

HHF-LRA.174

Selection and Use of Green Home Cleaning Products

Product Decisions

Grocery store shelves feature many effective household cleaning products that can safely be used to remove dirt and grime. Companies stand behind their products because they must pass through rigorous testing to meet both human and environmental safety standards before they are ever placed on the market. Your responsibility as a consumer is to use and store commercial products according to the directions on the label. If you have any questions, call the toll-free number found on most product labels.

Commercial cleaners have been formulated to provide fast, safe, efficient cleaning with the least amount of product needed. To meet the expected environmental standards, many cleaning products use recycled containers and contain ingredients that are biodegradable so that they can be safely treated in sewage treatment facilities and septic systems.

Some people prefer to mix their own cleaning products using items that are often already on their cupboard shelves. You have a responsibility to read labels, evaluate recipes and mix use, store and dispose of these mix-at-home products safely. Refer to the Mix-at-Home Recipe Checklist on the next page for more information.

Recipes for Disaster

Be sure to read labels and use caution when using both commercial and mix-at-home cleaning products. Remember that products are reformulated from time to time. No matter how inexpensive a cleaning product might be, the price is too high if an accident occurs due to misuse or improper storage of the product.

Be safe! *Think* before combining any cleaning product with other household ingredients. Some combinations simply smell bad but others are dangerous!

Chlorine products include bleach, mildew remover, tile cleaner, powdered cleansers.

Ammonia products include glass, floor, and appliance cleaners. Many detergents also contain a drop of ammonia. Be sure you're not mixing one of these products with chlorine.

Acid products include toilet bowl cleaners.

There's danger in mixing chlorine products with baking soda, automatic dishwasher detergent or products containing ammonia or acids. Such mixtures produce toxic gases! If you want to use a recipe that combines products, contact the manufacturer to check on any hazards in using their products in this manner.

Other safe and healthy practices include these actions.

➡ Add a cleaning chemical to water and not the reverse. If you pour water into an acid, splashing may result and have disastrous results.

- ▶ Store cleaning products in areas away from food and not accessible to young children or pets. Be sure to close containers properly.
- ▶ Be cautious of any mix-at-home cleaning recipes calling for use of food products, such as milk or bread. These products can cause microbial growth on surfaces which could result in the growth of disease-causing organisms.
- ▶ Don't mix your own products in empty cleaning bottles. Products which are left in the bottle and the household chemicals added may each be safe when used alone but can become dangerous when mixed with other products.
- ▶ Put cleaning products away immediately after removing the amount needed for the job. This will help prevent accidental spills and limit accessibility to young children and pets.
- ▶ Store products in their original containers and keep the original label intact. Instructions for product use, storage, disposal, safety precautions and first aid vary according to their ingredients. It can be dangerous to use a product incorrectly or to follow the wrong emergency treatment guidelines.
- ▶ If a product is being used as a disinfectant, look for an EPA registration number on the label. It will also indicate that it is a disinfectant or say it "kills germs."

Additional Safety Tips

Most cleaners irritate eyes and skin and are dangerous if swallowed. The following additional safety guidelines apply to both commercial and homemade cleaning products.

- ▶ Do not use harsh cleaners often.
- ▶ Use cleaners that produce fumes, such as ammonia, only in well ventilated areas.
- ▶ Keep harmful products off clothing.
- ▶ Keep harmful products off surfaces that are not being cleaned.
- ▶ Pretest cleaner on small area before using.
- ▶ Wear protective gloves when using cleaners.
- ▶ Store all cleaning products out of reach of small children and pets.

What's In Commercial Cleaning Products?

Basic commercial cleaning products contain certain common chemicals which are responsible for their cleaning ability. Read the labels on commercial cleaners. Check the

Mix-at-Home Cleaning Tips

Ask yourself these questions as you evaluate information for mix-at-home cleaning products.

Effectiveness

- Does it work? (Test a small amount on the surface that you will be cleaning.)
- What specific directions are there?
- Is the mixture safe for the surfaces on which it will be used? (Check all labels for precautions or contact manufacturer for more information.)
- Is the mixture cost effective? (How much is the total cost of ingredients needed for the mix-at-home cleaning product versus the cost of a commercial cleaner?)
- Is the mixture easy to use? Does it save time?

Safety

- Who has tested the mix-at-home information? Is it a reliable source who can also assure human and environmental safety?
- What cautions are there for safety, mixing with other products, use and storage?
- Is there the potential for dangerous reactions from the combination of chemicals in the mixture? Do the instructions include products that should not be combined? (For example, chlorine bleach must NOT be mixed with ammonia or acids or any products containing them.)
- Does the mixture actually have an environmental benefit? Things to consider: Excess packaging, use of several products instead of one, using more mixture for same results, using more water or hotter water, having to clean more often than when using a commercial product.

Emergency Considerations

- What is the appropriate treatment if the mixture is accidentally swallowed or splashed into eyes?

ingredients to see if a simple homemade cleaner could be substituted.

One problem, for example, is that common words, such as bleach, baking soda or salt, are not used on the label. Their chemical names are used instead. Refer to the following reference list giving examples of principal active chemical ingredients and their common product names. (See chart on next page.) Learn to recognize these on product labels in order to understand the active ingredients. By recognizing and comparing ingredients in products, an inexpensive homemade substitute can often be tried before purchasing an expensive commercial product.

Keep in mind that there are no requirements for companies to disclose ingredients on many cleaning products. Therefore, it may be necessary to call the company to this information.

Since many household products have the potential to be dangerous if mishandled, try to become aware of the possible problems with these products. Use the following list as a guide.

Chlorine Bleach – Produces lethal gases when mixed with ammonia; is irritating to eyes. When swallowed, will cause burning sensation and vomiting.

Ammonia – Should never be combined with any product containing chlorine bleach such as liquid bleach, powder bleach, or scouring powders containing bleach since lethal gases may be formed.

Fumes can irritate eyes and skin and, if swallowed, can burn mouth, throat, and stomach lining. Can darken aluminum utensils. Is very likely to explode when stored with peroxide.

Washing Soda – Very irritating to skin in concentrated amount. If swallowed, will irritate and burn mouth, throat and stomach. Corrosive by nature.

Cleaning Solvent – Petroleum solvent in product is flammable. Poisonous if swallowed. Often fatal for children.

Dry Cleaning Fluid – Naptha is a federally regulated chemical and is no longer available on the market. You must be a licensed dry cleaner to buy it. It is nonflammable but vapors can make you drowsy if inhaled. It can be poisonous if swallowed and is often fatal for children. Other fluids, such as tetrachloroethylene, are used as a solvent in dry cleaning. They dissolve many organic materials, and are volatile, highly stable, and nonflammable. They may appear in a few consumer products including paint strippers and spot removers. They must be used only in well-ventilated areas. Consult a materials data safety sheet on the Web site of a product or call the toll-free number of the company with any questions about the safety and use of any product. *Problems are combined for these products.*

Trisodium Phosphate – Very irritating to skin in concentrated amount. If swallowed, can burn mouth, throat and stomach. Available at most hardware stores as a cleaning agent, stain remover, and degreaser. Commonly used to prepare surfaces for painting. TSP was once common in laundry and dishwashing detergents, but the phosphate caused algae growth in waterways. In the early 1970s the use of phosphate-containing products was limited and later removed from laundry detergents and today is in the process of being removed from dish detergents. Although it is the

Common Product Name	Principal Chemical Name or Active Ingredient
Baking Soda	Sodium Bicarbonate
Table Salt	Sodium Chloride (no iron)
Bleach	Sodium Hypochlorite (chlorine base) Sodium Chloride (salt) Water
Bleach	Sodium Perborate (peroxy or oxidizing base) Sodium Percarbonate (Hydrogen Peroxide)
Vinegar	Acetic Acid
Whiting	Calcium Carbonate (Powdered)
Washing Soda	Sodium Carbonate
Lye	Sodium Hydroxide
Lemon Juice	Citric Acid

active ingredient in at least one toilet bowl cleaning tablet, TSP is generally not good for cleaning bathrooms because it can corrode metal and damage grout.

Lye – Very caustic when combined with water. Avoid contact with eyes and skin. Can eat through plastic and rubber.

Turpentine – Flammable product in solution. Prolonged exposure to vapors can cause lung and central nervous system problems. Can burn eyes and skin tissue. Extremely flammable. Use outside or in well-ventilated areas only.

Learning basic facts about common products, reading labels, following directions for appropriate use and storage helps you get the most effective use of both commercial and mix-at-home household cleaning product — the healthy, safe way.

Look for Green

Many common cleaning products can cause injuries and health problems, but safe and effective alternatives exist. Look for eco-friendly, non-toxic, biodegradable green products that are becoming increasingly available. They are safe to use, non-toxic, and effective, too.

Microfibers are found in many new home products, including those for household cleaning and home maintenance. Cleaning cloths and mops labeled as “microfibers” literally means that extremely fine fibers are used to attract lint and dirt and make cleaning tasks quicker and easier. If you purchase one of these products, be sure to read the directions for use and care. They may differ from the other products that you have been using. For instance, care instructions on many microfiber towels recommend washing in hot water first to plump up the fibers. Add a little dish soap to a dishpan and wash the cloths in the hottest water possible. Rinse, wring them out, and they’re ready for use. After use, wash the same way or throw them in the washer. **Make sure you don’t add fabric softener or put them in the dryer**, or they will pick up ALL the lint from everything in the dryer. Proper care will result in a long use-life from one cloth.

For More Information

There are numerous books and magazine articles related to green cleaning and green household products. Consider the information in this publication when evaluating information and before using a particular method or product. You may also wish to browse the following Web sites and also refer to the University of Kentucky Cooperative Extension publication, HHF-LRA.173, *Green Cleaning*, which gives more information on making your own products and green cleaning alternatives.

Web sites

- Excellent Web site provided by the Environmental Health Association of Nova Scotia. Very comprehensive guide on toxic chemicals used in housing, furnishings, and cleaning products. Information provided includes chemical descriptions and health impacts, consumer advice on green selection of household products, fragrance-free products, and less-toxic or simple home alternatives. <http://www.lesstoxicguide.ca/index.asp?>
- Environmental Protection Agency (EPA) booklet (available online or print) on *Care for Your Air: A Guide to Indoor Air Quality*. <http://www.epa.gov/iaq/pubs/insidest.html#Look5>
- EPA information on Organic Gases (Volatile Organic Compounds — VOCs) contained in many household products, including cleaning products. <http://www.epa.gov/iaq/voc.html>
- Informative Web site sponsored by the U.S. Department of Health & Human Services. This is a household products database providing current health and safety information on various household products. It includes categories for Inside the Home, Personal Care, Pesticides, Home

Maintenance, and more. Information is available by either product category or brand name and provides manufacturer details including toll-free numbers, listing of product ingredients, health effects, cautions, and recommended handling and disposal of product.

<http://householdproducts.nlm.nih.gov/index.htm>

References for Additional Reading

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