

Appendix A: Sample Safety Checklists

Safety Checklist

The following safety checklists will help you organize the many aspects of fumigation. They are organized so that you can photocopy them directly from this manual. This information is general. It does not apply to all fumigants in all situations. You can modify these checklists to meet your specific needs. Some manufacturers provide checklists specific to their products. Use these as well.

Preliminary Planning: A Safety Checklist for Fumigators

- ✓ Draw or locate a sketch of the structure you plan to fumigate. Indicate the layout of the structure, connecting structures, and escape routes above and below ground.
- ✓ If you are in an industrial setting, inspect the equipment. It should be as tight as possible to prevent drafts or leaks. Be sure that production has stopped.
- ✓ Check all spouts, conveyors, conduits, heating ducts, or other possible openings leading from the areas that you plan to fumigate.
- ✓ Record the number and names of everyone who routinely enters the area. Also, note the proximity of other nearby people and animals. Keep children, unauthorized persons, and pets away from the application site.
- ✓ If you plan to treat a commodity, learn about it. Find out its mode of storage and its condition. If possible, obtain a previous treatment history.
- ✓ If you plan to treat a structure, learn about it. What does it consist of – wood, brick, concrete? Note the locations of doors, windows, and dividing walls. Predict airflow patterns.
- ✓ Locate connections and shut-offs for electricity, water, and gas. Find the nearest telephone or communication device.
- ✓ Obtain and have handy telephone numbers for local health, fire, police, and medical emergency services. Know how to contact the parties responsible for the structure and/or commodity you plan to fumigate.
- ✓ ONLY select a fumigant registered by the EPA and ASPB.
- ✓ Read and reread the label. Study the directions and precautions. Review the manufacturer's instruction manual. Make sure the fumigant is approved for the required work (site, commodity, etc.).
- ✓ Check, mark, and prepare (tarp, seal, etc.) the points of application if the job involves spot fumigation.
- ✓ Notify the local health and fire departments, police and security personnel, and the poison control center. Give them the following information: the location, the chemical name(s), the date and time of application, the type of gas mask and other safety equipment required, the fire hazard rating, and literature about the safety measures you plan to use.

- ✓ Inform the occupants of the structure where treatment will occur. Also, notify the occupants of neighboring structures.
- ✓ Arrange for standby equipment and replacement parts. Outline an alternate plan of action.
- ✓ Review the fumigation plan with all workers. Explain the potential hazards to life and property, required safety measures, and emergency procedures.
- ✓ Prepare warning signs to post near treated areas. Arrange for someone to monitor all entrances and exits during treatment.
- ✓ Have first aid equipment (including antidotes and plenty of fresh water) handy.
- ✓ If possible, plan for application from outside the structure.
- ✓ Seal all cracks, crevices, open fireplaces, broken windows, holes, pipes, chutes, and conveyors.
- ✓ When necessary, obtain fans to evenly distribute the fumigant.
- ✓ Preplan how you will ventilate the area after treatment.
- ✓ Identify areas where you can store any excess fumigant(s). Be sure conditions in the storage area match those required by the label.
- ✓ Make sure no open fires, motors, or hot surfaces (heat pipes or electric fixtures) are within the space that you plan to treat.
- ✓ Know how to operate the gas detection devices.

Pre-Application Safety: A Checklist for Fumigators

- ✓ Open all doors and drawers inside the area you plan to treat.
- ✓ Shut off pilot lights and gas lights. Disconnect electrical equipment.
- ✓ Remove plastic covers from mattresses.
- ✓ Remove food, feed, drugs, and medicines or place them in airtight containers. Sealing freezers and refrigerators will NOT prevent fumigant gas from getting inside.
- ✓ Make a final check. Be sure all occupants, pets, fish, and plants have been removed from the structure.
- ✓ Place warning signs at all entrances and exits.
- ✓ Assign someone to observe all entrances and exits.

During-Application Safety: A Checklist for Fumigators

- ✓ Apply all fumigants according to label directions.
- ✓ Apply the fumigant from outside where appropriate.
- ✓ Consider the weather. Delay or cancel outdoor treatments on windy or stormy days.
- ✓ Do not enter the area where fumigant gas is being discharged, except in extreme emergencies.

Post-Application Safety: A Checklist for Fumigators

- ✓ Aerate according to structural limitations.
- ✓ Turn on ventilation fans where appropriate.
- ✓ Before reentering a treated area, use a suitable gas detector to determine the fumigant concentration. Some fumigants do not provide an adequate odor warning. Other areas aerate slowly.
- ✓ Remove warning signs only when aeration is complete.
- ✓ Dispose of or return empty containers per the manufacturer's instructions.
- ✓ When using metal phosphide fumigants, return any unused, solid chemicals to clearly labeled containers. Store them properly.

Personal Safety: A Checklist of Fumigators

To protect yourself and others, be sure you and your *supervisor(s)* always:

- ✓ Know the location of all entrances and exits.
- ✓ Know the location of all fumigant containers and aerating fans.
- ✓ Rehearse the fumigation plan so that each worker knows what to do.
- ✓ Remove all rings, jewelry, and watches as required by the label.
- ✓ Have current health records for all employees. All workers that take part in fumigations must have a physical exam at least once a year. During fumigation, no worker should have a cold or other condition that may impair breathing. Nor should any worker be undergoing medical or dental treatment, unless a physician certifies that they may work with fumigants.
- ✓ Survey workers to make sure they have abstained from alcoholic beverages 24 hours before and will abstain 24 hours after a fumigation job.
- ✓ Instruct all workers about first aid, emergency procedures, antidotes, and decontamination.
- ✓ Work in pairs – especially when entry into a fumigated area is necessary. Stay in sight of one another while inside a treatment area.
- ✓ Report any accidents to your employer or supervisor.
- ✓ Report any signs of illness or physical discomfort, regardless of how minor they may seem. This includes dizziness, diarrhea, nausea, headaches, and lack of coordination.
- ✓ Teach all workers how to select, operate, and maintain protection devices. Warn them about the hazards that they may encounter if the chemicals are misused.
- ✓ Have and use the necessary personal protective equipment (PPE). Know where emergency equipment is located.
- ✓ Make sure there is enough water on site to wash or flush skin and eyes if an accident should occur.

Preliminary Planning: A Safety Checklist for *Raw Commodity* Fumigators

- ✓ Draw or locate a sketch of the structure you plan to fumigate. Indicate the layout of the structure, connecting structures, and escape routes above and below ground.
- ✓ Seal all spouts, conveyors, conduits, heating ducts, pipes, cracks, crevices, broken windows, and other possible openings leading from the areas that you plan to treat.
- ✓ Record the number and names of everyone who routinely enters the area. Note the proximity of other nearby people and animals. Keep children, unauthorized persons, and pets away from the application site.
- ✓ If you plan to treat a commodity, learn about it. Find out its mode of storage and its condition. If possible, get a previous treatment history.
- ✓ If you plan to treat a commodity within a structure, learn about the structure. What does it consist of – wood, brick, concrete? Note the locations of doors, windows, and dividing walls. Check airflow patterns.
- ✓ Study the pest(s) you plan to control. When is it most vulnerable to fumigants? Where are its numbers the highest?
- ✓ Check and adjust all safety and application equipment. Be sure the components can withstand the corrosiveness of the fumigant(s). When applying compressed gas, use pressure-approved components. Seal them tightly.
- ✓ Locate connections and shut-offs for electricity, water, and gas. Test these shut-offs to be sure they are working. Find the nearest telephone or communication device.
- ✓ Obtain and have handy telephone numbers for local health, fire, police, and medical emergency services. Know how to contact the parties responsible for the structure and/or commodity you plan to fumigate.
- ✓ ONLY select a fumigant registered by the EPA and with the ASPB.
- ✓ Read and reread the label information. Study the directions and precautions. Make sure the fumigant is labeled for the required work (site, commodity, etc.).
- ✓ Notify the local health and fire departments, police and security personnel, and hospital. Give them the following information: the location, the chemical name(s), the date and time of application, the type of gas mask and other safety equipment required, the fire hazard rating, and literature about the safety measures you plan to use.

- ✓ Inform the occupants of the structure where treatment will occur. Also, notify the occupants of neighboring structures.
- ✓ Arrange for standby equipment and replacement parts for application equipment and PPE. Outline an alternate plan of action.
- ✓ Review your treatment plan with all workers. Explain the potential hazards to life and property. Identify the safety measures and emergency procedures that are required by the label.
- ✓ Prepare warning signs to post near treated areas. Arrange for someone to monitor all entrances and exits during treatment.
- ✓ Have first aid equipment (including antidotes and plenty of fresh water) handy.
- ✓ If possible, plan for application from outside the structure.
- ✓ When necessary, obtain fans to evenly distribute the fumigant.
- ✓ Preplan how you will aerate the area after treatment.
- ✓ Identify areas where you can store any excess fumigant(s). Be sure conditions in the storage area match those required by the label information.
- ✓ Make sure no open fires, motors, or hot surfaces (heat pipes or electric fixtures) are within the space that you plan to treat.
- ✓ Know how to operate the gas detection devices.
- ✓ Have on hand all the PPE you would need to enter a treated area in an emergency. Check to be sure that this equipment is working properly.

Application Safety: A Checklist for *Raw Commodity* Fumigators

Pre-Application

- ✓ Open all doors and drawers inside the area you plan to treat.
- ✓ Turn off pilot lights and gas lights. Disconnect electrical equipment.
- ✓ Make a final check. Be sure all occupants, pets, and livestock have been removed from the structure.
- ✓ Place warning signs at all entrances and exits.
- ✓ Assign someone to observe all entrances and exits.

During-Application

- ✓ Apply all fumigants according to the directions in the label information.
- ✓ Apply the fumigant from outside where appropriate.
- ✓ Consider the weather. You may need to delay or cancel outdoor treatments on windy or stormy days.
- ✓ Do not enter the area where fumigant gas is being discharged, except in extreme emergencies.

Post-Application

- ✓ Aerate according to structural limitations.
- ✓ Turn on ventilation fans where appropriate.
- ✓ Before reentering a treated area, use a suitable gas detector to determine the fumigant concentration. Some fumigants do not provide an adequate odor warning. Others aerate slowly.
- ✓ Remove warning signs only when aeration is complete.
- ✓ Dispose of or return empty containers per the manufacturer's instructions.
- ✓ When using metal phosphide fumigants, return any unused, solid chemicals to clearly labeled containers. Store them properly.

Personal Safety: A Checklist for Commodity Fumigators

To protect yourself and others, be sure you and your supervisor(s) always:

- ✓ Know the location of all entrances and exits.
- ✓ Know the location of all fumigant containers and aerating fans.
- ✓ Rehearse the fumigation plan so that each worker knows what to do.
- ✓ Remove all rings, jewelry, and watches as required by the label.
- ✓ Have current health records for all employees. All workers that take part in fumigations must have a physical exam at least once a year. During fumigation, no worker should have a cold or other condition that may impair breathing. Nor should any worker be undergoing medical or dental treatment, unless a physician certifies that they may work with fumigants.
- ✓ Survey workers to make sure they have abstained from alcoholic beverages 24 hours before and will abstain 24 hours after a fumigation job.
- ✓ Instruct all workers about first aid, emergency procedures, antidotes, and decontamination.
- ✓ Work in pairs – especially when entry into a fumigated area is necessary. Stay in sight of one another while inside a treatment area.
- ✓ Report any accidents to your employer or supervisor.
- ✓ Report any signs of illness or discomfort, regardless of how minor they may seem. This includes dizziness, diarrhea, nausea, headaches, and lack of coordination.
- ✓ Teach all workers how to select, operate, and maintain protection devices. Warn them about the hazards that they may encounter if the chemicals are misused.
- ✓ Have and use the necessary personal protective equipment (PPE). Inspect PPE for defects. Know where emergency equipment is located.
- ✓ Make sure there is enough water on site to wash or flush skin and eyes if an accident should occur.