information and a list of effective clearance devices. If the concentration of Vikane is greater than 1 ppm, ventilate structure with operable doors and windows open and confirm concentrations are 1 ppm or less before the structure is reoccupied.

Refer to Chapters 10 and 11 of the Structural Fumigation Manual for Vikane for aeration procedures for non-residential structures, including passenger railcars, fumigation chambers, vehicles, vessels (surface ships), containers, and tarped stacks. Do not reoccupy the fumigation site, i.e., building, ship, vehicle, or chamber, or move the vehicle until aeration is complete. Warning signs must remain posted until aeration is determined to be complete.

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