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# Read the Label

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American Chemical Society

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**E**very day we work with chemicals in our homes. These chemicals can be in the form of soap, toothpaste, hair spray, oven cleaners, furniture polish, or automotive antifreeze. The important fact is that these are chemicals, and we must recognize that just like the chemist in a laboratory, we must know how to use these chemicals properly and how to protect ourselves from any potential hazard. Most products, but not all, are formulated for maximum safety even under extreme misuse. Products based on chemistry allow us to do household chores more easily, faster, and better than in earlier times. An informed public will force the adoption of increasingly safe and environmentally sound products.

The professional chemist is required by federal, state, and local laws to be informed, but the only real protection consumers have against hazardous chemicals is their own knowledge. The purpose of this pamphlet is to provide suggestions and generally useful explanations, not specific guidelines, to help you work safely with household, lawn and garden, and automotive products.

How can you work safely with these chemicals? There are three important rules to follow when you work with any chemical in the home.

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**Don't rely on past experience.**

Learn more about new and improved products before using them.

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**Read** the label on any chemical that you bring into the home and make sure you understand it. Some manufacturers of chemical products found in the home print an 800 number on the label. Call them if you have questions about the safety of their product or if you do not understand their instructions concerning its use.

**Think.** Follow exactly the manufacturer's instructions for the product. Often, people want to use more of a product than is called for in the directions. This misuse can cause unexpected results and increase the risk of injury to the user.

**Learn** more about chemical products. Make certain that all precautions listed by the manufacturer are followed.



**Read**  
and follow  
label directions.

**Learn**  
about the  
chemicals  
you use.

## HOUSEHOLD CHEMICAL LABELS

Responsible manufacturers of household chemicals have gone to great lengths to see that the information on their labels is correct and necessary for the safe and effective use of their product. But when you purchase a household chemical, you also purchase a responsibility. Your responsibility is to read the label and follow the directions. These words often appear on household chemical labels.

**Danger** represents the most significant risk to the user. It is defined as harm, damage, or possible exposure to severe injury, pain, or loss. Putting it differently, *Danger* on a label means that you had best not use that product unless you read the label and follow the directions.

**Warning** means “to let one know of approaching or possible danger or risk.” In other words, someone may be hurt if you do not read the label and follow the directions.

**Caution** says to the user: “Be on your guard!” Simply stated, this means plan before you use that product to prevent injury to yourself and others.

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**Product labels tell you:**

- ingredients
  - special hazards such as poison, toxic, or corrosive
  - how to use safely
  - how to store and dispose of safely
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**Poison** is a “substance that through its chemical action usually kills, injures, or impairs an organism.” This means the misuse of a product with this word on the label can cause not only death, but also problems to lungs, liver, or other body organs. And those problems may not occur right away. We can take poisons into our bodies in different ways: by eating them, by breathing in their vapors or dust, or by absorbing them

through the skin. Whenever we work with a poison, we should take extra precautions.

Even with small print, there sometimes is not enough room on the label to give all the details on how to use a product safely. The manufacturer has to use three or four words instead of 10 to 20. This means that the user of these products has to do some interpreting.

**Use with adequate ventilation** does not mean all you do is open a window or a door. It means more than that. When you are using a product with this statement on the label, take note of how you are reacting. If you become dizzy, sick to your stomach, get a headache or even feel tired, you know that you’re not getting adequate ventilation. Stop working. Take a break in the fresh air. Make the break long enough so that you feel better. Before you go back to work, improve the ventilation. Open more windows and/or doors, or set up a fan to bring fresh air in one window and blow it in the direction of another open window.

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The message is simple.

The words tell us how hazardous this or that product might be to us.

Our motto is:

**Read the label, follow the directions, or do not use!**

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If this effort doesn’t improve your condition, you might want to consider using a different, less hazardous product. In fact, sometimes the way you’re feeling may not be due to a lack of ventilation, but to an individual response to the chemical, an allergy.

**Flammable/Combustible** means more than *It can catch on fire*. The household chemical may give off a vapor or gas that

will burn if the conditions are right. That's the first thing to remember. The second thing is that the vapor or gas in such a situation can travel unseen, all by itself, to somewhere else. And it could be that if the vapors were ignited, there would be an explosion and fire.

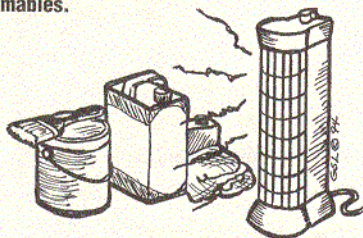
When a label says *Flammable*, be extra careful. If the vapors are ignited, there could be both an explosion and a fire. Some things in a home that could ignite those flammable vapors include static electricity, hot plates, faulty wiring, or even the phone ringing. Whenever you work with flammable or combustible materials, work outside if possible. If you must work indoors, make sure there is adequate airflow

## TO SUMMARIZE— COMMON HAZARDS

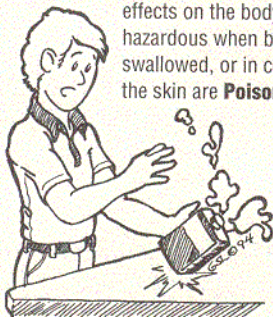
Chemicals which destroy on contact living tissue as well as equipment are **Corrosives**.



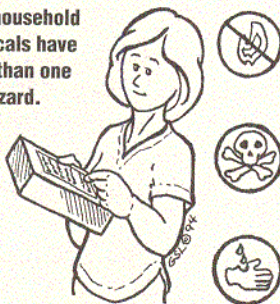
Substances which give off vapors that readily ignite under usual working conditions are **Flammables**.



Substances that have very serious and often irreversible effects on the body such as hazardous when breathed, swallowed, or in contact with the skin are **Poisons**.



Some household chemicals have more than one hazard.





**No smoking—**

It may cause the vapors or fumes of the product to ignite.

**Always provide sufficient ventilation.**

Open doors and windows or use only outside.



through and around the work area so that these vapors can't build up to the level where there might be a fire or explosion.

If you use a fan to increase the ventilation, set it up so that it pulls the air in from the outside and blows it into the room where you are working, but if you do this, also be sure there is at least one other open door or window to let the air out. And remember, don't use fan motors that produce sparks.

Before you work with these flammable/combustible household products, check to see what ignition sources are around—not just in the work area, but perhaps the whole house—and, where possible, disconnect or render the sources inoperable.

Manufacturers use words such as *Do not get in eyes*, *Do not get on skin or clothing*, and *Causes burns* to tell us that the product can damage human tissue and put holes in clothing.

Sometimes the label might say, *Avoid contact with skin or eyes*; this really means the same thing. This chemical hazard requires both the use of personal protective equipment and the knowledge of what to do if this material contacts the eyes or skin. But more about that later. Some of these chemicals may not cause pain for several hours, and so you don't recognize that something is amiss. Many hair removers and most strong cleaning agents such as drain cleaners and oven cleaners fall into the category called corrosives.

*Avoid breathing vapors (dusts)* tells us that the vapors from that chemical might harm us. We might become nauseous, tired, achy, or angry, uptight, even rambunctious. The problem here is to recognize that to breathe a vapor doesn't necessarily mean to *smell* a vapor. Some products can hurt us without our recognizing their presence. Inhaling some chemicals only for an instant can turn off our ability to smell them. Some chemicals cannot be detected by their odor until they are above the level at which breathing can cause harm. We're right back to adequate ventilation. When you read a label on a household chemical that says *Avoid breathing the*



**Store**  
household  
chemicals  
safely.

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*vapor*, you might want to work with that product outdoors or, perhaps, get yourself a respirator. Just remember, breathing but not smelling could be breathing while inhaling vapors!

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**Protect your health:**

- Protect your eyes with safety goggles.
- Protect your hands with proper gloves
- Protect your skin with proper clothing.
- Protect yourself according to the label.

We've been talking about reading labels and understanding what they say and what they mean. As we said in the beginning, if you don't understand what a manufacturer is telling you on the product label, don't use the product until you know!

When storing household chemicals, make sure the container is tightly closed and store as directed by the label. This usually means in a cool, dry location. Always store chemicals where they are not accessible to children or pets.

Proper storage is important. Never store hazardous products under the sink or on a closet floor, unless the area can be locked.

Food and household chemicals do not mix. Never eat or drink while handling household chemicals. Always wash with soap and water when finished.

Other tips for using chemical products include: clean up spills when they occur; use the product only as directed, don't experiment; use common sense and know what to do in an emergency; clean up when the job is finished; and don't hurry when using chemicals.

Sometimes no matter how careful we try to be, accidents happen. Because this risk is more common than we would like to believe, we have to prepare ourselves for that eventuality. What can we do?

## PROTECTIVE EQUIPMENT

One thing we can do is protect ourselves against the hazards that the manufacturer has told us about on the label.



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Remember, when we buy that household chemical we also buy the responsibility to use it safely. In order to do that, we must equip our homes with some protective equipment. What kind should we have? Listed below are some recommendations based on the warning labels that you have read.

**Don't get in eyes.** The best way to keep household chemicals from coming into contact with the eyes is to keep something between the eye and the product. Goggles protect better than so-called safety glasses, which in turn protect better than regular glasses. Tight-fitting goggles keep splashes from entering the eye from the top or the side.

**Don't get on skin.** The best way to keep chemicals off the skin is to not have any skin available to that chemical. This means protective clothing in the form of:

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**When household chemicals are not used safely, you or those around you can suffer serious or permanent injury or even death.**

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**Gloves.** Sometimes ordinary cotton gloves will do the job. Gloves will keep water-based paint off our hands, but what about working with an oven cleaner or a drain cleaner? Cotton does not do the job. How about vinyl gloves? Vinyl gloves work well for keeping hands fresh and unchafed when doing the dishes, but they won't work with a paint remover. In fact, vinyl gloves will dissolve if you get paint remover on them. Each type of chemical requires a specific kind of glove. For dealing with corrosive chemicals, rubber gloves are needed. They should be the gauntlet type. This means they have long cuffs that can be turned up to catch material that might run down the glove so that it won't continue down your arm. If you are unsure about the type of glove to wear, call the 800 number and ask the manufacturer what is recommended. It won't cost you anything, and it may save you from pain and injury.

**Clothing.** Exposed skin is more at risk than unexposed skin. The answer is simple; wear long sleeves and long pants. As an added precaution, you might want to invest in a rubberized cloth apron. In these cases, we are simply giving ourselves another barrier layer between our skin and our household chemical. Launder the clothing before you wear it again. If

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you're working with a flammable or combustible household chemical, it is better to use cotton clothing. It burns more slowly than fabrics such as vinyl, nylon, orlon, or polyester, which melt.

## LAWN AND GARDEN CHEMICALS

Many of these materials may be more hazardous than general household chemicals. Pesticides, herbicides, insecticides, and fertilizers are usually sold in concentrated form and are diluted before use. The labels of these products carry important information on the hazards associated with use, storage, and disposal. The precautions for personal protection and practical emergency treatment are a part of the labeling.

Read the entire label and follow the manufacturer's specifications exactly; this is important. Don't make solutions more concentrated than those specified in the dilution table. More is NOT better in this case. Damage can occur to what you want to protect. Use the product for its intended and recommended purpose; don't improvise. Don't store the concentrate or diluted solutions in food or beverage containers and do not reuse the empty container for any purpose. Always keep these materials away from children and pets, and store in a secure place. Don't mix more of the product than you need at the time of application. If you must dispose of any excess product follow the manufacturer's recommendations or ask your local waste disposal contractor for disposal options or household hazardous waste collection days. Wash hands thoroughly after use, and before handling food. Launder clothes separately.

## AUTOMOTIVE CHEMICALS

As in the case of lawn and garden chemicals, these materials are designed and supplied for a specific purpose. Antifreezes, radiator cleaners and flushing solutions are generally both corrosive and poisonous. Carburetor cleaners are usually very flammable. These products have labels describing the hazards associated with their use. They should always be stored in the original container and kept away from children.

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Spills should be carefully cleaned up so that pets (or children) will not taste these chemicals. Wash hands thoroughly.

Automotive products should never be used as a substitute for a household chemical, unless specifically stated on the label. Never use gasoline as a substitute for a less hazardous commercial degreaser. As previously stated for household chemicals, always use any volatile chemical with adequate ventilation. Don't store pool chemicals near fuels. Always check with local authorities for correct disposal of these products!

## WHAT TO DO IF AN ACCIDENT HAPPENS

Near each telephone, post the emergency telephone numbers for your family physician, rescue squad, hospital emergency room, and poison control center. Time can be critical when an accident involving chemicals occurs in the home. Don't waste valuable time searching through directories for these emergency numbers. Use all the professional help you can get. It's a good idea to read the label before use and remember emergency instructions. At the time of an accident, you should not have to read the fine print on the label. This is true if you get the chemical on your skin, in your eyes, or swallow the chemical.

If you or someone else accidentally swallows a product, the label should tell you what to do. Try to identify the product that has been swallowed if this can be done quickly. Look for the container with the label. Call your Poison Control Center, a hospital or physician, or the local emergency number. Because treatment depends on the type of poison ingested, do not induce vomiting unless you are instructed to do so.

For spills covering small amounts of skin, immediately flush with flowing water for no less than 15 minutes. If there is no visible burn, wash with warm water and soap, removing any jewelry to facilitate removal of any residual materials. Check the label to see if any delayed effects should be expected. It is advisable to seek medical attention for even minor chemical burns.

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For spills on clothes, don't attempt to wipe or flush off the clothes. Quickly remove all contaminated clothing, shoes, and jewelry. Be careful not to spread the chemical on the skin, or especially in the eyes. To prevent contamination of the eyes use caution when removing pullover shirts or sweaters; it may be better to cut the garments off. Immediately flood the affected body area with tempered water for at least 15 minutes. Resume if pain returns. Do not use creams, lotions, or salves. Get medical attention as soon as possible. Launder contaminated clothes separately from other clothing or discard.

If a chemical gets into your eyes, rinsing for 15 minutes with softly flowing water is preferred. Lift the eyelids away from the eyeball, roll the eyes continuously, and after 15 minutes, see a physician. The shower and kitchen skin spray are not softly flowing water sources, and a person's head does not fit comfortably under a sink or bathtub faucet. So instead ladle or scoop water from a pan over the bridge of the victim's nose with the victim lying on the floor. Remember, prompt action is the key to saving the eyes.

### Afterword

This leaflet was written by the members of the ACS Committee on Chemical Safety. I want to thank subcommittee members David Bush, Warren Kingsley, Patricia Redden, and Eileen Segal and especially the subcommittee chair, Ruth Hathaway, for their dedication and hard work. I also wish to acknowledge the contributions of my predecessor, Carl Gottschall, who chaired the Committee on Chemical Safety when this project was initiated. Robert J. Alaimo, Chair, Committee on Chemical Safety, 1993-1994.

### Disclaimer

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