

Clemson University Department of Pesticide Regulation

Proper Storage, Sale, and Display of Retail Pesticides

A Guide for Pesticide Retailers, Dealers, and Applicators



Department of

Pesticide Regulation

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Bulletin 4

Proper storage, sale, display, and handling of pesticides assures the safety of employees and customers, saves money, and protects the environment. In South Carolina, the Department of Pesticide Regulation (DPR) regulates activities that relate to the production, storage, sale, and use of pesticides.

We routinely inspect dealerships and retail markets as part of our enforcement activities. During these inspections, establishments are checked for proper storage and display of pesticides and proper product registration.

Several questions should come immediately to mind when considering how to store pesticides safely: How much storage space do I need? Where should storage be located? How should the storage unit or area be constructed? What precautions need to be taken to protect pesticides? What about security? What about protecting ground and surface waters? What about worker safety?

Many products have specific storage requirements. You must be familiar with the label storage requirements of all the different pesticides you expect to store during the season or year.

Storage Space

All pesticides stored in quantity must be stored in securely locked and well-ventilated rooms, well away from all food or feed items. Pesticides should be separated during storage, preferably in bins, depending on the type of pesticide. Each type of pesticide, *i.e.*, herbicides, insecticides, fungicides, etc., must be stored separately from each other. Herbicides may not be stored above other types of pesticides.

Keep the amount of storage space to a minimum to discourage accumulating too many pesticides, but keep it large enough to handle what you might reasonably use. This should include not only newly purchased chemicals, but it should also house opened containers, empty clean containers, and waste pesticides you may hold for proper disposal.

Any pesticide that is leaking or otherwise damaged must be immediately moved to an area where its contents will be fully contained. Any pesticide material that has been spilled must be immediately cleaned up by an appropriate decontamination method. The area where the pesticide has been spilled must also be decontaminated.

Storage Site

Locate your storage site in a safe location--a place that will not be flooded by overflowing rivers, streams, ditches, runoff, or tides. Position your storage above the immediate ground level by at least 12 inches. Moisture is a problem with pesticide storage. Free water and moisture will rust metal containers and disintegrate paper or cardboard packaging. It can make labels unreadable and cause them to detach. Water and moisture can also cause dry formulations to clump or cake, break down, or dissolve and release pesticide, thereby causing pesticide to spread from the storage area to other areas of the structure or away from the structure.



An example of properly stored pesticides.

Storage Tips

- A portable storage building is often best option for storage. These buildings can be easily repositioned in case of flood hazard or change in area use patterns at your operation, especially in the vicinity of the storage area.
- Use tie-downs on portable storage buildings to prevent tipping, rolling, or moving off site because of water or wind.
- Select a site with as little runoff as possible to prevent contamination of surface waters in case of a leak or spill.
- Locate your pesticide storage at least 100 feet (or farther depending on terrain) and down slope from surface waters and wells, animal feeding stations or shelters, food or feed storage, and dwellings. Farther is better!
- Determine the direction of prevailing winds and consider what is downwind from your storage site. This may be a factor in the event of spills or fires.
- Locate your storage site so that it is easily accessible by vehicles for delivery and pick-up of pesticides and to emergency vehicles.
- Consider using barriers such as posts to prevent damage to the storage unit by vehicles delivering pesticides or picking them up for applications.
- Determine and comply with any applicable local zoning and building codes. Many local fire departments require notification of all hazardous material storage.

Physical Construction of the Storage Unit

- Use a separate storage unit made of nonflammable materials.
- The best storage is a detached structure positioned far enough away from other structures that could threaten the storage if they should catch on fire.
- Use sealed floors—metal, sealed concrete, epoxy-coated metal, wood or concrete, no-wax sheet flooring, or some other easily cleaned, non-absorbent material. Dirt or unsealed wood flooring is unacceptable!
- Use non-absorbing materials throughout. The best shelving is metal with a lip. Consider leak proof plastic trays on shelves.
- Have a built-in sump pump or a drain to a sump. Locate any external sump next to the building instead of under it for easy access if you need to remove spilled materials. Protect sumps from filling with water from rain or runoff.
- Have a continuous internal lip or curb 2-4 inches high to prevent spills from overflowing and going outside the building.
- If possible, provide electrical power to the storage unit. This allows for interior lighting, exhaust fans and heaters. It also allows exterior security lighting and alarm. Explosion-proof wiring and switches are best. Light/fan switches should be on the outside of the storage unit and weatherproof.
- Have good lighting. Explosion-proof lighting is best. Good lighting lets you read labeling, note leaks and damaged containers, clean up spills, and record inventory changes.

Storage Environment

- Keep the storage unit dry. All doors and windows to outside must be closed and locked.
- Keep the unit well ventilated by passive ventilation, mechanical ventilation, or both. Locate a louvered vent or exhaust fan high at one end (back) of the unit and an air makeup louvered vent low at the other end, e.g., in the lower part of the door. This allows vapors to flow away from anyone that is entering or inside the storage unit.
- One recommendation for mechanical ventilation is an exhaust fan capable of exchanging air in the unit at least once every six minutes, increasing to every three minutes when pesticide handlers are in the unit. Best operation: wire the fan to the light switch so that the fan is always on or increases speed whenever pesticide handlers are in the unit. If possible, also wire the fan to a thermostat set between 75° and 85° F.
- Keep pesticides from freezing and from extreme high temperatures—most pesticides should be stored at above 40° and below 90° F. Read the label! Freezing can cause containers to burst or develop intermittent leaks. Freezing may cause formulations to separate. Many pesticide labels say, “Store in a cool, dry place.” Some must be stored at temperatures below 90° F. High temperatures can cause plastic to melt or become brittle or glass to burst. Pressure caused by high temperatures may cause intermittent leaks, swelling, or a spill when the product is opened. High temperatures can breakdown some chemicals or cause some chemicals to volatilize. Heat can also cause explosion or fire. Insulate the unit to prevent freezing or overheating. Install a heater. Explosion-proof units are best.
- Keep containers out of direct sunlight. Don't put containers, especially glass or aerosol containers, in windows—even temporarily.

Storage Environment Continued

- South Carolina regulations require that you:
 - have a lockable storage facility.
 - store pesticides separately from food and feeds.
 - store all pesticides separately from other chemicals, such as fertilizers.
 - separate insecticides, fungicides, *etc.*, from herbicides.
 - follow any specific storage separation requirements on the label. Example is the required separate storage for phenoxy herbicides, *e.g.*, 2,4-D. Vapors can cross-contaminate other stored chemicals.
 - keep any food, drinks, veterinary supplies or medications, first aid supplies, clothing, or protective equipment—especially respiratory protection—out of the storage area. These can easily be contaminated by dust, vapors, or spills.
 - promptly contain leaks and decontaminate the affected area.
- As much as you can (you **MUST** if the label so states):
 - store pesticides separately from gasoline and other fuels.
 - store volatile materials separately.
 - store liquid formulations below dry formulations.
 - store any glass containers on the lowest level.
 - store containers off the floor.
 - store empty, clean containers separately from full and in-use containers.
- Keep spill control supplies in the storage unit. Keep cleanup materials on hand, such as cat litter, vermiculite, spill pillows, a broom, a dust pan, activated charcoal, lime, bleach for decontamination, plastic bags, gloves, eye protection, and plastic containers that can be sealed.
- Collect spilled pesticides for possible reuse. Remember that cleanup materials become hazardous waste.
- Update your pesticide inventory. You will need an up-to-date inventory for determining future purchases and in case of spills, fire, weather-related damage or theft. Keep copies at the storage site and filed at the office and with your local emergency response agency. Record serial numbers of all bulk or returnable containers.
- File copies of your storage location map, storage unit floor plan, and current or seasonal inventory in a secure place away from the storage unit. Also have copies with your fire department or other first responders, and with your Local Emergency Planning Committee (LEPC), if required.
- Have a plan! Develop a contingency plan for your establishment with your fire department/rescue unit. Include especially your pesticide storage. In case of a fire in a chemical storage facility, the preferred course of action is to let it burn. Remember, fire fighters are trained to put out fires! Work with these agencies before you need them.
- Fire control—have an ABC fire extinguisher and fire/rescue telephone numbers outside the storage building.
- Keep MSDS sheets in an accessible location.

Storage Security

- Store pesticides in a separate locked storage building.
- Always lock pesticide storage cabinets, closets, rooms, and buildings.
- It's a good idea to fence the storage unit in and lock the gate.
- Limit access to your pesticide storage—allow access only to authorized persons. Take necessary steps to keep out any unauthorized persons such as children, workers who do not use pesticides, visitors, *etc.*
- Consider installing security lighting. You may also want an alarm system.
- If you must store pesticides within a larger structure, have storage access through a separate outside door.
- Post signs on the door, building or fence that indicate pesticide storage and warn people to stay out: "Danger - Pesticides - Unauthorized Persons KEEP OUT." Have this information in a second language such as Spanish.
- Signs should have at least two emergency phone numbers. You should not be the sole contact—in an accident, *you* could be the victim of exposure! At least one phone number should be for emergency response (fire, rescue, *etc.*). Poison Control Center phone numbers are a good additional choice.
- Indicate the location of the nearest accessible telephone.
- Post NO SMOKING signs and do not allow smoking in or near your storage area or facility.

Store your pesticides safely!



Pesticide Display Requirements and Safety Precautions

- All pesticides offered for sale must be in the registrant's approved container with the appropriate labeling from the registrant permanently attached.
- Pesticides must be stored or displayed at a minimum of 25 feet away from all fresh, soft, and loosely packaged food items, such as bread, pastries, potatoes, fresh meats, pasta, and candy.
- All pesticides must be stored at a minimum of four feet away from canned goods or any other type of food or edible item, including animal feed.
- Group chemicals by type to prevent cross contamination. Herbicides must not be displayed in a position above other types of pesticides.
- Any pesticides that is leaking or otherwise damaged must be immediately removed from the display area to a location where its contents can be fully contained. If any material has spilled, it must be decontaminated immediately, and the location on which it has spilled must be decontaminated.
- Secure all pesticide containers to prevent rolling and sliding and to reduce breaking and leaking.
- Protect pesticide bags from puncture, tears, and moisture.
- If packages must be stored outside, use a roof over the storage area and plastic covers for pallets.
- Forklifts may cause damage to packages, so take special care when loading, unloading, and moving pallets.
- Place a kick board around pallet displays on all sides to avoid contact with carts and customer traffic.
- Assign specific employees to check display areas routinely to ensure that there are no damaged packages.
- Purchase quantities of pesticides required for one season of sale to minimize off-season storage.
- Rotate inventory to ensure that the oldest materials are sold first.
- Keep protective clothing and equipment handy for emergency spill cleanup.
- Make a pesticide spill cleanup kit available (shovels, brooms, dust pans, and absorbent materials such as sawdust, kitty litter, or shredded paper) to handle a spill.

Pesticide Dealer Regulations

Federal and state law requires that 1) a pesticide dealer must be licensed in order to sell restricted use pesticides and that 2) he or she must ensure that the purchaser is a properly licensed applicator. In fulfilling the first requirement, you must be licensed as a pesticide dealer to sell, hold for sale, or distribute a restricted use pesticide. In fulfilling the second requirement, you should verify that each purchaser of restricted use products holds a valid certification by either presentation of the license itself or a signed statement authorizing a uncertified person to pick up the material.

Applying for a Dealer's License

A separate individual must be licensed as a dealer at each store or sales location, including multiple sales locations owned by the same person. The dealer licensee is responsible for the actions of every person working under his or her direction. Applicants for a dealer license must pass the 70-question core exam and the 30-question dealer exam with a score of at least 70 percent and pay a license fee of \$50.00. Persons who are already certified as a commercial applicator may obtain a license simply by completing the application and paying the \$50.00 license fee (in addition to the fee for the commercial applicator license). The dealer license expires each year on December 31st, but it can be renewed by taking the exam again by paying the \$50.00 license fee. A 25% penalty will be charged for renewal applications filed on or after January 1st. Licenses that are not renewed by April 1st of the calendar year following their expiration, may not be renewed without the applicant's passing another examination and re-applying for the license.

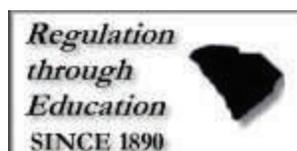
Recordkeeping Requirements

Pesticide dealers must maintain records of all sales or other distributions of Restricted Use Pesticides for a period of two (2) years after the date of such sale or distribution. Records must include, at a minimum, the name and pesticide applicator's license number of the individual to whom the sale or distribution was made. These records must be presented to the Director or his agents for review and duplication upon request at the expense of the Department.

A Note to Remember

Inspectors with the Department of Pesticide Regulation routinely conduct market place and pesticide dealers inspections to determine that only certified applicators are purchasing restricted use pesticides and to determine if pesticides are being displayed, stored, and sold according to state regulations. If you need assistance or have questions about the safe storage, sale, and display of pesticides, please contact your nearest Department of Pesticide Regulation Field Office.

Anderson..... 843.494.2332
Aynor..... 843.957.1727
Beaufort..... 843.255.6060 Ext 111
Charleston..... 843.225.7065
Clemson..... 803.260.1462
Columbia..... 803.736.7680 Ext 112
Florence..... 843.667.1393
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