



To learn how to make your local school toxic-free, see the Green Flag School Program For Environmental Leadership at www.greenflagschools.org, or call (703) 237-2249.



A Guide to Non-Toxic Cleaning

For the Home

A Resource of the Child Proofing Our Communities Campaign,
a project of
The Center for Health, Environment & Justice

DID YOU KNOW?

According to the U.S. Environmental Protection Agency, of the **2,863** most commonly used chemicals...

Only 7% have complete toxicity data and 43% have NO toxicity information available

Commonly sold cleaning products can contain harmful chemicals, so protect yourself in your home, school, or workplace, using this guide.

This guide contains simple and cost-effective non-toxic cleaning alternatives and valuable information to make your home healthy and safe.

INSIDE YOU WILL FIND



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Healthy Home**



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to Avoid**



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Avoiding Exposure to Phthalates and VOCs

To reduce phthalate exposure:

Buy phthalate-free products if possible. Otherwise, limit exposure to products containing phthalates.

Look for “fragrance-free” products or those scented with essential oils.

Avoid all products made of vinyl or PVC plastic (marked with a “3” or “V” in the recycle symbol).



To reduce VOC exposure:



Choose “VOC-free” products whenever possible. Some of the most common VOCs are: *trichloromethane, benzene, toluene, formaldehyde and xylene.*

If VOC-free is not an option, find products with low concentrations. See the Minnesota Department of Health’s “Health Risk Values” table to see the thresholds of VOCs for significant health risks to humans. www.health.state.mn.us

COMMON CHEMICALS TO AVOID: Phthalates and VOCs

Phthalates (DEHP, DINP, DBP, DEP, DIP) are a class of chemicals primarily used to carry fragrances and to soften plastics. Since manufacturers are not required to list fragrance ingredients on product labels, a product that simply lists “fragrances” can contain phthalates. PVC plastic (also known as vinyl) contains phthalates.

Phthalates’ Effects: Phthalate exposures can cause developmental, reproductive and respiratory damage, altered liver and kidney function and asthma. Phthalates are absorbed into the body through inhalation, and are stored and accumulated in body fat. The accumulation of phthalates occurs over a lifetime, and phthalates are passed through breast milk to nursing children.

VOCs (volatile organic compounds) are used to dissolve other ingredients and to enhance cleaning power. These compounds enter the air during product use or application. There are hundreds of VOCs. The EPA estimated in 2004 that indoor air pollution levels can be up to 100 times higher than that of outdoor air, greatly due to the presence of VOCs in cleaning products.

VOCs’ Effects: VOCs aggravate asthma, irritate eyes, nose, throat, and skin, can cause respiratory problems, dizziness, and harm the liver and kidneys. Many VOC’s are known carcinogens and neurotoxins.

DRAIN & OVEN

typical commercial ingredients	non-toxic alternative
<p>Methylene chloride: Liver and kidney poison that accumulates in fatty tissues.</p> <p>Sodium hydroxide: A highly corrosive chemical that burns skin and can cause respiratory irritation or inflammation, hemorrhaging, and a shrunken gastrointestinal track.</p> <p>Ammonia: Can cause burns as well as skin, eye, and lung irritation.</p> <p>Ether-type solvents, petroleum distillates, and butyl cellosolve: Can damage the central nervous system and liver.</p> <p>Sodium hypochlorite: (see chlorine, page 12)</p>	<p>Drains: Prevent clogging by using drain screens. For stopped drains, pour 1/2 cup baking soda down the drain immediately followed by 1 cup vinegar. Wait 15 minutes. Rinse with boiling water. Repeat the procedure or let it sit overnight, as needed. Use a plumber’s “snake” for more serious cases.</p> <p>Ovens: Sprinkle baking soda 1/4 inch deep over the bottom of your oven. Spray with water until thoroughly damp, but not flooded. Let sit overnight, add water as necessary to maintain dampness. In the morning, the white baking soda residue left behind is easily wiped off, unlike commercial oven cleaner residue that is intensified the next time you use your oven.</p>

GLASS

typical commercial ingredients

2-butoxyethanol

(a.k.a. Butyl Cellosolve):

Considered damaging to the blood, central nervous system, kidney, and liver. Can irritate eyes, nose, and throat and can be absorbed through the skin or by inhalation.

Ammonia:

Can cause skin burns as well as skin, eye, and lung irritation.

non-toxic alternative

Glass Cleaner:

Mix warm water with either white vinegar or lemon juice in your own spray bottle. Cut waste and use a natural linen towel, other soft cloth, or newspapers for a better finish than paper towels.

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Avoiding Exposure to Dioxin and Chlorine

Buy paper products that are PCF (process chlorine free), TCF (totally chlorine free), or unbleached and those with the highest possible percentage of Post Consumer Waste.

Do Not Buy Products Made of or Packaged in PVC.

PVC plastic (also known as vinyl) is one of the most hazardous consumer products ever created. PVC releases dioxin throughout its entire lifecycle and leaches phthalates into the products it packages (see page 14 for more on phthalates). PVC products are marked with a “3” or “V” in their recycling triangle.

Avoid using chlorine bleach in the home.

See Page 9 for bleach alternatives.

Look for toilet paper & paper towels that are made with at least 80% total recycled content or 70% post-consumer content.

Look for facial tissue that is made with at least 60% total recycled content or 50% post-consumer content.

UNDERSTANDING THE CODES:

PCF - Processed Chlorine-Free: recycled paper whitened without chlorine.

TCF -Totally Chlorine-Free: virgin paper whitened without using chlorine.

ECF - Elemental Chlorine-Free: paper bleached with chlorine dioxide, not chlorine gas. (This process produces dioxin.)

Post-consumer content: The amount of material in a product that was used by consumers and then recycled into the product.

Pre-consumer content: The amount of material in a product that was recycled before being used by consumers (such as clippings left over when envelopes are cut from paper).

COMMON CHEMICALS TO AVOID: Dioxins and Chlorine

Dioxins are a highly toxic group of chemicals that build up in the food chain. They are unintended by-products of many industrial processes which involve chlorine (such as commercial paper bleaching). They enter the environment from industrial air emissions, wastewater discharges, disposal activities, PVC plastic production, and from burning materials that contain chlorine.

Dioxins' Effects: Dioxins are especially damaging to fetuses, babies and children. They harm children's development and cognitive and learning abilities. Dioxins have been shown to harm the immune, nervous and reproductive systems in adults, and are considered a human carcinogen.

Chlorine is in most commercial bleaches and is used industrially to whiten paper products, fabrics, and other goods.

Chlorine's Effects: Chlorine can react with organic matter in drinking water and produce *trihalomethanes* and *organochlorines* which can negatively affect the developmental, neurological and reproductive systems, and cause cancer. The industrial bleaching process generates carcinogens and mutagens such as *dioxins* and *furans* that are released into the air, soil, and water. Chlorine can create lethal fumes when combined with other cleaners, especially ammonia. Chlorine bleach is also highly abrasive – it can burn your eyes and skin.

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DETERGENT

typical commercial ingredients

Fragrance:

Manufacturers are not required to list fragrance ingredients on product labels, so a product that just lists "fragrances" could contain phthalates, which are hazardous chemicals used to carry scents (see pages 14 and 15).

Alkyphenol ethoxylates:

Suspected hormone disrupters.

Ethoxylated alcohols:

Can be contaminated with carcinogenic 1,4-dioxane.

Quaternium 15:

Used as a surfactant, disinfectant and deodorant. It is an alkyl ammonium chloride that releases formaldehyde, a toxic VOC (see pages 14 and 15).

non-toxic alternative

Use any of the following in addition to your non-toxic commercial laundry detergent for added benefits:

Laundry brightener:

Add 1/2 cup of strained lemon juice to the rinse cycle.

Fabric rinse:

Add 1/4 cup of vinegar to the washing machine's rinse cycle to remove detergent completely from clothes, eliminating that scratchy feel. This will not leave your clothes smelling like vinegar!

Detergent booster:

To reduce the amount of laundry detergent you need to use, add baking soda or washing soda, which softens the water and thus increases the detergent's power.

WOOD

typical commercial ingredients

FURNITURE POLISH & WOOD FLOOR CLEANERS

Nitrobenzene:

Can discolor the skin, cause breathing difficulties, vomiting, and death. Long-term exposure may cause liver damage.

Petroleum distillates or naphtha:

Includes a range of chemicals that are volatile (see VOCs, page 14) and can cause irritation of the lungs, eyes, nose and throat. Fumes may provoke asthma attacks. Long term exposure may affect the nervous system, skin, kidneys and liver.

Phenol:

Readily absorbed through the skin. May cause irritation of the eyes, nose and throat when inhaled.

non-toxic alternative

Furniture:

Combine 2 teaspoons olive oil, 20 drops of pure essential lemon oil, and 1/4 cup vinegar in a 16 oz spray-bottle. Mix well and apply using a soft cloth.

Wood Floors:

Apply a thin coat of equal parts oil and vinegar and rub in well, or;

Combine 1/8 cup liquid soap, 1/2 cup vinegar or lemon juice, 1/2 cup fragrant herbal tea, and 2 gallons warm water in a large bucket. Mop as usual.

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Specialty stores as well as your local supermarkets all carry alternatives to traditional brands.

Buy products that are:

Non-toxic

Biodegradable

Fragrance-free

Chlorine-free

Free of artificial colors

PVC free



Perchloroethylene, the most widely used chemical in **dry cleaning**, causes cancer in lab animals. People are exposed to the chemical where dry-cleaned goods are stored and while they wear dry-cleaned items. If your clothes are returned with a strong chemical smell, don't accept them until they are properly dried. Look for dry cleaners with alternative, non-toxic techniques such as wet cleaning or carbon dioxide systems.

What are Surfactants?

Surfactants is the common term for "Surface Active Agents" and is the active cleaning agent in a dirt-removing product. Most standard products use synthetic surfactants derived from petroleum, a non-renewable resource that is also slow to break down in the environment. Seek products that use vegetable-based surfactants instead.

SHOPPING TIPS



Suffer from Asthma?

Avoid products containing the following asthma triggers:
 Monoethanolamine, Chlorhexidine, Tall Oil or Rosin, Chloramine T or Ammonium Quaternary Disinfectants.

Artificial Colors

Fragrance is not the only dangerous additive. Some artificial colors can be toxic, too. *FD&C Blue 1* and *FD&C Green 3* are carcinogenic. *FD&C Red 3* and *FD&C Yellow 5* can cause allergic reactions and are weak carcinogens in animal studies.

Sponges treated with disinfectants (advertised to resist or kill odors) are ineffective and may promote the growth of resistant bacteria. Instead, use pure cellulose sponges not treated with synthetic disinfectants. They can be boiled or microwaved to retain sterility.

Look for products with the Green Seal.

Green Seal, Inc. is the only organization that comprehensively evaluates non-toxic products.



Companies are not required by law to list all product ingredients.

Purchase brands that advertise full ingredient disclosure so you know what you are bringing into your home!

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FRESHENERS

typical commercial ingredients

Cresols:

Nose and throat irritants that can also burn the eyes and skin. Repeated exposure can damage the kidneys and liver and cause loss of appetite, diarrhea, nausea, and reduced memory or concentration. High-level exposure can cause death.

Fragrance:

Manufacturers are not required to list fragrance ingredients on product labels, so a product that just lists "fragrances" could contain phthalates, which are hazardous chemicals used to carry scents (see pages 14 and 15).

Formaldehyde:

A suspected carcinogen that also burns skin and irritates the lungs, eyes, nose and throat. Some people with asthma are more sensitive to the effects of formaldehyde exposure.

non-toxic alternative

- Set out cedar blocks, an open box of baking soda or sachets of dried flowers and herbs.
- Simmer whole spices such as cinnamon sticks, cloves or allspice in water on the stovetop.
- Diffuse essential plant oils such as lemon verbena and lavender.

Synthetic air fresheners generally desensitize the nose and emit compounds that inhibit the sense of smell instead of eliminating the source of odor.

POLISHES

typical commercial ingredients

Petroleum distillates or naphtha:

Includes a range of chemicals that are volatile (see VOCs, page 14) and can cause irritation of the lungs, eyes, nose and throat. Fumes may provoke asthma attacks. Long term exposure may affect the nervous system, skin, kidneys and liver.

Silver nitrate:

Highly toxic and corrosive.

Chromic acid:

Highly toxic, poisons the liver and kidneys, and is a suspected carcinogen.

Triethanolamine (TEA):

Can cause allergic reactions and eye irritation. Can combine with nitrates added as preservatives to produce nitrosamines, which are potent carcinogens.

non-toxic alternative

Copper:

Fill squeezed lemon with coarse salt and use it as a sponge to clean your copper. The lemon will turn green and after a rinse the copper is clean!

Silver:

Line a container with aluminum foil, shiny side up, and place your silver in it. Add one tablespoon baking soda, one tablespoon salt and enough boiling water to cover. Wait a few seconds, remove, rinse and dry silver. For spot-cleaning, use white toothpaste.

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BATHROOMS

typical commercial ingredients

Hydrochloric & Phosphoric Acid:

Can burn skin and seriously damage eyes, nose and throat.

Para-dichlorobenzene:

A suspected carcinogen.

EDTA:

Does not readily biodegrade; can dissolve toxic heavy metals; causes allergic reactions.

2-butoxyethanol (a.k.a. Butyl Cellosolve):

Considered damaging to the blood, central nervous system, kidney, and liver. Can irritate eyes, nose, and throat and can be absorbed through the skin or by inhalation.

Ammonia:

Can cause skin burns as well as skin, eye, and lung irritation.

non-toxic alternative

Bleach:

Non-chlorine bleach, dry oxygen, hydrogen peroxide, white vinegar.

All-purpose cleaner:

4 tablespoon baking soda dissolved in 1 quart warm water or mixture of 1 part vinegar to 3 parts water.

All-purpose disinfectant:

Mix 2 teaspoons borax, 4 tablespoons vinegar, 1/4 teaspoons liquid castile soap and 3 cups hot water.

Tub and tile:

Mix 1 & 2/3 cups baking soda, 1/2 cup liquid castile soap and 1/2 cup water. Add 2 tablespoons vinegar.

Toilet bowl:

Pour 1 cup borax into the toilet, let sit overnight, scrub and flush. For extra-dirty jobs, add 1/4 cup vinegar to the borax.