Fumigation Management Plan
Methyl Bromide

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 THIS FUMIGANT MAY BE PROHIBITED AT VARIOUS SITES, INCLUDING RESIDENTIAL AND PUBLIC FOOD SERVICE FACILITIES. REFER TO THE LABEL FOR ANY RESTRICTIONS.

Preliminary Planning & Preparation

A Fumigation Management Plan is required and must be verified to be accurate **by the certified applicator supervising the fumigation** prior to and for each 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. Some situations may require more frequent monitoring (or even continous monitoring) depending upon the potential for exposure. 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) _____

What type of fumigation is it?

- ☐ Space: tarp, mill, warehouse, food plant or other
- ☐ Vehicle: railcar, truck trailer, van, container **DO NOT FUMIGATE IN TRANSIT**
- ☐ Commodity: raw agricultural or processed foods or non-food
- ☐ Vessel: ship or barge; Read U.S. Coast Guard Regulation 46CFR 147A
- ☐ Quarantine treatment
- ☐ Other, Describe:

Commodity to be fumigated: _____

Area to be fumigated: _____

Is the enclosure suitable for fumigation?

- ☐ Yes. If not then do not fumigate and consider alternate treatment strategies

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

- ☐ 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

Changes to the structure, leak points & adjacent occupied buildings

- ☐ Yes, previous records have been reviewed. Any changes have been incorporated into this FMP

Previous treatment history:	Describe fumigation enclosure construction materials:
	Construction material:
	Design of structure:
	Approximate age of structure:
	Fire or combustibility issues
	Connected structures
	Additional information:

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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. Also use this diagram to detail the monitoring plan. Note monitoring points for efficacy and safety monitoring for workers, bystanders and nearby occupied structures (when applicable). Indicate where the treatment and aeration buffer zones are in relation to the fumigation enclosure. Note any residence or business within 50 feet of the treatment or aeration buffer zones.**

Diagram

Accessibility of utility service connections	Show on Diagram	Location of Command Center	Show on Diagram
Emergency shut-off stations for electricity, water and gas	Show on Diagram	Location of cylinders	Show on Diagram
Nearest telephone or other means of communication	Show on Diagram	Location of introduction/monitoring lines	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:		
Secondary Aeration Location (if applicable)	Show on Diagram		

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Persons who may routinely enter area to be fumigated, treatment buffer zone, or aeration buffer zone
(Please include any occupied structure exceptions, as well as any transit exceptions)

List of people:	

Pesticide Notification (California Only)
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 sho 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.
☐ Proceedures developed to notify nearby residents in case of and emergency. Monitoring must occur between the buffer zone and structures within 50' of the buffer zones unless using the "Information for neighbors" option.

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

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

Special aeration requirements _____

Cleanup requirements, including equipment and personnel needs, if necessary _____

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) _____ Feet Parameters used to determine: _____
Aeration buffer zone (distance from enclosure) _____ Feet Parameters used to determine: _____
Type Of Aeration (circle one)

Active	Passive	Both

(If both, please list the length of time for both portions of the aeration types here)_____

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Application:

Product Used:

☐	Cardinal Methyl Bromide 100	EPA Reg. No. 8536-15
☐	Cardinal Methyl Bromide Q	EPA Reg. No. 8536-29
☐	Meth-O-Gas 100	EPA Reg. No. 5785-11
☐	Meth-O-Gas Q	EPA Reg. No. 5785-41

Rate of Application	Rate:
Commodity Temperature or Ambient Temperature	Temperature:
Humidity or Commodity Moisture	Humidity or Moisture:
Wind Speed	Wind Speed:
Volume of the Structure (cubic footage)	Volume:

Sealing Procedure:

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

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 and confirmed by the certified applicator
Minimum Exposure Period:

☐	Warning signs posted at each entry
☐	Minimum Exposure Period:
☐	Other Locations:

Other Tasks:

☐	FMP, Label/Applicator's Manual and SDS available
☐	Emergency Response Plan reviewed
☐	Documented training of all applicators and handlers
☐	Confined Space Entry Compliance
☐	All Safety Equipment Available: List the equipment:

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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.

☐ 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 on page 2 or list the location here:

☐ Only persons directly involved in the fumigation may enter the area under fumigation, unless it has been determined that concentrations are below 1 ppm

It is recommended that you use real-time monitoring devices with 0.5 ppm sensitivity e.g.: ToxiRae Pro PID (Industrial Hygiene Version Only), IST or PureAire.

Description of Monitoring Equipment:
(Describe equipment used and any limitations)
Calibration date of equipment (if applicable):

RESPIRATORY PROTECTION MUST BE AVAILABLE FOR ALL APPLICATIONS, INCLUDING APPLICATIONS FROM OUTSIDE THE AREA TO BE FUMIGATED.

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

I,_____(certified applicator supervising the fumigation), do hereby verify that all of the information contained in this document reflects current site conditions and is accurate and identifies all elements of the specimen label and manual for the fumigant used.

Signature_____

Date_____ (Must be signed and dated prior to the start of

Note any spills, equipment failures and other emergencies:
Record of complaints related to the fumigation received by the applicator during or after the fumigation must include:

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

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) **Maintain records for two years**

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Fumigation Monitoring: Efficacy and Worker/Public Safety

For multiple fumigation applications, make copies of Pages 6-11 and attach to the Master FMP (Pages 1-5). Worker exposure and aeration monitoring must be performed and documented for every application. Each fumigation may have different monitoring requirements.

Post Application: Application & Efficacy Monitoring

Monitoring Log: (During Application and Exposure Period)

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

Monitoring: Monitoring is necessary for efficacy.
Monitor periodically during the exposure period to assure gas concentrations are maintained for efficacious control

Description of Monitoring Plan and Monitoring Equipment Used:

Appropriate monitoring equipment must be available and confirmed by certified applicator, or a person under his/her supervision

If re-entry is necessary before aeration commences, respiratory protection must be worn, <u>or</u> remote monitoring must be used before entry to the fumigation enclosure to show readings are below 1.0 ppm

Notes:

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

Efficacy Monitoring	Readings (oz/1,000 ft^3)
Monitoring Date:	
Monitoring Time:	
Location in structure:	

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Emergency Preparadness Measures

What emergency preparadness measures will be taken?

Fumigant Site Monitoring ________ Information For Neighbors______ N/A______

If fumigant site monitoring is chosen, please note here the location(s) and frequency of the monitoring to take place

If information for neighbors is chosen, please attach a copy of the handout and list here the method of distribution and the date distribution was done.

Distance of the occupied structure(s) from the treatment area:

Equipment used for real time monitoring:

Please refer to the emergency preparadeness measures section of the label for a full description of the steps necessary

Monitoring must begin within 1 hour of the start of the application and continue until the buffer zone period expires with a minimum of 2 air samples taken at least 1 hour apart every 6 hours during the buffer zone periods.

Notes:

Fumigant Site Monitoring Log (only fill this out when fumigant site

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

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Buffer Zone Entry Restrictions

Are there any buffer zone entry restrictions exceptions? Yes_____ No______
If yes, which exceptions (please check all that apply): Occupied Structure Exception______ Transit Exception______

Please refer to the exception to buffer zone entry restrictions section of the label for a full description of the steps necessary

Notes:

Occupied Structure Exception Monitoring Log (when applicable)

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Location in structure:	Readings PPM
Monitoring Date:	
Monitoring Time:	

Transit exception (when applicable)

Distance of transit location from the treated space:
Estimated length of time the transit is expected to last (not to exceed 30 minutes in any 24 hour period):

Transit is not allowed if horizontal stacks are used.

For structures that have been vacated, persons may not re-enter until one air sample for methyl bromide, taken in the breathing zone on each floor of the structure after the termination of the aeration buffer zone indicates 1.0 ppm or less methyl bromide.

Please list any immediate intervention procedures in case the concentrations of the readings exceeds 1.0PPM:

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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 surrounding the treatment area 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:_____

If levels above1.0 ppm corrective actions must be taken.
List corrective actions:

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

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

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

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 1.0 ppm

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:	

Notes:

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

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

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

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

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Fumigation Handler Work Time Restriction Monitoring

Work to be performed: _____

_____

Will respiratory protection will be used during the work to be performed? Yes _____ No _____ (If yes, then work time restrictions may not apply. Please see label for further instructions)

If so, what respiratory protection will be used? SCBA _____ Cartridge Respirator: _____ **(Only effective up to 5 ppm)**

List of fumigation handlers that will be performing the work:

Monitoring equipment used _____

Initial concentration reading: _____ PPM

Initial Test requires taking 2 samples at least 15 minutes apart. Both sampling results must be less than the 'Maximum Level Allowed Per Test'.
Refer to Table 1. Work Time Restrictions for Maximum Entry Time per continuous 24 hours (time allowed without respiratory protection inside the Treatment Buffer Zone, Aeration Buffer Zone, Treatment Area During Aeration, and Secondary Aeration Location

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Notes:

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

Monitoring Date:	Readings (ppm)
Monitoring Time:	
Location:	

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Aeration Commencement:

☐ Certified Fumigator Available

Temperature at aeration commencement:__________

Licensee:	
License Number:	
Date:	
Time:	

*The aeration period starts at the end of the treatment period and continues until the concentration of methyl bromide is measured to be 5.0 ppm or less **and** the minimum time specified below has elapsed:*
*☐ 4 hours, if using mechanical aeration; **or***
☐ 12 hours, if using passive aeration.

Give a complete description of aeration procedures here:

Aeration Monitoring (Offsite/downwind)	Readings (ppm)	Aeration Monitoring (Treatment area)	Readings (PPM)
Date:		Date:	
Time:		Time:	
Location:		Location:	

Aeration Monitoring (Offsite/downwind)	Readings (ppm)	Aeration Monitoring (Treatment area)	Readings (PPM)
Date:		Date:	
Time:		Time:	
Location:		Location:	

Aeration Monitoring (Offsite/downwind)	Readings (ppm)	Aeration Monitoring (Treatment area)	Readings (PPM)
Date:		Date:	
Time:		Time:	
Location:		Location:	

Aeration Monitoring (Offsite/downwind)	Readings (ppm)	Aeration Monitoring (Treatment area)	Readings (PPM)
Date:		Date:	
Time:		Time:	
Location:		Location:	

If vacuum chamber, note the number of air washes used:__________
(4 air washes minimum are required)

Is a secondary aeration location being utilized? Yes_____ No_____

What type of aeration is being performed? Active_____ Passive_____ Both_____
If active: Fans Utilized________ Type:_____________________

If a secondary aeration location is used, please note that the concentration of methyl bromide must measured to be 5 ppm or less as specified in the Taking Concentration Measurement section of this label, at least ten air exchanges have been completed in the treatment area; and during removal of commodity from fumigation chambers, all aeration fans must continue to run while handlers enter and exit the chamber to remove the

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.

☐ Methyl Bromide level is at or below 1.0 ppm
☐ Remove warning placards
☐ Inform employees that area is clear and allow re-entry
☐ Final aeration readings taken by:

Date:	
Time:	
Certified Applicator:	
License Number:	