



**A**lthough most pesticide applicators are quite knowledgeable in the use and handling of agricultural chemicals, they must also be adequately prepared to handle a pesticide spill or any accidental release of a hazardous chemical. The spill may be a minor problem with a leaking container to a major accident such as an equipment malfunction where the contents of a fully loaded spray tank are suddenly released. The inability to respond properly to such an emergency—no matter how minor the problem—could seriously endanger public health and environmental quality.

All users of hazardous chemicals must be familiar with the laws and guidelines governing chemical spills. All pesticide wastes, including spilled material, must be disposed of in accordance with federal, state, and local laws. Two prominent laws are the Resource Conservation and Recovery Act (RCRA) and the Emergency

Planning and Community Right to Know Act of 1986. The RCRA regulates the disposal of hazardous wastes and is administered by the U.S. Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection. The Emergency Planning and Community Right to Know Act establishes procedures for emergency planning preparedness and reporting of specific quantities of stored and spilled hazardous chemicals, including pesticides. This act is administered by the U.S. EPA and the Pennsylvania Emergency Management Agency.

The suggested guidelines in the event of a hazardous chemical spill are included under the “Three C” program: **C**ontrol the spill, **C**ontain the spill, and **C**lean up the spill.

First and foremost, do not expose yourself to the spilled chemical; put on personal protective equipment, including chemical-resistant gloves, before attempting to control the spill. Also, do not attempt to rescue someone in an unknown environment without first properly protecting yourself, or you may be another victim.

**An accidental spill can happen at any time. However, before attempting to control any spill, put on personal protective equipment. By acting quickly to control the flow of the material being spilled, the less damage it can cause.**



## Control the Spill

Act quickly—the sooner the spill is controlled the less damage it can cause. Immediate steps should be taken to control the flow of the material being spilled, regardless of the source. If a one-gallon can on a storage shelf has rusted through and is leaking, a sprayer has tipped over, or a hazardous chemical is leaking from a damaged tank truck, do everything possible to stop the leak or spill at once. For instance, smaller containers up to 55 gallons can be put into larger containers to prevent further release of the chemical. However, stopping larger leaks or spills may not be so simple.

### Get Help

If the spill is large or dangerous, have someone get help. Do not leave the site unattended. The first contact to make in an emergency is the county emergency management office, which can provide or coordinate assistance and regulatory compliance. The office can be contacted by dialing 911 or checking the blue pages in a telephone directory. Have someone alert the state and local police if the spill occurs on a public highway. Contact the Pennsylvania Department of Agriculture (PDA) Regional Office if the chemical is a pesticide or other agricultural chemical. Be sure to have the product label and material safety data sheet (MSDS) available. In certain cases, the fire department may need to be alerted, but be sure to caution them not to wash down the spill until advised to do so. In serious situations, contacting public health officials and the hospital emergency room may be necessary.

An additional source for help is CHEMTREC (CHEMical TRAns- portation Emergency Center). CHEMTREC is a public service provided by the Chemicals Manufacturers Association to supply emergency response information and technical assistance from chemical industry experts for incidents involving hazardous materials. Calls are restricted to emergency assistance only (800-424-9300).

Another very important number to remember is the emergency telephone number found on product labels and on transportation shipping papers. Calls to manufacturers are answered 24 hours per day by people who are prepared to handle pesticide emergencies involving their products.

### Isolate the Area

Rope off the contaminated area; keep people at least 30 feet away from the spill. Avoid contact with any drift or fumes that may be released. Do not use road flares if you suspect the leaking material is flammable. At times, evacuating people that are downwind from the spill may be necessary.

Do not leave the spill site until someone relieves you. Someone should be present at the spill site continuously until the danger is removed, the chemical is cleaned up, and the area is decontaminated.

## Contain the Spill or Leak

At the same time the leak is being controlled, contain the spilled material in as small an area as possible and keep it from spreading. In some situations, a shovel or power equipment may be needed to construct a dam.

Liquid spills can be further contained by spreading absorbent materials such as fine sand, vermiculite, clay, or pet litter over the entire spill. However, a word of caution is needed here.

Avoid using sawdust or sweeping compounds if the material is a strong oxidizer (check the label or MSDS) because such a combination presents a possible fire hazard.

In addition, spill kits contain non selective, universal sorbents packed in

**Contain the spill in as small an area as possible. Here, an absorbent tube is placed around the spill while pet litter is spread on top of the spilled liquid material.**



porous fabric pillows. These pillows and “tubes” can be placed directly on the spill or used to dike around the spill area. Waste disposal also is simplified since the contaminated pillows can be placed into heavy-duty disposal bags without loss of waste material.

The spread of spilled products formulated as dusts, wettable powders, or granular materials can be reduced by lightly misting the material with water or covering the spill with some type of plastic cover. However, if a plastic cover is used, it will be contaminated and should be discarded according to the disposal instructions on the product label.

The most important point to remember is *do not get any spilled material into any body of water*, including storm sewers or drains, no matter how small the spill. If the chemical does contaminate a stream, pond, or any other waterway, contact the Pennsylvania Department of Environmental Protection, the Pennsylvania Fish and Boat Commission, and the Pennsylvania Department of Agriculture immediately. Discharge of chemical substances into waterways also must be reported to the U.S. EPA under the authority of the Clean Water Act.



## Emergency Phone Numbers

911 or Local Emergency Planning Office: \_\_\_\_\_

Local Police: \_\_\_\_\_

State Police: \_\_\_\_\_

Fire Company: \_\_\_\_\_

Ambulance: \_\_\_\_\_

Local Hospital: \_\_\_\_\_

Poison Control Center: 800-222-1222

Regional Pennsylvania Department of Agriculture Office: \_\_\_\_\_

### If the spill gets into a water source:

PA Department of Agriculture \_\_\_\_\_

PA Department of Environmental Protection: \_\_\_\_\_

PA Fish and Boat Commission \_\_\_\_\_

Regional U.S. Environmental Protection Agency: \_\_\_\_\_

### For technical assistance:

Emergency Number from Product Label: \_\_\_\_\_

CHEMTREC: 800-424-9300

### Other:

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## Clean up the Spill

Be sure to wear protective equipment when cleaning up any spill. If absorbent material has not yet been used to control the spill, it must now be spread over the contaminated area. Then sweep it up and place in a steel or fiber drum lined with a heavy-duty plastic bag. Keep adding the absorbent to the spilled area until all the liquid is absorbed.

Once the spill has been cleaned up, decontaminating or neutralizing the area may be necessary. Use a solution of ordinary household bleach in water (approximately 30 percent bleach) or hydrated lime. *Do not use bleach and lime together as this is a hazardous combination.* Work this cleaning material into the spill area with a coarse broom. Then add fresh absorbent material to soak up the now contaminated cleaning solution. This material should be swept up and placed in a plastic bag or drum for disposal. Repeat this procedure as needed to ensure that the area has been thoroughly decontaminated.

Remove absorbent since all saturated materials take on the properties of the chemicals they have absorbed and are then classified as hazardous waste. Disposal of all hazardous wastes generated by the cleanup must be done in strict accordance with state and federal Resource Conservation and Recovery Act laws. If you have a question or problem relating to pesticide waste disposal, contact a Pennsylvania Department of Agriculture Regional Office, a Department of Environmental Protection Regional Office, or the U.S. EPA Regional Office in Philadelphia.

## Soil Contamination

The only effective way to decontaminate soil saturated with a hazardous chemical is to remove the top 2 to 3 inches of soil. This contaminated soil must be disposed of at a proper disposal site. The decontaminated area should be covered with at least 2 inches of lime and then topped with fresh topsoil.

Soils contaminated as the result of application errors or minor spills can sometimes be cleaned by applying activated charcoal to the contaminated surface immediately after the misapplication or spill. The charcoal can adsorb or tie up enough chemical to avoid significant plant injury and long-term contamination. However, applying activated charcoal to areas where large spills have occurred will do little to reduce soil contamination and subsequent plant damage.

## Clean the Equipment and Vehicles

Clean any vehicles and equipment that were contaminated either as a result of the original accident or during the clean-up procedure. Before you begin, however, be sure you are properly clothed and protected to avoid contact with the chemical. Use ordinary household bleach in water (approximately 30 percent bleach) or an alkaline detergent (dishwasher soap) solution to clean your equipment. *Do not mix bleach and alkaline detergent together as this is a hazardous combination.*

Porous material and equipment such as brooms, leather shoes, and cloth hats cannot be effectively decontaminated and must be discarded or destroyed. Also, do not save disposable garments and gloves or badly contaminated clothing. These items should be

properly disposed of immediately after completing the cleanup.

## Prevent Spills

The best way to handle a spill is to prevent it from happening. Evaluate your methods for storing, mixing, loading, and transporting pesticides to identify areas for additional precautions and modifications.

## Storing Pesticides Safely

Select a storage site to minimize the potential for runoff and contamination of surface water or groundwater in case of a spill or leak. The floor in the storage area should have an impermeable surface that is free of cracks. Check containers regularly for leaks, tears, or corrosion. Maintain an inventory of all pesticides stored and keep a copy in at least two separate locations (for example, at the storage facility and at the office). Keep a spill kit at the storage area. For more information, see the Pesticide Safety Fact Sheet *Pesticide Storage and Security* ([pubs.cas.psu.edu/FreePubs/pdfs/uo213.pdf](https://pubs.cas.psu.edu/FreePubs/pdfs/uo213.pdf)).

## Mixing and Loading Safety

Mix on a concrete containment pad to facilitate cleanup and prevent soil and water contamination. Equipment should be checked for leaks, cracked hoses, loose connections, and faulty valves and calibrated prior to use. Do not leave the sprayer unattended when filling. Keep a spill kit in the mixing and loading area.

## Transportation Safety

Vehicle operators should be trained in basic emergency response procedures. Have product labels and MSDSs in the vehicle. Secure pesticide containers from moving during transit. Regularly

inspect sprayer tanks, fittings, lines, booms, and nozzles. Each vehicle transporting pesticides should contain a spill kit. For more information, see the Pesticide Safety Fact Sheet *Transporting Pesticides in Pennsylvania* ([pubs.cas.psu.edu/FreePubs/pdfs/uo217.pdf](http://pubs.cas.psu.edu/FreePubs/pdfs/uo217.pdf)).

## Spill Kit

All the previously mentioned areas include a spill kit, which should be available wherever pesticides are stored or handled. A spill kit can be purchased or easily assembled and should contain the following items:

- Telephone numbers for emergency assistance
- Personal protective clothing and equipment (gloves, footwear, and apron that are chemically resistant; disposable coveralls; protective eyewear; and a respirator)
- Containment “snakes” or “tubes” to confine the leak or spill to a small area
- Absorbent materials, such as spill pillows, absorbent clay, kitty litter, activated charcoal, and vermiculite
- Plastic cover for dry spills
- A spray bottle filled with water to mist dry spills
- “Caution tape” to isolate the area
- A shovel, broom, and dustpan
- Heavy duty disposal bags with ties
- Duct tape—a universal tool
- Sturdy plastic container that will hold the entire volume of the largest pesticide container being handled and that can be tightly closed; can also be used to store the contents of the spill kit
- A permanent marker to write the name of the spilled pesticide on the container

Shown are the materials needed to make up a pesticide spill kit. These items will easily fit into a medium-size plastic storage container.



## Conclusion

Knowing how to handle accidental chemical spills and leaks safely is as important as knowing how to use the material correctly. Individuals using or distributing pesticides and other hazardous chemicals have a responsibility to protect the public and the environment. Knowledge of a few basic guidelines involving hazardous chemical spills and leaks can go a long way toward meeting that responsibility.

## Poison Control Centers 1-800-222-1222

Calling the toll-free National Poison Center hotline above will connect you to the nearest poison center. Pennsylvania residents are served by the Pittsburgh Poison Center and the Poison Control Center in Philadelphia.

Pesticide Safety Fact Sheets are produced by the Pesticide Education Program in Penn State's College of Agricultural Sciences. Topics covered in the series include

- pesticide laws and regulations
- handling chemical spills
- personal protective gear
- pesticides in the environment
- equipment care and cleaning
- pesticide toxicity and health effects

For a complete list of fact sheets and electronic copies or for more information about the Pesticide Education Program, visit [www.pested.psu.edu](http://www.pested.psu.edu) on the Web.

Original text prepared by Winand K. Hock, professor emeritus of plant pathology. Current text updated by Eric S. Lorenz, senior extension associate, Pesticide Education Program. Photos courtesy of Eric Lorenz.

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