

Chemical Storage Upgrades

How you store chemicals is just as important as what chemicals you store.

BY JOELLEN LAMPMAN

In every home, garage, maintenance facility, and office, chemicals are found that have the potential to affect human health, air, and water quality. Included in this list of chemicals are cleaning materials, fertilizers, pesticides, oils, fuels, pool chemicals, and others. Even so-called “natural” products pose risks and must be handled according to label instructions.

In the workplace, the first decision affecting chemical storage is choosing what products to use. Base fertilizer selections on soil tests, follow integrated pest management protocol when picking out pesticides, and research what cleaning products will work best in your given situation.

The next decision is how much to purchase. The less material you have to store, the less risk there is to you, fellow employees, and the environment. When possible, purchase only as much as needed, and time your purchases to arrive at about when you plan to use them.

Many of us purchase products that we use on a regular basis, so purchasing them “as needed” is neither cost effective nor efficient. For these products, providing proper storage is the first



Bottles leak. If the leaking chemical lands on a paper bag or box, it can cause a hazardous chemical reaction to occur. When leaking bottles are on wooden shelves, the chemical soaks into the wood, and at the end of its storage life, must be treated as hazardous waste.

step in protecting the environment. The following bullet points focus on the ideal situation for pesticide and fertilizer storage, but the principles can be applied to all chemicals.

STORAGE LOCATION

- Chemicals are stored in a designated chemical storage structure (that meets state or provincial codes), separate from the general maintenance facility, which is secure and has limited personnel access. Signage clearly marks the structure.
- Structure is climate controlled (heated or properly insulated) if chemicals are stored over the winter.
- Structure is well ventilated with powered venting capable of three air exchanges per hour.
- Powered venting is on a timer for automatic venting once per day.
- Structure includes passive venting to outside, where possible.
- Manual switch for fan is located on exterior of building or door.
- Fire safety precautions are in place and a response plan is on file.
- Structure has explosion-proof electrical devices, if needed, or electrical devices on the outside of facility.

- Structure has an impervious floor, such as metal or sealed concrete, that is self-contained.
- Procedure or device (e.g., sump pump) is in place to clean up liquid



In this maintenance facility, the spill kit is located behind large containers and is too high to be removed quickly. Keep spill kits near the entrance and easily accessible in case an accident does occur.



Placing bottles in plastic or metal storage bins is an inexpensive way to create secondary storage.

spills, should they occur. Ideally, floor should be designed to drain to a trough or toward the door to facilitate safe cleanup of spills.

- Structure has emergency wash facilities with adequate soap and water, including eye wash stations, in close proximity.

HOW YOU STORE

- A spill containment kit is readily accessible and easy to open.
- Current Materials Safety Data Sheets for all stored products are readily available.
- Spill containment procedures are posted and written in English (and Spanish/French, if needed).
- Pesticides are stored away from fertilizers and in an area with proper ventilation.
- Pesticides are kept dry and away from activities that might knock over a container or rip open a bag.
- Pesticides are stored off the floor on metal or plastic shelving or, if wooden shelves, have secondary containment (e.g., plastic bin or tray).
- Liquid products are stored below dry products or have secondary containment on the shelf.
- A minimum amount (one season supply) of pesticides is stored.
- Liquid pesticides stored during cold weather require additional consideration. Usually, when a liquid pesticide freezes, the only risk is separation of the active ingredient from the solvents or emulsifiers. However, if the liquid expands upon freezing, the container holding the pesticide may crack or rupture. Avoid having excess pesticides that require winter storage.

For more information, please contact Joellen Lampman, program manager for the Audubon Cooperative Sanctuary Program for Golf Courses. She can be contacted at jlampman@auduboninternational.org. For more information about Audubon International, please visit www.auduboninternational.org.