

# **Make the Connection:**

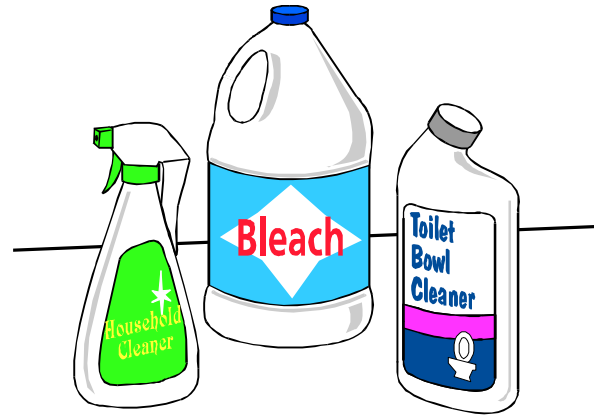
# **Health & Environment**

**Volume 1**  
**Hazards of household products**  
**And recipes for less toxic alternatives**

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<http://www.herc.org>

## Household Products: Convenience or Health Hazard?

Let's face it: we hate to clean. If we have to clean, we want to get it done fast. Any product that can help us get our cleaning chores out of the way faster is going to sell. Nevermind that the product might contain chemicals that are harmful to our health as long as it gets the job done with minimal effort.



Fast. Easy. Less work. Good results. 'Clean' smelling. These are the qualities that consumers demand and to which manufacturers respond. It seems that every week there is a new and improved product on the market. They make it, we buy it, we use it, but do we ever stop to think how it might affect our health?

### Indoor Air Quality: A Forgotten Issue

Most people are aware of air pollution caused by automobiles and industry, but few people realize that the air inside their homes can be polluted as well. Since the average person spends 90% of their time indoors, indoor air pollution is as much of a concern as outdoor air pollution. It seems reasonable that we would do what we can to protect the air we breathe.

The range of household products that contain potentially harmful substances that contribute to indoor air pollution is wide-reaching and diverse. Some of these products release contaminants into the air right away; others do so gradually, over a period of time. The harmful components in many household and personal care products can cause headache, fatigue, joint pain, dizziness, nausea, allergic reactions, and eye, skin, and respiratory tract irritation; some have been shown to cause cancer in people exposed to large amounts.



Even though these products are easily purchased at the local store, it can still be harmful to you, your family and the environment. Many household products contain chemicals that are poisonous, corrosive, flammable, and/or chemically reactive. Many have not been tested for potential long-term health effects on humans.

Households with small children must be especially careful about the hazardous nature of a product. In the hands of a curious child, products that are reasonably safe when used as directed can cause grievous harm. In 1990, 11% of calls to Poison Control Center involved a child and a cleaning product.

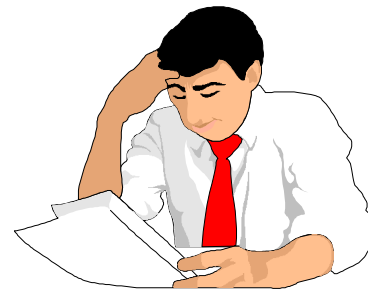
Contamination from most household products, if limited to low levels for short periods of time, does not pose a serious health threat. However, contamination can occur over a long period of time from a variety of sources, and harmful effects can occur. Where there is prolonged exposure and where there is a possible multiplying effect from the presence of contamination from many different products, the effects can sometimes be serious.

Many people use many different products every day, and most don't become obviously ill. However, a distinction must be made between the effects that we can see and the effects that we can't see.

The body is a very complex system that is designed to withstand chemical assaults from a myriad of sources. For each chemical that enters the body, whether by mouth, inhalation, or skin absorption, there is a specific and often unique method that the body uses to dispose of it. The primary organ used in the disposal process is the liver. Ordinarily, the liver is a very resilient organ that is capable of adaptation and self repair under most circumstances. However, with the explosion of new chemicals that have hit the market in the last 40 years, the human body simply has not been able to adapt fast enough to develop a disposal strategy for every new chemical that enters the body. Furthermore, many of the chemicals to which we are exposed can either damage or impair the liver. That means that the body's ability to dispose of toxins can slow down, giving the chemicals more time to cause damage to our cells. The more chemicals we are exposed to, the slower the system becomes, and that is when illness and disease can set in.

When the body's disposal process is overworked it can start to malfunction in very subtle ways. The problem is that the liver can lose up to 70% of its function before obvious symptoms are observed. Most symptoms that can be attributed to an overworked disposal system go undiagnosed. However, with careful observation and knowledge there are some early signs that can indicate an overworked system.

Some early signs that the body is working overtime include: frequent unexplained headaches, unusual food intolerances, feeling 'run down,' sensitivity to cigarette smoke, headaches or other symptoms caused by fragrances, increased awareness of odors, inability to concentrate and short term memory loss. If you suffer any of these symptoms, see a doctor to rule out a serious illness.



When caught early these symptoms can often be alleviated through lifestyle changes such as diet, exercise, and toxic use reduction. However, if these early warning symptoms are not heeded and the body is not given the time to heal itself, the possibility for causing permanent damage increases.

One result can be environmental sensitivities. People who suffer from this problem have difficulties using many of the products we tend to take for granted. Shampoos, cleaning products, soaps, dyes, fragrances, and everyday household products can cause disabling symptoms such as severe headache or difficulty breathing. When asked, these people frequently respond that their first signs of this problem was a sudden sensitivity to cigarette smoke or perfumes. They say that they ignored the symptoms because they really didn't think they would develop any further. Most are unanimous in saying that if they had just heeded the early warnings that they would still have a nearly normal life.

There is no way to predict if or when you will develop sensitivities to the chemicals in your environment. Like other diseases, there are three factors that influence if and when you will develop symptoms. These factors are time, genetic predisposition, and environmental exposures. Obviously you can't control the first two factors, but you can control your environmental exposures. Some things to consider are diet, exercise, prescription and non-prescription drugs, and household product use. All of these factors can impact the body's ability to manage toxins effectively.

The main point of this booklet is to illustrate how the environment can impact our health, and what steps you can take to safeguard your health now by becoming a less-toxic consumer. There may be no way to predict how healthy you will be in the future, but with all the non-toxic alternatives available, why take chances with your health?

## Take The Household Toxics Tour

Toxic chemicals in the home can be eliminated simply by making thoughtful choices in the supermarket after educating yourself about where the hazards are in common consumer products. How can you determine what toxics you have in your home? Take this "toxics tour." Use the box to check off the items for which you need a non-toxic replacement. Later you can refer to this booklet for suggested replacements.

### In the Kitchen

These common kitchen products all contain hazardous chemicals:

- All-purpose cleaner
- Ammonia-based cleaners
- Bleach
- Brass or other metal polishes
- Dish detergent
- Disinfectant
- Drain cleaner
- Floor wax or polish
- Glass cleaner
- Dishwasher detergent
- Oven cleaner
- Scouring powder

### In the Utility/ Laundry Room

A number of products are likely to contain irritating or toxic substances:

- Bleach
- Carpet cleaner
- Room deodorizer
- Laundry softener
- Laundry detergent
- Anti-cling sheets
- Mold and mildew cleaner
- Mothballs
- Spot remover

### In the Bath

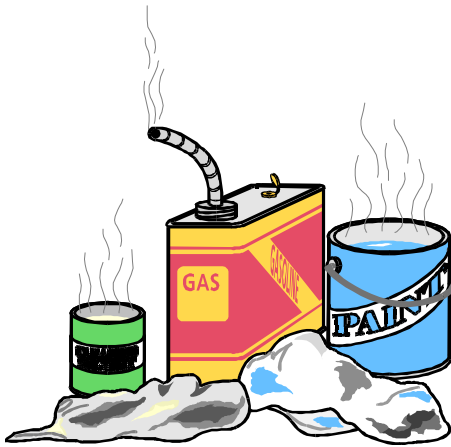
Numerous cosmetics and personal hygiene products contain hazardous substances.

- Shampoos (cresol, formaldehyde, glycols, nitrates/ nitrosamines and sulfur compounds)
- Hair spray (butane propellants and formaldehyde resins)
- Antiperspirants and deodorants (aerosol propellants, ammonia, formaldehyde, triclosan, aluminum chlorhydrate)
- Lotions, creams, and moisturizers (glycols, phenol, fragrance, and colors)
- Perfumes and colognes (aerosol propellants, hydrocarbon solvents—more than 5,000 different chemicals are used by fragrance manufacturers)

## In the Garage

A number of dangerous substances are frequently present:

- Paint
- Paint thinner
- Benzene
- Kerosene
- Mineral spirits
- Turpentine
- Lubricating/ motor oils
- Gasoline



Hazards among them include these chemicals:

**Paint thinner:** chlorinated aliphatic and aromatic hydrocarbons can cause liver and kidney damage

**Paint thinner:** ketones may cause respiratory ailments vary according to specific form of the chemical

**Gasoline, motor oils, and benzene:** petroleum hydrocarbons are associated with skin and lung cancer

**Oil-based paint:** mineral spirits are a skin, eye, nose throat, and lung irritant. High air concentrations can cause nervous system damage, unconsciousness and death

**Wood putty:** ketones and toluene are both highly toxic, may cause skin, kidney, liver, central nervous system damage may damage reproductive system.

## Becoming a Less-Toxic Consumer

Now that you have taken a toxics tour, take some time to familiarize yourself with the available alternatives. You may find that in the process of protecting your health you will save money as well! With knowledge, you can make a difference! This booklet was developed to help you make that difference by becoming a consumer of less-toxic products.

As an informed consumer, you can have an impact on the amounts and types of household products produced. By shopping for less-toxic or non-toxic products, you send a message to manufacturers which encourages them to produce safer alternatives to hazardous household products. If your local store doesn't stock products that are recommended in this booklet, talk to the store's manager and ask him/her to consider selling the product.

## **Steps You Can Take To Become A Less-Toxic Consumer**

- Reduce The Use. Use less-toxic alternatives whenever possible
- Be A “Smart Shopper”
- Always read the label, and buy the least-toxic product available
- When possible, select products that are fragrance free
- Buy only the amount that you need
- Don't be seduced by sales
- Think “Safe”
- Properly handle and store materials
- Dispose of household hazardous waste legally and safely

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## Laundry Products

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Health effects: These products are highly alk a-line and can cause skin and eye irritations. They are very dangerous if swallowed.

Solutions:

- ☞ Use simple laundry soap. Cleans better if a water softener like borax, washing soda, or baking soda is added to prevent soap scum residue. Phosphates are not biodegradable, and accumulation pollutes water systems.
- ☞ Use a liquid laundry detergent which does not have phosphates, and is free of fragrance and dyes. (For more info on the effectiveness of laundry cleaners, see Consumer Reports, Feb 1991.)
- ☞ Use a laundry compound that has been shown to contain fewer polluting metals than others (see examples in the shopping list).
- ☞ Use products which contain "washing soda." Washing soda brightens fabrics, costs less than bleach and is safer to have around.
- ☞ Use 1 Cup of baking soda, white vinegar, or borax to clean clothes.
- ☞ Use a vegetable based Castille soap, available at health food stores.

### Chlorine Bleach

Health effects: Chlorine bleaches can irritate and burn skin and eyes. Even the fumes from chlorine bleach are irritating to eyes and nose. Never mix chlorine bleach with other substances to make a cleaning solution. These mixtures produce very dangerous gases that can be deadly.

Solution:

- ☞ Use non-chlorine dry bleach or washing soda to whiten clothes.
- ☞ Use hydrogen peroxide-based liquid bleaches. Hydrogen peroxide breaks down to water and oxygen in wastewater.

- ☞ If you use chlorine bleach, try using half the recommended amount and add ¼ to ½ cup baking soda or borax per load.
- ☞ Limit use of bleaches where possible.
- ☞ Don't buy lemon-scented bleaches. Makes bleach attractive to children.

### Laundry Starch

Health effects: possible ingredients of spray starch (aside from the starch) include formaldehyde, phenol, and pentachlorophenol; in addition, any aerosolized particle, including cornstarch, may irritate the lungs.

- ☞ Dissolve 1 T. Cornstarch in 1 Pint cold water. Put in a spray bottle. Shake before using.

### Fabric Softener

Health effects: Residues from fabric softeners, as well as the fragrances commonly used in them, can be irritating to some people.

- ☞ To freshen and soften natural-fiber clothing, add 1 cup vinegar or ¼ cup baking soda during final rinse.
- ☞ To reduce "static cling" in synthetics, line dry clothes. Or remove clothes from the dryer while they are still slightly damp.
- ☞ Fabric softener sheets are safer to have in your laundry room than a liquid or aerosol softener (less chance of product being swallowed or getting into eyes or lungs accidentally), but dryer sheets contain fragrances that may be irritating. If you must use a fabric softener, consider one that is fragrance free (i.e. Downy Free)

### Presoak

- ☞ Soak heavily-soiled items in warm water with ½ cup washing soda for 30 minutes.
- ☞ Food stains: In a small bucket, dissolve denture cleaner tablets in water. Soak



stained garment in water. Works well on milk stains in baby clothes.

## Spot & Stain Removers And Dry Cleaning Fluids

Health effects: Inhalation of toxic vapors from these products can cause depression of the central nervous system. Symptoms include nausea, disorientation, and loss of appetite. Perchloroethylene or 1-1-1 trichloroethane solvents (in spot removers and carpet cleaners): can cause liver and kidney damage if ingested; perchloroethylene is an animal carcinogen and suspected human carcinogen.

Solutions:

- ☞ Avoid products with naphthalene or 1,1,1-trichloroethane (TCA).
- ☞ Remove spots as soon as they happen. Use club soda; lemon juice and hot water; borax and cold water. Use bleach-type removers rather than solvent-types.

### Clothing/ Fabric Stains

- ☞ Use your regular laundry detergent as a Remover booster. Make a paste from a powder detergent or pour a liquid detergent directly on a stain. Rub into stain with toothbrush. Then launder as usual.
- ☞ **Blood:** Immediately clean stain with club soda or sponge with cold water; "bleach" with ¼ cup borax in 2 cups water. Sponge with cold water and rinse.
- ☞ Saturate with hydrogen peroxide. Let sit a couple of minutes and wash. May bleach out color, so test first.
- ☞ Dissolve ¼ Cup borax in 2 Cups cold water. Soak. Works on blood, chocolate, coffee, mildew, mud, and urine.
- ☞ Chocolate and coffee: Soak in cold water, rub with soap and a borax solution, rinse, then launder. If necessary, rub with a borax/water paste.
- ☞ Fruit stains: Soak in cold water 30 minutes; rub soap into remaining stain; then

wash; "bleach" with lemon juice and sunlight, if needed. Or, soak in vinegar.

- ☞ Grease: 1. Apply paste of cornstarch and water. Brush off when dry; 2. Cover spot with baking soda or cornmeal. Let absorb the grease and brush off; 3. Scrub spot with toothpaste; 4. Sponge grease spot on suede with a cloth dipped in white vinegar, dry, brush off.
- ☞ Ink: Tough to get out. Try: 1. saturating stain with milk; 2. sponge stain with alcohol; or 3. apply cream of tartar and lemon juice paste. Set for 1 hr.
- ☞ Lipstick: Rub with cold cream or shortening to dissolve color; rinse area with solution of washing soda and warm water to remove grease; wash in soapy water.
- ☞ Oil: Rub white chalk into stain before laundering. Or, try scrubbing spot with toothpaste.
- ☞ Stains from perspiration: Pretty tough, but try sponging stain with a weak solution of white vinegar or lemon juice, and water.
- ☞ Rust stains on clothing: Moisten spot with lemon juice, sprinkle with salt, and leave in the sun for a couple of days. Or, try a "waterless" auto mechanic's hand cleaner.
- ☞ Tea: Stretch fabric over a basin and pour boiling water over the stain; wash as usual.
- ☞ Wine: Blot with paper towels to absorb wine. Then apply either club soda, rubbing alcohol, borax or white wine(!) to blot out the stain.

### Dry cleaning

- ☞ Remove the plastic bags from fresh dry cleaning and air the clothing out before hanging in your closet. This will limit your exposure to perchloroethylene, the solvent used in dry cleaning.
- ☞ Hand wash, where possible. Ask questions about cleaning options when you buy the clothes.
- ☞ Buy clothes that don't require dry cleaning (e.g. washable rayon or silk)

## Safe Handling:

- ☞ Chlorine bleach can produce a toxic gas if mixed with ammonia or acids (i.e. vinegar) and acid-based cleaners (i.e. some toilet bowl cleaners contain acids).
- ☞ Undiluted bleach spilled on fabric can damage the fabric.
- ☞ Bleach spilled on skin can be an irritant.
- ☞ Bleach swallowed can cause nausea and vomiting and, on occasion, has been

known to burn tissue in the throat (call Poison Control Center for instructions).

- ☞ Avoid lemon-scented bleach. It smells attractive to children.
- ☞ Avoid aerosol disinfectants. Hospitals use liquids. Aerosols often carry the fluid to unintended areas. Aerosols increase the user's exposure to the chemical through breathing.

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## Furniture, Floor, and Metal Polishes

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Health effects: These products may contain chemicals, such as mineral spirits and petroleum distillates, that can irritate skin, eyes, and nose. Some of these chemicals can cause photosensitization (sensitivity to light).

### Floor Cleaners

- ☞ To clean vinyl tile and linoleum, use ¼ cup white vinegar, ¼ cup of washing soda, in 1 gallon warm water.
- ☞ Remove scuff marks on linoleum with toothpaste.
- ☞ To clean wood floors, damp mop with a mild vegetable oil soap and dry immediately.
- ☞ For painted or varnished wood floors, mix 1 tsp. washing soda & 1 gal. hot water; rinse with clear water. Dry immediately.
- ☞ To clean polyurethane-sealed wood floors, use ¼ cup white vinegar in 1 gallon water. Dry immediately.

### Furniture Polish

Health effects: nitrobenzene (in furniture and floor polishes) can cause skin discoloration, shallow breathing, vomiting, and death; associated with cancer and birth defects;

- ☞ Polish unvarnished wood with almond, walnut, or olive oil. Work it in well and wipe off excess. Oily surfaces attract dirt.

- ☞ Make a polish out of 2 Pints olive oil and 1 Pint lemon juice. Work in well and wipe off excess.
- ☞ Use mayonnaise as a cleaner and polish.
- ☞ Use beeswax.
- ☞ To clean and polish varnished wood, use a mild vegetable oil soap.
- ☞ Make a dust cloth by placing a few drops of oil in a jar along with a cloth. Cover tightly and let sit overnight. Cloth will absorb just enough oil to pick up dust when dusting.
- ☞ Use linseed oil to revitalize old furniture.
- ☞ Wash painted wood with a mix of 1 tsp. washing soda in a gallon of hot water; rinse with clear water.
- ☞ To remove watermarks from wood furniture, rub toothpaste on spot and polish with a soft cloth.
- ☞ Many furniture polishes contain petroleum distillates-very dangerous if swallowed.

### Metal Polishes

Health Effects: short-term exposure to petroleum distillates can cause temporary eye clouding; longer exposure can damage the nervous system, skin, kidneys, and eyes.

Brass: Mix ½ tsp. salt and ½ cup white vinegar with enough flour to make a paste. Apply thickly. Let sit for 15 min - ½ hr. Rinse thoroughly with water to avoid corrosion.

Copper: Polish with a paste of lemon juice and salt.

Silver: 1. Boil silver 3 minutes in a quart of water containing: 1 teaspoon baking soda, 1 teaspoon salt, and a piece of aluminum foil;

2. Rub silver with a baking soda/water paste and a soft cloth; rinse and polish dry;

3. Rub with toothpaste. Use a toothbrush to clean raised surfaces. Be careful not to scratch surfaces. Be gentle and use a light hand.

Chrome: 1. Wipe with vinegar, rinse with water, then dry. (Good for removing hard water deposits.);

Shine chrome fixtures with baby oil and a soft cloth. (Good for removing soap scum off faucets.)

Stainless steel: Clean and polish with a baking soda/water paste or a cleanser like Bon Ami.

Aluminum: Mix soap gel (see Recipe 13 in Appendix 1) with whiting. Scrub with very fine steel wool.

Aluminum pans: Boil in the pan a solution of 1 T. vinegar per quart of water or 2 T. cream of tartar per quart of water.

Appliances: Shine with dry baking soda.

## **Shoe Polish**

✎ Avoid products containing methylene chloride, trichloroethylene (TCE), trichloroethane (TCA), nitrobenzene (chemicals seen to cause central nervous system problems; liver damage, if swallowed). If you use conventional shoe polish, use in well-ventilated area.

✎ For leather shoes, apply olive oil, walnut oil, or beeswax to shoes then buff with a chamois cloth.

✎ Rub leather shoes with the inside of a banana peel and buff.

✎ To clean leather, rub equal parts of white vinegar and linseed oil into leather; buff with soft cloth.

✎ To shine and protect patent leather shoes, rub with a dab of petroleum jelly.

✎ To clean dirt marks from suede, rub with an art-gum eraser and buff lightly with sandpaper, an emery board or a wire suede brush.

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## Cleaning, Disinfecting, and Deodorizing

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### Surface Stains

- ☞ Rub with moist baking soda, cornstarch on Porcelain or salt.
- ☞ Tougher stains: Make a paste using 3 T. borax and 1 T. of lemon juice; scrub with nylon scouring pad and rinse with water.
- ☞ Tile cleaner: Mix 2T. Trisodium phosphate with 1 gallon water. Apply to tile and grout with brush or cloth. Mop up dirty water with sponge or cloth. Does not need rinsing.

### Dishes and Countertops

Handwashing:

- ☞ Use vegetable oil-based soaps/detergents.
- ☞ Look for dish soaps free of dyes and fragrances.

Automatic dishwasher:

- ☞ Use equal amounts of borax and washing soda.
- ☞ Choose a detergent with low phosphate content (read labels and see examples in shopping list). Unless your water is very hard, you should get good results using half the recommended amount in your dishwasher.
- ☞ Sprinkle a handful of baking soda over the dishes instead of filling the open dispenser with detergent.

### Disinfectants

Health effects: phenol and cresol are corrosive; can cause diarrhea, fainting, dizziness, and kidney and liver damage. Triclosan has not been tested for long term health effects. Bleach can emit toxic fumes when mixed with ammonia containing products and acids (i.e. vinegar). However, it is the only chemical proven to kill certain foodborne bacteria, so judicious use may be necessary.

- ☞ Soap and hot water is sufficient for most of your household cleaning needs. Adding borax can boost the cleaning power.
- ☞ For the occasional disinfecting job (e.g. to kill germs on your meat cutting board; to wash down shower stall floor to prevent spread of athlete's foot fungus; to prevent mold growth in damp areas) mix: ¼ cup liquid chlorine bleach in a gallon of water. Any container holding a bleach solution should be child-proof and well-labeled. *Note: Bleach is the only agent proven to be 100% effective against e. Coli, Salmonella, and other bacteria.*
- ☞ Hydrogen peroxide (sold in a 3% solution) is effective against viruses.
- ☞ Isopropyl (rubbing) alcohol can be used to disinfect surfaces and hands. Keep alcohol swabs handy for instant disinfection when soap and water are not available. *Note: alcohol can dry the skin.*
- ☞ Keep surfaces dry. Bacteria, viruses, mildew, and mold generally cannot live without dampness.

### Surface Cleaners

- ☞ Find a combination that works for you, and always keep some ready in a squirt bottle. You'll find that weak acids like vinegar & lemon juice are good at cutting grease. See Recipes in Appendix 1.
- ☞ For scrub powders, use baking soda, borax, or salt.
- ☞ Can also make a paste of borax and lemon juice.

## Drain Openers

Health effects: drain openers contain strong caustics (i.e. lye) that can cause severe burns if splashed on the skin or in the eyes.

- ☞ If you have used a drain cleaner, do not use any other method to unclog the drain until it is clear the drain cleaner no longer remains in the pipes.
- ☞ Put a strainer on all drains.
- ☞ Pour boiling water down the kitchen drain once a week to keep it grease free.
- ☞ To unclog drain, toss 1 Cup baking soda and 1 cup vinegar down the drain. Cover the drain, sealing in the carbon dioxide gas bubbles as they agitate your clog loose. Let sit 15 min. Rinse with 1 gallon boiling water.
- ☞ Clean drains weekly. See recipe 5 in Appendix 1.
- ☞ Most bathroom sink clogs are caused by hair. Prevent with a good sink strainer.
- ☞ Use a metal snake to unclog stubborn drains. A snake is a great investment.

## Glass Cleaners

Health effects: ammonia is an eye irritant, and can cause headaches and lung irritation.

Solutions:

- ☞ ¼ cup white vinegar in 1 qt. Water. Spray on, wipe or squeegee.
- ☞ For a stronger cleaner try equal amounts of vinegar and water. Spray on, wipe with newspapers.
- ☞ The pros use a squeeze of dishwashing liquid in 1 gallon water.
- ☞ A quality squeegee is the pro's secret to streakless windows.
- ☞ Car windows and mirrors: dissolve ½ cup cornstarch in 2 quarts warm water. Apply with sponge and dry with a lint-free cloth.

## Oven Cleaners

Health effects: Oven cleaners contain lye and other strong chemicals that can irritate and burn skin and eyes.

Solutions:

- ☞ Look for cleaning products that do not contain lye.
- ☞ Avoid aerosol oven cleaners. Easy-off brand has a non-caustic formula with no lye (sodium hydroxide).
- ☞ Mix 2 T. liquid dish soap & 2 tsp. borax in 2 cups of warm water. Apply and let sit for 20 min., then scrub.
- ☞ Warm oven, moisten spills with water, sprinkle with baking soda or salt, scrub.
- ☞ Make a paste of baking soda, salt, and water. Wipe on, rinse off.
- ☞ Can also use a non-chlorinated scouring powder, like Bon Ami.
- ☞ Clean glass oven door with Bon Ami. Use razor blade or spatula for tough spots.
- ☞ Don't use any abrasive cleaning materials on self-cleaning ovens.

Prevention: Periodically clean the oven with baking soda and water. Protect oven floor from spills. Always place a cookie sheet or foil pan under pans to catch drippings.

## Mildew Removers

- ☞ Scrub mildew spots with borax/water mix with a nylon scouring pad. If plaster wall is penetrated by mold, leave a borax/water paste on the wall for a couple days. Vacuum off.
- ☞ Try scrubbing mildew with a vinegar and salt paste, if problem is not severe.
- ☞ For more severe mold growth, try one of the cleaning solutions listed in Appendix 1.
- ☞ To clean mildew from a shower curtain use a mixture of ½ cup borax/1 gal water.
- ☞ Try vinegar full strength, then rinse.
- ☞ Machine wash curtain, with a towel. Add 1 cup vinegar to rinse cycle.

Prevention:

- ☞ Wash grout often enough so mold can't get established.
- ☞ Always air out damp areas.

- ☞ Seal grout after cleaning by painting grout with a water sealer.
- ☞ To inhibit mold and mildew, wash area with ½ cup borax to a gallon of hot water.
- ☞ Use a very dilute bleach solution of ¼ cup to 1 gal. water. Keep a small squeegee in the shower.

## Rug And Upholstery Cleaners

Health effects: These products may contain some chemicals which, when inhaled excessively, can cause anemia, liver damage, convulsions, and possible coma.

Solutions:

- ☞ Use soap or non-aerosol shampoo. Wear gloves and work in a well-ventilated area.
- ☞ Regular vacuuming will keep dirt from getting ground in.
- ☞ Clean up spill right away. Pour club soda on a spill and blot.
- ☞ Use a non-aerosol, soap-based cleaner.
- ☞ Use a home made carpet cleaner. See Appendix 1 for recipe.

## Toiletbowl Cleaners

Health Effects: Products available on the market can be made of toxic chemicals and strong acids.

- ☞ Avoid solid toilet bowl deodorizers that contain paradichlorobenzene (there is evidence that it causes cancer in laboratory animals).
- ☞ Some toiletbowl-cleaning products contain acids (read labels). If acids are mixed with a cleaner containing chlorine (like bleach), toxic chlorine gas is released.

Solution:

- ☞ Use mix of ½ cup borax / 1 gal. water to clean and deodorize.
- ☞ Let 1 cup borax sit in the bowl overnight.

- ☞ Coat stains in toiletbowl with paste of lemon juice and borax. Let sit about 20 min. and scrub with bowl brush.
- ☞ Clean frequently with a solution of baking soda and water; sprinkle baking soda around the rim.

## Tub & Sink Cleaner

- ☞ Use baking soda like a scouring cleanser. Use non-chlorinated cleanser (e.g. Bon Ami). Very effective and doesn't dissolve as fast as baking soda.
- ☞ Try fine grain wet/dry sandpaper (400 grit) to remove pot marks in porcelain sinks (gentler than common scouring cleansers).
- ☞ Chlorinated cleansers may still be necessary to remove stubborn stains in porcelain.
- ☞ *Caution: chlorinated cleansers contain bleach which can react with other cleaners that contain ammonia or acids, to form dangerous gases.*
- ☞ To remove mineral deposits around faucets, cover deposits with strips of paper towels, soaked in vinegar. Let sit for 1 hour and clean. *Note: Hard water means the water has a high mineral content (e.g. calcium, magnesium, iron, etc.). This often results in whitish mineral deposits left on faucets, shower doors, drains, windows. Vinegar, a weak acid, can dissolve many of these deposits.*

## Air Fresheners

Health effects: These products may contain chemicals that can irritate and burn skin and may cause cancer in animals. They also interfere with the natural sense of smell.

Solutions:

- ☞ Avoid products that contain paradichlorobenzene (evidence that it causes cancer in laboratory animals).
- ☞ Air fresheners/disinfectants don't disinfect the air when sprayed into the air. They are disinfectants only when sprayed on surfaces.
- ☞ Most air freshener products either mask the odor or contain chemicals that desensitize

tize your nose. They also contain chemicals that contribute to air pollution.

- ☞ If there is an odor, address the problem directly by cleaning or removing the cause.
- ☞ A dish of hot vinegar removes room odor.
- ☞ Open doors and windows.
- ☞ Improve ventilation.
- ☞ Use a stove fan when cooking.
- ☞ Leave baking soda in open containers in refrigerator, closets, and bathrooms.

To scent the air: Set out potpourri in open dishes; simmer cinnamon and cloves

### **Deodorizers**

- ☞ For carpets, sprinkle a mix of baking soda, borax and cornmeal liberally on carpet. Wait an hour or overnight. Vacuum.
- ☞ Sprinkle baking soda in the bottom of cat box before adding kitty litter.
- ☞ Sprinkle borax in the bottom of garbage cans to inhibit the growth of odor-producing molds and bacteria.

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## **Personal Hygiene and Cosmetic Products**

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We use cosmetics and hygiene products for a fairly narrow range of reasons: to keep skin moist and supple; to clean hair without stripping it of natural oils; to eliminate unpleasant body or mouth odors; to prevent skin oiliness and clogged skin pores; and simply for the pleasure of relaxing and pampering ourselves with body-care or facial-care treatments. Unfortunately, many of the products we use contain harmful ingredients.

- ☞ Fingernail polish contains a high percentage of solvents. If you use nail polish, apply it in a well-ventilated room. Nail polish remover is basically acetone which is poisonous if swallowed, and can cause blindness if splashed in eyes.

Solution:

- ☞ Moisturizers and conditioners: egg yolk, milk, yogurt, safflower oil (for light moisturizing), olive oil (for dry skin or hair), water, oatmeal, jojoba oil.

- ☞ Astringents/ after shaves: witch hazel, diluted isopropyl (rubbing) alcohol.
- ☞ Deodorants: baking soda, white clay, deodorant crystals.
- ☞ Toothpastes: baking soda, salt.
- ☞ Soaps cleansing agents: castile soap, olive-oil based soap. Look for soaps free of dyes and fragrances.
- ☞ Perfumes: essential oils provide non-toxic fragrances that can be used to scent shampoo, bath soaks, or even, in the case of peppermint, to flavor toothpaste.

Although it's easy to make healthful alternatives to many cosmetic and hygiene products, any natural-foods store has a fairly wide selection of shampoos, moisturizers, toothpastes, after shaves, soaps, and bath products that do not contain the harmful ingredients in many commercial preparations.

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## **Paints and Related Products**

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### **Paint**

- ☞ Use latex (water-based) paint instead of oil-based paint. Oil-based paints contain a high percentage of solvents which contrib-

ute to air pollution. You are exposed to solvent fumes while the oil paint dries.

- ☞ Calculate amount needed carefully.

- ☞ Patronize stores that will give you expert help. Many paint stores will take back unopened cans. Ask them.
- ☞ Use whitewash for barns, basements, and fences instead of paint. (A simple mix of hydrated lime & water - a less-toxic alternative to white paint.)
- ☞ Air out newly-painted bedrooms before people sleep there again.

### Brush Cleaners

- ☞ Clean brushes immediately after use. Wash out latex paint over a sink, not outside, in the gutter.
- ☞ Work mechanic's "waterless" hand cleaner into brush and wash with soap and water.
- ☞ Clean paint brushes hardened with dried oil-based paint by soaking in hot vinegar.

### Paint Thinners

- ☞ Avoid using oil-based paints which require solvent thinners for cleanup.

### Chemical Paint Strippers

- ☞ Avoid strippers containing methylene chloride and trichloroethylene (TCE) (evidence that these cause cancer in laboratory animals); benzene (known to cause cancer in humans); 1,1,1-trichloroethane (TCA) (irritant to eyes and tissues), xylene (toxic by drinking or breathing); or toluene (known to cause birth defects).
- ☞ To strip paint, use a heat gun, a paint scraper, or a sanding block with course sandpaper (wear safety goggles and a mask). Note: Stripping lead-based paint is dangerous and should be done by a professional. Inhaling the dust or vapors can cause lead poisoning.
- ☞ Water-soluble paint strippers are available that contain less-hazardous ingredients.

### Spray Paints

- ☞ Don't use aerosols. Aerosols make it more likely that the user will breathe in the paint.

The aerosol propellants contribute to air pollution.



### Wood Preservatives



- ☞ Do not use old products which contain pentachlorophenol (PCP) (evidence that it causes cancer in laboratory animals), creosote, tributyltin oxide, or folpet.
- ☞ Do not burn wood treated with wood preservatives. You'd be releasing the chemicals into the air. Old, treated, scrap wood can be taken to a landfill for disposal.
- ☞ Water-based preservatives are available that can seal wood and protect it from water rot and insects.
- ☞ A water sealer or polyurethane can prevent wood rot. Use types of wood (such as redwood and cedar) that are naturally resistant to insects and wood rot.

### Wood Stains & Finishes



- ☞ Use finishes derived from natural sources, such as shellac, tung oil, and linseed oil.
- ☞ Use water-based stains.
- ☞ Try the new less-toxic wood working compounds that are becoming available.




### Safe Handling Notes



- ☞ Many paint products contain petroleum based hydrocarbon solvents. Most of these solvents are poisonous if swallowed; cause skin irritations if splashed on skin; cause severe damage or blindness if splashed in eyes; and nausea, dizziness, headache, tremor, stupor, or disorientation if inhaled.
- ☞ Always wear gloves and protective goggles when handling paint products and wear a respirator approved for use with paints to avoid inhaling vapors (esp. strippers and thinners).
- ☞ Always work with paints and solvents in well-ventilated areas. Outside is best, but if you must work indoors, well-ventilated means two windows open, with a cross current, using a fan to carry fumes outside.



A respirator is appropriate if the project will last more than a few minutes.

-  Always air out room thoroughly before allowing others in
-  When finished for the day, remove clothes and launder immediately. Fumes can absorb on clothing and continue to cause exposure to the fumes as long as the clothes remain un-laundered.
-  Never use solvent containing paints or related products when pregnant or when small children are present. These populations are much more susceptible to the adverse health effects of this class of chemical.

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## APPENDIX 1: Recipes for a Healthy Home

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### Recipe 1: All-Purpose Cleaner I

4 tablespoons baking soda  
1 quart warm water

Dissolve baking soda in warm water. Apply with a sponge. Rinse with clear water.

### Recipe 2: All-Purpose Cleaner II

1 Quart hot water  
1 tsp. vegetable oil-based soap/detergent  
1 tsp. borax  
2 T. vinegar.

Mix well. Spray or sponge on surfaces. Rinse with clear water. Note: vinegar is used here as mild acid to cut grease; borax is used as a water softener, especially good in areas with hard water, to prevent soapy deposits.

### Recipe 3: All-Purpose Cleaner III

½ cup vinegar  
1 quart of warm water

Mix together. Apply with a sponge. Rinse with clear water.

### Recipe 4: Drain Cleaner\*

1 cup baking soda  
1 cup white vinegar  
Boiling water

Pour baking soda down the drain. Add white vinegar and cover the drain, if possible. Let set for 5 minutes. Then pour a kettle of boiling water down the drain.

\*Do not use this method if you have used a commercial drain opener and it may still be present in the drain.

### Recipe 5: Weekly Preventative for Drains

1 Cup baking soda  
1 Cup salt  
½ Cup cream of tartar

Combine ingredients. Pour ¼ cup down drain followed by 1 cup boiling water. Flush with cold water.

### Recipe 6: Mineral Deposit Remover

Soak paper towels in vinegar. Apply the paper towels to the lime deposits around the faucet. Leave them on for about one hour. The deposits will be softened and can be removed easily.

### Recipe 7: Aluminum Cleaner

2 tablespoons cream of tartar  
1 quart water

To clean aluminum cookware, combine ingredients in cookware. Bring solution to a boil and simmer for 10 minutes. Wash and dry as usual.

### Recipe 8: Brass Cleaner I

Lemon juice  
Baking soda

Make a paste the consistency of toothpaste. Rub onto brass with a soft cloth. Rinse with water and dry.

### Recipe 9: Brass Cleaner II

½ tsp. salt and  
½ cup white vinegar  
flour

Mix together to make a paste. Apply thickly. Let sit for 15 min - ½ hr. Rinse thoroughly with water to avoid corrosion.

**Recipe 10: Chrome & Stainless Steel Cleaner**

Dip soft cloth in undiluted white vinegar.  
Wipe surface.

**Recipe 11: Oven Cleaner**

Baking soda  
Very fine steel wool

Sprinkle water on oven surface. Apply baking soda. Rub using very fine steel wool. Wipe off scum with a damp sponge. Rinse well and dry.

**Recipe 12: Toilet Bowl Cleaner**

Borax\*  
Lemon juice

Mix lemon juice and borax to make a paste about the consistency of toothpaste. Flush toilet to wet sides. Rub paste on the toilet bowl ring. Let sit for 2 hours and then scrub thoroughly.

\*Borax is a toxic ingredient. Handle it with care and store it safely.

**Recipe 13: Soap Gel**

Dissolve 1 Cup shaved soap or soap flakes in 1 Quart boiling water. When entirely melted or dissolved, pour into a wide mouth jar. Let stand in a cool place until it gels.

**Recipe 14: Furniture Cleaner and Polish I**

3 Cups olive oil  
1 Cup vinegar

Mix together until well blended. Use a clean, soft cloth to apply to furniture.

**Recipe 15: Furniture Cleaner and Polish II**

2 Pints olive oil  
1 Pint lemon juice.

Mix together until well blended. Use a clean, soft cloth to apply to furniture.

**Recipe 16: Mildew Remover**

½ cup vinegar  
½ cup borax  
Warm water

Combine and spray on surface.

**Recipe 17: Heavy Duty Mildew Remover**

1 Quart bleach or oxalic acid  
1 Cup Trisodium phosphate  
3 Quarts warm water

Mix together. Sponge solution on surface. Scrub with brush. Rinse with clean water, then blot dry. Use a fan to help dry surface thoroughly.

**Recipe 18: Carpet Cleaner**

1 qt. warm water  
1 tsp. vegetable-oil-based soap/detergent  
1 tsp. borax  
splash of vinegar

Mix well and apply with a damp cloth or sponge and rub gently; blot.

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## APPENDIX 2 - Shopping List

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- Aluminum foil
- Art-gum eraser
- Baby oil (mineral oil)
- Baking soda
- Beeswax
- Biodegradable and vegetable oil-based liquid soap (e.g. Dr. Bronner's Castile Soap, Shaklee Basic H and Satin Sheen, Life Tree Home Soap, Bi-O-Kleen II, Murphy's Oil Soap)
- Bleach (small bottle for occasional use)
- Borax
- Chamois cloth
- Club soda
- Cold cream or shortening
- Cornmeal
- Cornstarch
- Cream of tartar
- Drain strainers
- Hydrogen peroxide
- Hydrogen peroxide-based liquid bleaches (e.g. Liquid Clorox 2, Vivid)
- Laundry soap (e.g. White King D Soap, Ivory Snow)
- Lemon juice
- Low-phosphate dishwasher powders (e.g. Kleer II (by Mountain Fresh), Life Tree and Bi-O-Kleen)
- No-phosphate liquid laundry detergents (these examples tested relatively low in polluting metals: e.g. Tide liquid, Cheer liquid, Cheer Free liquid, Shaklee Liquid L, Ecover Liquid, Purex Liquid)
- No-phosphate powder laundry detergents (these examples tested relatively low in polluting metals: e.g. Shaklee Basic L, Arm & Hammer powder, Purex powder)
- Non-chlorinated cleansers (e.g. Bon Ami)
- Non-chlorine dry bleach (e.g. Clorox 2 Dry Bleach, Shaklee Nature Bright, Arm & Hammer Dry Bleach)
- Nylon scouring pads
- Oils: linseed, olive, walnut, almond
- Petroleum jelly
- Razor blades (single edge, in a scraper holder)
- Rubbing alcohol (isopropyl)
- Sandpaper (very fine, wet/dry-400 grit) or emery board
- Scouring pads (copper and nylon)
- Squeegees (for windows or shower)
- Trisodium Phosphate (TSP.)
- Toothpaste, white
- Vegetable oil soap (e.g. Murphy's Oil Soap)
- Washing soda (sodium carbonate-find in drug stores and supermarkets)
- "Waterless" auto mechanic's hand cleaner (e.g. GooP)
- Water sealer (e.g. Thompson's Water Seal)
- White chalk
- White vinegar
- White wine