

Sulfuryl Fluoride Fumigation Safety

History of SF Gas Fumigant

- Sulfuryl fluoride (SF) developed as Vikane* for structural fumigation in 1950's.
- Dow focused on structural market with SF and commodity market with MeBr.
- With Montreal Protocol and MeBr phase out, SF investigated for postharvest fumigation.

What's Covered

- First Aid
- Transport
- Storage
- Sealing
- Secondary locks
- Placarding
- Command Center

Precautionary Information and First Aid

Toxicity Classification

- Restricted Use Product Due To Acute Inhalation Toxicity
- For sale to and use only by certified applicators trained in the use of the product

First Aid

- In all cases of overexposure, when symptoms such as those below get medical attention immediately.

N = Nausea

S = Slowing of Movements

A = Abdominal Pain

N = Numbness in Extremities

D = Difficulty in Breathing

First Aid – 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. Get medical attention.**

First Aid – If Liquid on Skin or 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. Get medical attention.**

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.**
- **Liquid ProFume® in the eye may cause damage due to refrigeration or freezing.**
- **Call a poison control center or doctor for treatment advice.**

Emergency Response

- **In case of emergency endangering health or the environment call:**

1-800-992-5994

Protective Clothing For Introduction

- Protective clothing must be worn when introducing or around any lines containing fumigant under pressure:
 - Splash Resistant Goggles or Full Face Shield
 - Long-sleeve Shirt, Long Pants, Shoes, and Socks.
- Do not wear gloves or rubber boots!

General Information

Two persons trained in the use of an SCBA, at least one being an applicator licensed/certified by the state, must be present on site at all times during:

- Introduction of fumigant,
- Reentry prior to aeration,
- Initiation of the aeration procedure,
- Testing for reentry after aeration (if aerated in an enclosed space). *

General Information

- No one shall be in fumigated areas if the level of ProFume® is above 1 ppm unless wearing a SCBA.
- When in the fumigated area during the aeration procedure, SCBA must be worn until concentration of ProFume is confirmed ≤ 1 ppm with an approved monitoring detection device.

General Information

- Only an approved detection device of sufficient sensitivity (LOD <1 ppm), such as:
 - INTERSCAN gas analyzer
 - SPECTROS
 - ExpolIR
 - MIRAN vapor analyzer.

Fumigation Preparation

Preparation for Fumigation:

- "Turn off or unplug all electrical heating elements such as those in heaters, dryers, etc., *that represent a reasonable risk of a heat source that is at or near 752°F.* "
- Allows for the use of heaters in a fumigation that do not represent a risk.
- All flames, including pilot lights, must be extinguished.
- Contact local gas company regarding natural gas shut-off if applicable

Preparation for Fumigation

- All persons, non-target animals, and desirable growing plants must be removed from the space to be fumigated.
- Do not fumigate food products that are not listed on the label or in the federal register. All drugs (and tobacco) and medicinals need to be removed prior to fumigation.
- Do not exceed residue limits of those commodities exposed during fumigation...check 40 CFR part 180 and follow label instructions.
- Any food or feed in rigid plastic, glass, or metal containers with the original manufacturer's airtight seal intact can remain in the space to be fumigated.

- Seal adequately around doors, windows, vents, and other openings.
- Use only materials that effectively confine ProFume®, such as a vinyl coated nylon or polyethylene sheeting of at least 4 mil thickness. All seams must be sealed.

Equipment Preparation

Connected Areas

- Any occupied connected area must be vacated during the fumigation process - unless it is isolated from the space to be fumigated by methods that prevent passage of the fumigant from the space to be fumigated into the connected area.
- When it is necessary to vacate areas that have been isolated, that area shall be considered as a fumigated space, and all applicable rules, regulations and label instructions apply, such as preparation, posting, securing, and aeration.

Connected Areas

- ProFume concentrations must be measured during the fumigation in any occupied connected space or structure until ProFume concentrations are ≤ 1 ppm
- Note: Connected areas must be vacated if required by state laws or regulations.

Securing the Structure

- A Locking device or barricade must be used on all exterior doors/doorways.
- Must be demonstratively effective in preventing an exterior door or doorway from being opened using normal opening or entering processes by anyone other than the certified applicator.
- Required even if guarded.

Posting Fumigated Areas

Post-Application Operations

1. Provide watchmen *when you cannot otherwise secure the fumigation site from entry* (e.g., by secondary locks, barricades, etc.) by unauthorized persons during the aeration process.

Note:

- Cannot completely abandon a fumigated space during the entire aeration period

Command Site Purpose

Three key purposes for command site:

- Communication Center
- Equipment Control Center
- Monitoring/Data Collection Point