

## University of Missouri Extension

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# Store Hazardous Products Safely

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## Your home may be an accident waiting to happen

Many preventable accidents, injuries, illnesses and fires occur in homes due to unsafe storage of hazardous products.

A product is considered hazardous if it has one of more of the following properties:

- **Corrosive**  
can burn and destroy living tissues.
- **Flammable/combustible**  
can be easily set on fire.
- **Explosive/reactive**  
heat, sudden shock, pressure or contact with an incompatible substance can cause explosion.
- **Toxic**  
can cause injury or death if eaten, inhaled or absorbed through skin.

You can reduce your family's risks of accidental poisonings, exposure to indoor air pollution and accidental fires by safely storing and using hazardous products in your home.

## Poisonings

Each year, poison control centers receive numerous calls about exposure to household hazardous products such as adhesives, arts and crafts materials, automotive fluids, cleaning substances, moth repellents, paints and pesticides.

Many of these calls concern children who accidentally swallow a hazardous product because it is within their reach, has an attractive color or is in a familiar container.

Exposures also occur among adults. Some accidentally swallow a hazardous product because it is in an unmarked container or improperly stored next to food or medicine. Other exposures can occur among both children and adults due to the improper use, storage or disposal of household hazardous products.

In 1991, the Center for Disease Control estimated that one out of every 10 children under the age of 6 were injured by a household hazardous product to the point where they required information from a poison control center, or treatment by an emergency room, family physician or knowledgeable parent.

In 1991, more than 1.8 million human poison exposure cases were reported to U.S. poison control centers. More than 45 percent of these exposures involved household hazardous products. The total number of exposure cases may be much greater because it is estimated that less than one-third of actual poisonings are reported to poison control centers.

## Indoor air pollution

Excessive amounts of indoor air pollution can result from the unsafe storage of hazardous products. Volatile organic compounds found in many paints, adhesives, solvents and cleaning materials can significantly contribute to indoor air

pollution if the product containers are not tightly sealed or are damaged.

The level of indoor air pollution created by household hazardous products may be especially high in energy-tight homes, where the rate at which outside air replaces indoor air is low. Pollutants have been found in concentrations ten times higher inside the home than in outside air.

Indoor air pollution can cause or worsen illnesses such as allergies, asthma, emphysema and chronic bronchitis. It can also lower a person's resistance to disease.

Indoor air pollution has been ranked the fifth most dangerous health risk for the country by the U.S. Environmental Protection Agency.

## Fire risks

Numerous fires and injuries occur each year when flammable liquids are misused as cleaning agents or are improperly stored next to sources of heat, spark, flame or ignition. These sources include water heaters, light switches, pilot lights and motors. Gasoline is extremely flammable and its vapors can be ignited from a single spark. Even discarded rags soaked in flammables can create fire hazards.

The National Fire Protection Association reports that between 1983 and 1987, gasoline was responsible for an average of 11,300 household fires each year. These fires resulted in an average of 178 deaths and 1,283 injuries each year. Nearly one-quarter of the injuries were caused by the improper use of gasoline as a cleaning agent.

## Identifying household hazardous products

The first step in determining whether your household hazardous products are safely stored is to identify the products and the hazards associated with each product.

You can tell whether a product is hazardous by reading the label. There are two specific sets of federal regulations for labeling hazardous products:

- **Hazardous products other than pesticides**, which can be flammable/combustible, reactive/explosive, corrosive or toxic, are regulated by the Consumer Product Safety Commission (CPSC).
- **Products containing pesticides**, which are designed to be toxic, are regulated by the Environmental Protection Agency (EPA).

When reading the product label, look for the signal word and principal hazard information. The labels on both non-pesticide hazardous products and pesticides must contain the appropriate signal word depending on the hazard associated with each product. See Table 1 for information on signal words and other label requirements.

There are more than 27,000 hazardous products targeted for consumer use. You may be surprised at the number of hazardous products you have in your home. By knowing their hazardous properties, you can determine how to safely store these products.

Table 2 provides a list of commonly used products and the hazardous property(s) associated with each product.

**Table 1**

Signal words

Non-pesticide product label requirements	Danger the product is extremely flammable, extremely corrosive or highly toxic.
	Poison the product is highly toxic.

	Warning or Caution indicates products with lesser hazards.
	Must contain statement "Keep out of reach of children" or its practical equivalent.
	Must contain description of the principal hazards involved in using the product. Words and phrases used to describe these hazards include: Flammable, Corrosive, Vapor harmful, Harmful if absorbed through skin
Pesticide product label requirements	Danger or Poison the product is highly toxic.
	Warning the product is moderately toxic.
	Caution the product is slightly toxic.
	Must contain the statement "Keep out of reach of children" on the front label
	Must contain information on any fire, explosion or chemical hazards the pesticide poses.
	Must contain information on how to avoid the product's hazards.

**Table 2**Common hazardous properties of household products.<sup>1</sup>

Cleaners	Ammonia-based — toxic and corrosive
	Bleach-based — toxic and corrosive
	Drain cleaner — toxic, corrosive and reactive
	Floor wax/stripper — toxic and flammable
	Furniture polish — toxic and flammable
	Oven cleaner — toxic and corrosive
	Spot remover — toxic, flammable and corrosive
	Toilet bowl cleaner — toxic and corrosive
Personal care	Aftershaves — toxic and flammable
	Nail polish — toxic and flammable
	Nail polish removers — toxic and flammable
	Perfume — toxic and flammable
Home improvement	Latex-based paint — toxic
	Oil-based paint — toxic and flammable
	Solvent-based paint stripper — toxic and flammable
	Paint thinner — toxic and flammable
	Stain and varnish — toxic and flammable
Automotive	Antifreeze — toxic
	Auto battery — toxic and corrosive
	Auto body filler catalyst — toxic and reactive
	Fluid car wax — toxic, flammable and corrosive

	Gasoline — toxic and flammable
	Motor oil — toxic and flammable
	Windshield wiper fluid — toxic and flammable
Pesticides	Herbicides — toxic
	Insecticides — toxic
	Moth balls — toxic
	Fertilizer (with pesticides) — toxic, corrosive and reactive
	Tree root/stump killer — toxic and reactive
Miscellaneous	Air fresheners — toxic and flammable
	Charcoal lighter fluid — toxic and flammable
	Fabric dye — toxic and corrosive
	Swimming pool chemicals — toxic, corrosive and reactive
	Shoe polish — toxic and flammable

<sup>1</sup>Based on common product formulation. Ingredients may vary, changing a product's hazardous property(s). Refer to actual product label for specific hazards.

## Guidelines for safe storage

After you have looked for signal words and identified product hazards, you are ready to move on to the second step. To determine whether your household hazardous products are store safely, use the following guidelines.

### General

- Make sure all products are clearly labeled before storing them. Leave products in their original containers with the contents clearly identified on the labels.
- Write the date of purchase on products before storing them in order to keep track of the age of each product.
- If you are storing products on shelves, be sure the shelves are firmly secured to the walls or are in sturdy structures. The best type of shelf for storing hazardous products has an anti-roll lip.
- Store hazardous products at or below eye level. This will help prevent dangerous spills that could occur when retrieving a product. Avoid storing products more than two-deep on a shelf.
- Avoid storing hazardous products on the floor to prevent containers from accidentally being knocked over.
- Do not allow products to spill or mix together. Toxic or explosive reactions may result. For example, chlorine bleach and ammonia can combine to form a poisonous gas. Dangerous situations can occur if fertilizers containing ammonium nitrate become contaminated with a petroleum product, such as motor oil or kerosene.
- Store corrosive, flammable, reactive and toxic products on separate shelves. Pesticide products should be stored in a locked cabinet, separate from all other products. If a product has more than one hazardous property, store it according to the hazard classification other than toxic.
- For example, paint thinner is both toxic and flammable and should be stored with other flammables. If unsure about the properties of a product, store it separately.
- Do not store a hazardous product in a container that was previously used for a different hazardous product. For example, do not use the same container for storage of gasoline in the summer months and kerosene in the winter months.
- Before storing products outside or in an unheated space, check with your local MU Extension center, the manufacturer, or distributor to make sure the product will not be destroyed by freezing temperatures.
- Do not store hazardous products in well-houses. Container leaks and spills could contaminate your drinking water

supply.

- Check the hazardous product containers periodically for deterioration. Ensure that lids are tightly closed.
- Keep an inventory of the products you have stored so that you do not buy more than you need.
- Keep containers dry to prevent corrosion. If a product container is beginning to corrode, follow the directions given in the "Securing and Holding" section.
- For long-term storage, place waterproof transparent tape over product labels to prevent labels from falling off or becoming unreadable.

## Preventing poisonings

- Never put hazardous products in food or beverage containers or in a container previously used for another purpose. Children who are unable to read can recognize familiar containers.
- Never leave hazardous products out in the open and unattended. Be aware that most poisonings occur while the product is in use.
- Keep products out of the reach of children and animals.
- Buy hazardous products in childproof packaging.
- Store all hazardous products in locked cabinets, in cabinets with childproof latches, or in other secure structures.
- Store all hazardous products away from food items. Do not store pesticides in cabinets near food, medical supplies or cleaning products.
- Keep the telephone number of your local poison control center posted by the phone in case of an emergency. In Missouri, that phone number is: 800-366-8888.
- Contact your local poison control center and request poison stickers (i.e. "Mr. Yuk") to place on the hazardous products in your home.
- If stickers are not available, consider creating a family symbol, such as an unhappy or ugly face, that children can identify and then draw this symbol on each container. When placing any sticker on a product, do not cover important label information.

## Reducing indoor air pollution

- Make sure lids and caps are tightly sealed. Many household hazardous products contain solvents that evaporate easily. Fumes can cause indoor air pollution. Evaporation can make the product less effective or more concentrated. This may tempt individuals to use more of the product than is recommended and lead to overexposure.
- Store products containing volatile chemicals, or those that warn of vapors or fumes, in a well-ventilated area.

## Promoting fire safety

- Keep products away from sources of heat, spark, flame or ignition. This is especially important with flammable products and aerosol cans.
- Never store rags contaminated with flammable solvents, such as wood stain, paint stripper and paint remover, inside because they can spontaneously start on fire. Follow the directions on the product label regarding the disposal of solvent-covered rags. If there are no directions, place the rags in an airtight, metal container and properly label the container. Store the container outside your house, away from other structures. Another option may be to volatilize (evaporate) the solvent before throwing the rags away. Check with local officials to find out the recommended disposal option in your area.
- Store gasoline in safety-approved containers only in a well-ventilated area away from all sources of heat, spark, flame or ignition.
- The best container for gasoline or other flammables is a metal container, red in color, that has a cap with a spring so that no liquid can spill if tipped over.
- The can should also be clearly marked **FLAMMABLE LIQUID**.
- Never bring gasoline into your house and never use gasoline as a cleaning agent.
- Store liquid propane (LP) gas tanks, such as those used with gas-fueled barbecue grills, outdoors and away from all sources of heat, spark, flame or ignition.

- Know where flammable materials are located in your home and how to extinguish them. Keep a working ABC-rated, or Multi-Purpose Dry Chemical, fire extinguisher in your home.

## Securing and holding

If you have household hazardous products that are no longer usable, check with your local waste authorities about the proper disposal of these products. If the products must be saved for a household hazardous waste collection, follow these procedures for securing and holding the products.

- Protect the label. Store substances in their original containers. If an item is not in its original container, clearly label the current container with the product's name and the date. Place the words DANGER and DO NOT OPEN on the container.
- If the product is in a rusting metal or a breakable container, this container should be placed within a larger, plastic container with a tight-fitting lid.
- A nonflammable absorbent, such as clay-based kitty litter, should be packed around the product container to absorb any possible leaks.

### Warning

Using flammable materials such as non-clay kitty litter or newspapers for overpacking may lead to spontaneous combustion (fire).

- Clearly label the outside container with the contents and date. Write the words DANGER and DO NOT OPEN on the outside container.
- If the product is flammable, store it away from all sources of heat, spark, flame or ignition.
- Store the container out of the reach of children and animals in a separate, locked cabinet or other secure structure.

## Personal action

By safely storing your household hazardous products, you can help to prevent accidental poisonings and other home accidents, reduce indoor air pollution, and promote fire safety.

You can further limit the risks from household hazardous products by reducing the amount of household hazardous products you purchase.

- Read labels carefully before buying a product. Avoid buying products with labels containing the words caustic, corrosive, danger, explosive, flammable, poison, toxic, volatile or warning.
- Use safer products whenever possible. Safer alternative products can be found in stores. Recipes for cleaning products using common kitchen ingredients, such as baking soda and vinegar, can be found in books available through most libraries and in the *Guide to Household Hazardous Products Around the Home*, which is described below.
- Buy household hazardous products only in the amount you need for the task at hand.
- Do not entirely rely on the word "nontoxic" on a product's label. A product that qualifies as nontoxic can still contain hazardous ingredients, but not in large enough amounts to cause an acute health reaction. Chronic health hazards are often not considered. Read the entire label for additional health warnings.

## For more information

The *Guide to Hazardous Products Around the Home* is a personal action manual for protecting your health and the environment. This comprehensive, 178-page handbook explains product ingredients, safety issues, disposal, recycling outlets, safer product alternatives, and more! Promoted by Greenpeace, the United Nations Environmental Programme, *50 Simple Things You can do to Save the Earth* and *The Green Consumer*. The **Guide** was written by the Household Hazardous Waste Project, winner of the 1991 President's Environment and Conservation Challenge Award.

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## Household Hazardous Waste Project in cooperation with EIERA.

### Related MU Extension publications

- WM6000, Safe Use, Storage and Disposal of Pesticides  
<http://extension.missouri.edu/p/WM6000>
- WM6001, Safe Use, Storage and Disposal of Paint  
<http://extension.missouri.edu/p/WM6001>
- WM6002, Selecting Household Safety Equipment  
<http://extension.missouri.edu/p/WM6002>
- WM6003, Household Hazardous Products  
<http://extension.missouri.edu/p/WM6003>
- WM6004, Managing Household Hazardous Waste  
<http://extension.missouri.edu/p/WM6004>
- WM6006, Identifying Product Hazards: Material Safety Data Sheets  
<http://extension.missouri.edu/p/WM6006>
- WM6007, Setting Up a Used Antifreeze Collection Site  
<http://extension.missouri.edu/p/WM6007>
- WM6009, Setting Up a Used Latex Paint Collection Site  
<http://extension.missouri.edu/p/WM6009>
- WM6010, Setting Up a Used Oil Collection Site  
<http://extension.missouri.edu/p/WM6010>
- WM6011, Storm Drains and Water Quality  
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