

Fumigation Management Plan

Version 6.1, Methyl Bromide, Phosphine and ProFume®

Master Fumigation Management Plan (FMP)

A Fumigation Management Plan (FMP) is an organized, written description of the required steps involved to help ensure a safe, legal, and effective fumigation. It will also assist you and others in complying with pesticide product label requirements. Before any fumigation begins, carefully read and review the label and the Applicator's Manual. This information must also be given to the appropriate company officials (supervisors, foreman, safety officer) in charge of the site. Preparation is the key to any successful fumigation. The success of the fumigation is not only dependent on your ability to do your job but also upon carefully following all rules, regulations, and procedures required by governmental agencies. THE USE OF FUMIGANTS MAY BE PROHIBITED AT VARIOUS SITES, REFER TO THE LABEL FOR ANY RESTRICTIONS.

Preliminary Planning & Preparation

A Fumigation Management Plan is required TO BE COMPLETED PRIOR TO, AND for each type of fumigation application. If you perform multiple or daily fumigations of the same type, copies of pages 6 & 7 can be used for efficacy and worker/public safety monitoring, and filed with the "Master" FMP (Pages 1-5). Monitoring must be performed periodically, with a minimum of at least once per day. Some situations may require more frequent monitoring (or even continuous monitoring) depending upon the potential for exposure. Efficacy monitoring is mandatory, and must be documented (Phosphine only). If you have any questions re: FMP's, please contact Cardinal Professional Products at 1-800-548-2223.

What is the purpose of the fumigation?

- Elimination of insect infestation
- Elimination of vertebrate pests
- Plant or insect pest quarantine
- Other: (explain)

For ProFume, specific target pest(s):

High Dose Low Dose User Defined

What type of fumigation is it?

- Space: tarp, mill, warehouse, food plant or other
- Vehicle: railcar, truck trailer, van, container
- Commodity: raw agricultural or processed foods or non-food
- Type of Storage: vertical silo, farm storage, flat storage, etc.
- Vessel: ship or barge; Read U.S. Coast Guard Regulation 46CFR 147A
- Rodent Burrow (aluminum phosphide only, see separate Rodent Control FMP)
- Other, Describe:

Commodity to be fumigated:

Area to be fumigated:

Is the enclosure suitable for fumigation?

Has area been previously fumigated? Is there an existing FMP from a previous fumigation?

Changes to the structure, leak points & adjacent occupied buildings

- Yes. If not then do not fumigate and consider alternate treatment strategies
- No, has never been fumigated before, or when last treated, a FMP was not required
- Yes, was previously fumigated, and the FMP has been reviewed
- Yes, previous records have been reviewed. Any changes have been incorporated into this FMP

Describe fumigation enclosure construction materials:

Construction material:
Design of structure:
Approximate age of structure:
Fire or combustibility issues
Connected structures
Additional information:

Previous treatment history:

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Diagram of Fumigation Enclosure

Fully describe the fumigation structure, and draw a diagram, including adjacent buildings and critical areas nearby. Denote features, hazards, structural characteristics about the structure to be fumigated. Check, mark and prepare the points of fumigation application locations if the job requires entry into the structure for fumigation. Apply ProFume® from outside of the structure. Also use this diagram to detail the monitoring plan (when applicable). Note monitoring points for efficacy and safety monitoring for workers, bystanders and nearby occupied structures (when applicable). For methyl bromide (MB), indicate where the treatment and aeration buffer zones are in relation to the fumigation enclosure.



Accessibility of utility service connections	Show on Diagram	Location of Command Center (ProFume®)	Show on Diagram
Emergency shut-off stations for electricity, water and gas	Show on Diagram	Location of ProFume® cylinders	Show on Diagram
Nearest telephone or other means of communication	Show on Diagram	Location of introduction/monitoring lines (MB & ProFume®)	Show on Diagram
Application points if the structure/enclosure is entered for application	Show on Diagram	Connected and/or nearby occupied structures	Show on Diagram
Off-site meeting area in case of emergency	Show on Diagram, or note here for description of location:		

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Persons who routinely enter area to be fumigated
(employees, visitors, customers, etc.)

List of people:	Pesticide Notification
	CCR Title 3, Division 6, Sect. 6618
	Date Notified:
	Oral Notification yes no
	Written Notification yes no

Name and phone numbers of company officials:

Names	Phone #'s (day & night)

Emergency phone numbers of local health, fire, police, hospital, etc.:

	Agencies Notified: (Local Requirements)				
	Police:	Date:	Time:	Other:	
	Fire:	Date:	Time:	Date:	Time:

Emergency Response Plan:

Methyl Bromide "Information for Neighbors"

Procedures developed for local authorities to notify nearby residents in case of emergency, consult with owners if available.

Description of procedures: For methyl bromide, procedures & appropriate safety measures for nearby handlers & public personnel who will be in and around the area during fumigation & aeration. Consult w/owners and appropriate employees.

Reviewed Emergency Response Plan with employees
 Instead of monitoring around nearby structures, the information was provided to neighbors per label requirements.
 Procedures developed to notify nearby residents in case of an emergency. For Methyl Bromide: monitoring must occur between the buffer zone and structures within 50' of the buffer zones unless using the "Information for neighbors"

Length of time for **entire fumigation period**, including exposure, aeration, and clean up time

_____ Hours of Fumigant Exposure Period (minimum)
 _____ Hours of Aeration
 _____ Hours of Clean Up Time
 _____ Total Hours

Special aeration requirements

Cleanup requirements, including dry or wet-deactivation methods, equipment, and personnel needs, if necessary

If Fumigating a Truck Trailer (piggyback), rail car or other:
(For In-Transit Fumigation, excluding Methyl Bromide & ProFume®)

Verify that training has been offered to receiving company
 Verify that written notice has been given to receiver along with the Applicators Manual

Review & offer FMP, any prior FMP, Applicator's Manual and SDS with company officials and appropriate employees & handlers
Check appropriate documents reviewed:

FMP reviewed
 Label/Applicator's Manual reviewed
 SDS reviewed

Treatment buffer zone (distance from enclosure)

Aeration buffer zone (distance from enclosure)

	Feet	Parameters used to determine:
	Feet	Parameters used to determine:

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Application:

Product Used:

<input type="checkbox"/>	Phostoxin pellets & tablets	EPA Reg. No. 72959-4 Tablets, 72959-5 Pellets
<input type="checkbox"/>	Phostoxin Pre-pacs	EPA Reg. No. 72959-8 Prepac Rope, 72959-9 Prepac Tablets
<input type="checkbox"/>	Fumi-Cels/Fumi-Strips	EPA Reg. No. 72959-6
<input type="checkbox"/>	Magtoxin Pre-pac Spot Fumigant	EPA Reg. No. 72959-7
<input type="checkbox"/>	Fumitoxin pellets & tablets	EPA Reg. No. 72959-1 Tablets, 72959-2 Pellets
<input type="checkbox"/>	ECO2FUME®	EPA Reg. No. 68387-7
<input type="checkbox"/>	VAPORPH3OS®	EPA Reg. No. 68387-8
<input type="checkbox"/>	ProFume®	EPA Reg. No. 62719-376
<input type="checkbox"/>	Cardinal Methyl Bromide 100	EPA Reg. No. 8536-15
<input type="checkbox"/>	Cardinal Methyl Bromide Q	EPA Reg. No. 8536-29
<input type="checkbox"/>	Meth-O-Gas 100	EPA Reg. No. 5785-11
<input type="checkbox"/>	Meth-O-Gas Q	EPA Reg. No. 5785-41

Rate of Application

Introduction line specifications (ProFume®)

Commodity Temperature or Ambient Temperature

Humidity or Commodity Moisture

Wind Speed

Volume of the Structure (cubic footage)

Rate:	
Specs:	Fan Specs: (for ProFume®)
Temperature:	
Humidity or Moisture:	ProFume® cylinder temp or pressure:
Wind Speed:	
Volume:	

Sealing Procedure:

NOTE: If flooring upon where commodity rests is of porous material (wood, or other porous material) it must be repositioned onto poly prior to covering for fumigation (phosphine only)

List sealing procedures and methods: (If building or structure has been treated before, review previous FMP)

Fumiguide Software Program utilized (ProFume)

Title of file: _____

Check for obvious or hidden leakage points that may allow for passage of fumigant from the fumigation enclosure to the exterior or to occupied structures (e.g., conduit, ducts, vents, etc.)

Check with Facility Manager; Mark on Diagram, Pg. 2

Name of Facility Manager: _____

Turn off all electrical lights and non-essential motors in the fumigation enclosure

Notes: _____

Warning Signs posted at all entries and at least each side of the fumigation enclosure confirmed by the certified applicator (MB)

Minimum Exposure Period:

Warning signs with EPA Reg. No., protected from weather
Warning signs posted at each entry
Minimum Exposure Period:

Other Tasks:

<input type="checkbox"/>	FMP, Label/Applicator's Manual and SDS available
<input type="checkbox"/>	Emergency Response Plan reviewed
<input type="checkbox"/>	Documented training of all applicators and handlers
<input type="checkbox"/>	Minimum of two applicators (for Phosphine: only if entering structure)
<input type="checkbox"/>	Confined Space Entry Compliance
<input type="checkbox"/>	All Safety Equipment Available: List the equipment:

Personnel:

Confirm in writing that all personnel in and around the structure and/or area to be fumigated have been notified prior to application of the fumigant. Use a checklist showing that each employee has received notification and attach to FMP.

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Personnel Continued:

*If containers are opened inside the structure to be fumigated, air monitoring must be conducted to ensure worker's exposure to phosphine gas does not exceed the TWA of 0.3 ppm, or the fifteen minute STEL of 15 ppm

- Instruct all fumigation personnel to read the Applicator's Manual concerning the hazards that may be encountered, the selection of personal protective equipment (PPE), including detection equipment
- Confirm that all personnel are aware of and know how to proceed in case of an emergency response reporting
- Instruct all personnel on how to report any accident and/or incidents related to fumigant exposure. Provide a telephone number for emergency response reporting
 Name of Responsible Person: _____ Phone Number: _____
- Instruct all personnel to report to proper authorities any theft of fumigant and/or equipment related to fumigation
- Establish a meeting area (off-site) for all personnel in case of an emergency, and mark on Diagram or list the location here:
- Only persons directly involved in the fumigation may enter the area under fumigation, unless it has been determined that phosphine concentrations are at or below 0.3 ppm, or Methyl Bromide and ProFume® at or below 1 ppm. It is recommended that you use real-time monitoring devices, such as the Draeger Pac III, microPac, or similar phosphine monitors. For ProFume®, use the Interscan or Spectros IR detector. For Methyl Bromide use real-time detector with 0.5 ppm sensitivity e.g.: ToxiRae (Industrial Hygiene Version Only), IST or PureAire.

Description of Monitoring Equipment:
(Describe equipment used and any limitations)

Special Notes:

RESPIRATORY PROTECTION MUST BE AVAILABLE FOR ALL APPLICATIONS, INCLUDING APPLICATIONS FROM OUTSIDE THE AREA TO BE FUMIGATED. IF APPLICATION IS TO BE CONDUCTED FROM WITHIN THE STRUCTURE, MONITORING FOR PERMISSIBLE LEVELS MUST BE CONDUCTED AND RECORDED.

Fumigation Management Plan Prepared By:
 Licensed Applicator: (For application)
 Company:
 Date:
 Phone Number:

License #:

Note any spills, equipment failures and other emergencies:

Description of what happened:
 Emergency procedures followed:
 Was the incident reported to the state lead agency or other agency (if required):
 Contact information for the person filing the complaint:
 Description of control measures or emergency procedures followed after the complaint, if any

Record of complaints related to the fumigation received by the applicator during or after the fumigation must include:

For monitoring fumigations, use pages 6 and 7 for individual or daily applications and attach or keep in a file with the Master FMP (Pages 1-5)

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Fumigation Monitoring: Efficacy and Worker/Public Safety

For multiple fumigation applications, Make copies of Pages 6 & 7 and attach to the Master FMP (Pages 1-5). Worker exposure and aeration monitoring must be performed for every application, or at least on a daily basis and documented. Each fumigation may have different monitoring requirements. Efficacy monitoring is required for Phosphine fumigants and highly recommended for other fumigants.

Post Application: Application & Efficacy Monitoring

Monitoring Log: (During Application and Exposure Period)

Monitoring: Monitoring is necessary for efficacy

Monitor periodically during the exposure period to assure gas concentrations are maintained for efficacious control

Note: Efficacy monitoring is mandatory, readings must be documented (phosphine only)

Description of Monitoring Plan and Monitoring Equipment Used:

Appropriate monitoring equipment available and confirmed by certified applicator, or a person under his/her supervision (MB)

	Efficacy Monitoring	Readings (ppm)
	Monitoring Date:	
	Monitoring Time:	
	Location in structure:	
	Efficacy Monitoring	Readings (ppm)
	Monitoring Date:	
	Monitoring Time:	
	Location in structure:	
	Efficacy Monitoring	Readings (ppm)
	Monitoring Date:	
	Monitoring Time:	
	Location in structure:	

If re-entry is necessary before aeration commences, respiratory protection must be worn, or remote monitoring must be used before entry to the fumigation enclosure. Phosphine readings must be at or below 0.3 ppm (the TLV/PEL for phosphine), or below 1.0 ppm for ProFume® & Methyl Bromide

Application Date:	Monitor Concentrations During Application:			
Application Time:	Time:	Reading:	Time:	Reading:

Efficacy Monitoring	Readings (ppm)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (ppm)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (ppm)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (ppm)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Post Application: Worker & Public Safety

Watchmen provided when structure cannot be secured; Watchmen have received training

Monitoring Log: Monitoring of fumigant concentrations must be conducted in areas to prevent excessive exposure and to determine where exposure may occur. Document where monitoring will occur. Show on Diagram on Page 2.

Document even if zero readings

Detection Equipment Used:

	Worker & Public Safety Monitoring	Readings (ppm)
	Date:	
	Time:	
	Location:	
	Worker & Public Safety Monitoring	Readings (ppm)
	Date:	
	Time:	
	Location:	

If levels above 0.3 ppm (phosphine) or 1.0 ppm ProFume® & Methyl Bromide corrective actions must be taken.

List corrective actions:

Note: Worker exposure monitoring is mandatory
Note: Only workers related to fumigation can re-enter fumigation area during the exposure period unless it has been determined that gas concentrations are at or below 0.3 ppm (phosphine), 1.0 ppm (ProFume® & Methyl Bromide)

Worker & Public Safety Monitoring	Readings (ppm)
Date:	
Time:	
Location:	

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Post Application: Worker & Public Safety (continued)

For methyl bromide, an appropriate exterior monitoring plan that will conform with the requirements of the treatment and aeration area buffer zones to ensure that nearby handlers and bystanders are not exposed to levels above the allowed limits during fumigation and aeration and consult with owners, if available.

Worker & Public Safety Monitoring	Readings (ppm)
Date:	
Time:	
Location:	

Worker & Public Safety Monitoring	Readings (ppm)
Date:	
Time:	
Location:	

Aeration Commencement:

Give a complete description of aeration procedures here:

List corrective procedures in case of over-exposure to bystanders

<input type="checkbox"/> Certified Fumigator Available	
<input type="checkbox"/> Temperature at aeration commencement:	
Licensee:	
License Number:	
Date:	
Time:	
Fans Utilized	Type:
Aeration Monitoring (Offsite/downwind)	Readings (ppm)
Date:	
Time:	
Location:	
Aeration Monitoring (Offsite/downwind)	Readings (ppm)
Date:	
Time:	
Location:	
Aeration Monitoring (Offsite/downwind)	Readings (ppm)
Date:	
Time:	
Location:	

If vacuum chamber, note the number of air washes used:

	Air washes
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Final Aeration:

Note: Slow off-gasing, or desorption from the fumigated commodity or fumigation enclosure may occur. Extra time may be necessary for proper aeration.

<input type="checkbox"/>	Level of phosphine is 0.3 ppm or below, ProFume® or Methyl Bromide level is at or below 1.0 ppm
<input type="checkbox"/>	Level of phosphine in warehouses/storage areas containing fumigated commodity is below 0.1 ppm for 48 hours (recommended by CDPR Worker Health and Safety)
<input type="checkbox"/>	Level of carbon dioxide is 5000 ppm or below (when using ECO2FUME)
<input type="checkbox"/>	Remove warning placards
<input type="checkbox"/>	Inform employees that area is clear and allow re-entry
<input type="checkbox"/>	Final aeration readings taken by:
Date:	
Time:	
Licensee or Trained Applicator (phosphine)*:	
License Number (if licensed):	

*ProFume® and Methyl Bromide require a licensed applicator for final aeration

REVISIONS TO METAL PHOSPHIDE LABELS EFFECTIVE 2013
 REVISIONS TO METHYL BROMIDE LABELS EFFECTIVE SEPTEMBER, 2016