
Private Stored Grain Fumigation Manual

Disposal Instructions and Spill and Leak Procedures

In This Chapter

Disposal Instructions

Minnesota Waste Pesticide Collection Program

Residues

The “Wet Method” of Disposal

Spill and Leak Procedures



Part II, Chapter 9: DISPOSAL INSTRUCTIONS AND SPILL AND LEAK PROCEDURES

Learning Objectives:

- ◆ Know how to prepare a pesticide container for disposal.
- ◆ Name who can be contacted for information on pesticide container disposal.
- ◆ Be able to describe the procedure for deactivating fumigant residue.
- ◆ Know where you may dispose of residues.
- ◆ Know how long fumigants can be safely stored.
- ◆ Be able to describe what a safe fumigant storage area would look like and where it would be located.
- ◆ Describe how fumigant spills, leaks, and incidents differ from other restricted use pesticide spills or leaks.
- ◆ Know whom to contact when there is a fumigant leak.
- ◆ Know if, when, and how spilled tablets may be returned to their original containers.
- ◆ Describe how to transport leaked fumigants and affected materials (dirt, grains, etc.) if deactivation is not possible on site.

Disposal Instructions

After you have finished fumigating with phosphine pellets and tablets, you will be left with two things, the phosphine flasks and the spent residue or dust. If your fumigation has been planned properly, you will not have any unspent pellets left in your flask. If you do, there is a definite advantage to storing phosphine compared with other pesticides; it lasts forever if it is stored properly and the flask seal is tight. But there are at least two strong disadvantages to storing phosphine on the farm. Minnesota winters are cold, and most farmers store their pesticides out in the shop or garage where temperatures dip below zero, which is not good for phosphine storage. When phosphine pellets or tablets are exposed to temperatures below zero, the chances of a flash burn when you next open the flask are increased greatly. Always remember to open the flask, whether new or old, outside and pointed away from your face. The second disadvantage is that phosphine is very toxic, and it may not be something you want to have stored on your farm.

“When phosphine pellets or tablets are exposed to temperatures below zero, the chances of a flash burn when you next open the flask are increased greatly.”

Minnesota's Waste Pesticide Collection Program

Empty flasks should be triple rinsed with water and either recycled (they are usually aluminum) or thrown in the garbage. Never bury or burn these containers even if they are empty and rinsed. Flasks that have unspent pellets and tablets in them should be stored properly until they can be delivered to the Minnesota Department of Agriculture's *Waste Pesticide Collection Program*. This program has collection dates planned every year at various locations around the state. Participation is easy since there is no preregistration required, and most pesticide users participate at no cost. The *Waste Pesticide Collection Program* will collect unused portions of aluminum and magnesium phosphide pellets and tablets as well as other unused pesticides and rinsed empty plastic pesticide containers. To find out about collection times and sites in your area, call 1-800-657-3986, or check out the Minnesota Department of Agriculture's website at <http://www.mda.state.mn.us/>.

“Residue or dust... is grayish white in color.”

Residues

Residue or dust that is left after phosphine pellets and tablets react with the air is grayish white in color. If fully spent or reacted, this dust is nonhazardous waste and contains only a very small amount of unreacted phosphide. Sometimes this phosphine dust can be collected. For example, it can sometimes be retrieved from aeration ducts or floors, or sometimes applicators will choose to apply the pellets by spreading them in trays on or near the grain mass. But usually this dust remains inside the grain mass where it has been probed, and it will either blow away in the wind as the grain is augered out of the building or bin, or it will be blown away when the grain is cleaned. If you are able to collect the spent phosphine dust, it is important that you dispose of it properly.

“Never seal spent phosphine dust in a container or in an enclosed area.”

Never seal spent phosphine dust in a container or in an enclosed area. This may allow for a fire or explosion if there is any remaining unspent phosphine. And always collect this dust in a burlap or cotton bag so air can freely move around the dust. If there is a small amount of this dust, between 10-15 pounds, simply spread the dust evenly over the ground in an open area, such as out in the field on a farm or bury the residue. If there is more than 15 pounds of this dust or more, if it is greenish in color (partially spent and still reactive), or if you are in an area where it would not be appropriate to bury or spread the dust, such as on a rental property or within a city's limits, then you must deactivate the material.

The “Wet Method” of Disposal

To deactivate or get rid of either unspent phosphine residues or amounts larger than 15 pounds, the “wet method” is best. In a large bucket or drum, create a solution of 2% low-sudsing detergent to 98% water. Mix about

2 cups detergent to every 10 gallons of water. Stir this mixture constantly while slowly pouring in the dust. After mixing the water and dust completely, this slurry that is created can be poured evenly on the ground if you are in a secluded area. If you are not in a secluded area and it is allowed (you must check first with the city water and sewer departments), this mixture can be left to sit for 36 hours and then poured into a storm sewer.

When you are handling unspent residues that are not completely grayish white in color, it is a good idea to regularly monitor the hydrogen phosphine levels in the air to make sure they are below 0.3 ppm or wear the appropriate respiratory protection. **NEVER dispose of the phosphine dust, spent or unspent, in the garbage or by flushing it down the toilet!**

As with every pesticide on your farm, phosphine flasks should be stored in a dry, well-ventilated area away from heat, and should be locked up. The room or cabinet should also be labeled as a pesticide storage area. This protects your expensive pesticides not only from being stolen, but it also keeps them out of the reach of children, animals, and unsuspecting adults. This lockup should also be in a separate building from the living areas of people and animals. And pesticides should never be stored near feed or other commodities where contamination could occur.

Spill and Leak Procedures

Pesticide spills and leaks are also called “incidents.” Under Minnesota law, an incident involving more pesticide than would be applied to one acre must be reported. Spills or leaks of phosphine are required to be reported only when gas is discharged in a manner that the label does not allow, or when it may cause adverse affects to the environment, workers, or the general public. To report a spill, contact the Minnesota Duty Officer who is available 24 hours a day at 1-800-422-0798. The Duty Officer will connect you to a Minnesota Department of Agriculture Spill Response Specialist who will discuss clean up options and procedures with you. If you are not sure whether a leak or spill needs to be reported, be on the safe side and call anyway to discuss the situation with an expert. See the *Private Pesticide Applicator Training Manual* for more information on reporting incidents.

If a spill or leak is only a couple of minutes old, the label states that you may be able to return pellets and tablets to their original container and reseal it. If the container is damaged, the pellets or tablets can be placed in an empty phosphine flask and resealed or used in the fumigation. If you are not prepared to fumigate, have a damaged container, and don't have another container to place the pellets or tablets in, then you should take the financial loss and immediately deactivate using the wet method. Keeping the pellets or tablets in a container not designed specifically for their storage is very risky as a fire or explosion may occur.

“If you do not know how old a spill or leak is, first ventilate the area, take an air sample, and wear the appropriate respiratory protection while deactivating the pellets or tablets by the wet method.”

If you do not know how old a spill or leak is, first ventilate the area, take an air sample, and wear the appropriate respiratory protection while deactivating the pellets or tablets by the wet method. Then call the Minnesota Duty Officer and report the spill or leak.

It is best to never transport phosphine pellets or tablets unless they are in their original flasks. But if you have a damaged flask, are in an area where you cannot deactivate using the wet method, or if the pellets or tablets have become mixed in with soil, the material can be transported with Minnesota Department of Agriculture approval. The spillage must first be placed in small open buckets and then transported in an open vehicle to a safe uninhabited area. These buckets should be no more than one gallon at the largest and contain no more than one flask per bucket. Once in a safe area, the spillage can be spread out over the ground if it is less than 15 pounds, or deactivated using the wet method.