# Section 2: Environmental Toxins

## A. Household Cleaners

An increasing numbers of studies have convinced experts that standard household cleaning products pose serious health and environmental risks. Unfortunately, due to regulatory standards set by the Consumer Product Safety Commission, under a 1960 Federal Hazardous Substances Labeling Act, the public has been left unaware of these hazards. This act allowed cleaning products to become exempt from listing the full ingredient on product labels.

Also there is an issue with trade secret laws, which exempt manufacturers from listing their ingredients to protect their formulas from being reproduced or stolen. These laws are so strong that even government and poison control centers are unable to break the code.[9] Such unlisted ingredients typically represent the majority of the product's formula and are usually the most toxic.

A third problem pointed is that manufacturers are not required to have their products tested for safety. According to an EPA report, 43% of all chemicals produced annually have no basic toxicity data, and only 50% have preliminary screening data. According to the U.S. National Research Council, "no toxic information is available for more than 80% of the chemicals in everyday-use products. Less than 20% have been tested for acute effects and less than 10% have been tested for chronic, reproductive or mutagenic effects."

Lastly, it's important to point out that the cleaning products used in big industries and in the work place are much safer than what is used in your home. This is because,

these commercial products fall under strict OSHA regulations, as opposed to the unregulated cleaning products in your home.

The International Agency for Research on Cancer and the World Health Organization have concluded that 80% of all cancers are attributed to environmental rather than genetic factors, including exposure to carcinogenic chemicals, many of which are found in household cleaning products.[10] In fact, the majority of carcinogens also induce other toxic effects, such as genetic, endocrine disruptive and reproductive, hematological and immune disorders, for which there are no incidence trend data comparable to those for cancer.[11]

Other common toxic chemicals found in our homes making their way into us and our children are…

- Formaldehyde
  - Found in furniture polishers, car cleaners, disinfectants, rug and upholstery cleaners and toilet bowl cleaners
  - It is a recognized carcinogen
  - Suspected as: Gastrointestinal or liver toxicant, Immunotoxicant, neurotoxicant, reproductive toxicant, respiratory toxicant, and skin or sensory organ toxicant.
- Ethylbenzene
  - Found in bathroom tub and tile cleaners, floor and furniture polish, laundry starch preparations, and rug upholstery cleaners.
  - Recognized as a carcinogen
  - Suspected as: Cardiovascualr or blood toxicant, developmental toxicant, endocrine toxicant, gastrointestinal or liver toxicant, kidney toxicant, neurotoxicant, reproductive toxicant, respiratory toxicant and skin or sensory organ toxicant.
- Petroleum Distillates (Petrochemicals)
  - Found in furniture polish and cleaners, lubricating oils, pet flea and tick products and collars, petroleum products, floor and furniture polish, dishwasher cleaners, aerosol sprays, and laundry detergents.
  - Suspected as: cardiovascular and blood toxicant, neurotoxicant, and respiratory toxicant, and damaging to mucus membrane.
- Chlorine

    - Found in dishwashing detergent, laundry detergent, kitchen and all-purpose cleaners.
    - *Note:* Any substances containing chlorine, when mixed with ammonia, toilet bowl cleaners or vinegar will produce deadly toxic fumes (chloramines or chlorine gas).[12]
    - Recognized as a carcinogen
    - Suspected as: Cardiovascular or blood toxicant, gastrointestinal or liver toxicant, kidney toxicant, neurotoxicant, respiratory toxicant, and skin or sensory organ toxicant.
- Benzene
    - Produced in high volume.
    - Used as optical brighteners (in surface cleaners, laundry and dishwashing detergents, surface polishers) and found in general performance sealants (PVAC, butyl, vinyl, etc.), laundry starch preparations, lubricating oils, scatter rugs, bathmats and bath sets.
    - Recognized as: carcinogen (leukemia), developmental toxicant, and reproductive toxicant.
    - Suspected as: cardiovascular or blood toxicant, endocrine toxicant, gastrointestinal or liver toxicant, immunotoxicant, neurotoxicant, respiratory toxicant, and skin or sensory organ toxicant.
- Butyl Cellosolve
    - Found in window cleaners and other all-purpose-cleaning products.
    - Has been shown to have toxic effects on the kidney and liver and is classified as a neurotoxin.[13]
- Phenol
    - Found in disinfectants, antibacterial, antiseptics, hard surface cleaners, paint and varnish removers, and synthetic resin and rubber adhesives.
    - Suspected as: Cardiovascular or blood toxicant, developmental toxicant, gastrointestinal or liver toxicant, kidney toxicant, neurotoxicant, reproductive toxicant, respiratory toxicant and skin or sensory organ toxicant.[14]

**The Toxic Top Ten**

1. Dishwashing Detergents

Researchers at the EPA and University of Texas found dishwasher liquid to be a significant source of toxic fumes in your home. When city water—which contains chlorine, fluoride and CBPs (chlorine byproducts found in the water) — combines with dish-washing detergents, (containing petrochemicals, benzene and phosphates) toxic vapors emanate through your home. According to researchers,

depending on the detergents used, the water quality, and the water temperature, dishwashers can reach 100% efficiency when it comes to transferring water pollutants and detergent chemicals into the air you breathe. This toxic vapor continually escapes from the dishwasher at a rate about 6 liters of air per minute, not to mention the single burst of contamination when you open the dishwasher.[15] By the way, the back label of these dishwashing liquids will warn users with "Harmful when swallowed," yet you swallow residues of the product every time you eat off of your dishes. The residue from the toxic vapor remains on your dishes and ends up in your body once you use them. These facts are the reason why dishwashers have earned the number one spot on our Toxic Top Ten list.[16]

2. Oven Cleaners

Oven cleaners made the number two spot on our list because they are considered by researchers to be one of the most toxic products people use. These products contain lye, ammonia, and other dangerous chemicals mentioned above that remain in your oven after cleaning. These residues are then released into your indoor air and food upon cooking. This happens much in the same ways of your dishwasher, but is not used as frequently.

3. Laundry Detergent

Laundry detergents made it into our top three because they contain almost every chemical mentioned in our harmful list above. Like our top two products,

these detergents leave behind residues. These chemicals remain on your clothes, bed sheets, covers, and towels which your skin absorbs directly into your body.

These detergents also contain optical brighteners, which are used in products to make surfaces and fabrics seem brighter and whiter. These products were designed to remain behind after cleaning to reflect light to achieve this brightness. At the same time, by being left behind, they are also picked up by us and our children.

The problem is that many of these brighteners derive from benzene, which is known to cause leukemia. After chronic exposure to benzene in the blood, this chemical damages bone marrow and causes a decrease in red blood cells, leading to anemia. It can also cause excessive bleeding and depress the immune system, increasing the chance of infection. Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. In animals, studies have shown low birth wights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.[17]

4. Floor and Furniture Polishes

If you take a look at the list of chemicals above, you will see furniture polishes as a host to a majority of those toxins. These polishes contain petroleum distillates that are highly flammable and have been known to cause liver cancer. Furniture polishes also contain optical brighteners, similar to those found in laundry detergents.

5. Air Fresheners

Beware of anything with synthetic fragrances which are present in any product used to make your home smell good. This includes both cleaning supplies and air fresheners. "A recent government report targeted these fragrances as one of six categories of chemicals that should be given the highest priority for neurotoxicity, testing along with insecticides, heavy metals, solvents, food additives, and air pollutants. Eighty-four percent of the ingredients used in fragrances have never been tested for human toxicity, or have only minimal testing." [18] These chemicals cause neurological damage, multiple-chemical sensitivity, allergic reactions, and increased immune response.

6. Hard-Surface Cleaners (Especially Kitchen Cleaners)

These cleaners leave behind harmful toxins that make their way directly into the foods we eat. (Again, look above for a list of the major harmful toxins included). These cleaners work so well because they use petroleum surfactants, which do a great job at breaking down grease and dirt. Unfortunately, they just as good of a job in breaking down your body tissues once ingested.

7. Antibacterial Cleaners and Soaps

Beware of products that contain the word "antibacterial." These products not only kill the bad bacteria, but also many of the good bacteria with which we live in harmony to keep germs and other bad bacteria at bay. Just like an

antibiotic taken internally, which kills the good as well as the bad bacteria and leaves you defenseless for your next infection, these cleaners can harm you more than defend you.

Also, because they are designed to kill microbes, antibacterial cleaners contain dangerous chemicals like triclosan, which is absorbed through the skin and can be tied to liver damage.

8. Dry Cleaning

Nintey-five percent of the 30,000 dry cleaning facilities in this country use the toxic chemical perchloroethylene (perc) as their primary cleaning solvent.[19] Perc is a known carcinogen[20] and exposure to perc, both short-term and long-term can have significant risks involved. Once you get the dry-cleaning clothes home, they continue to off-gas perc into the air, affecting not only you but also your family. The National Institute of Environmental Health Sciences states that: "Short-term exposure to PERC can cause adverse health effects on the nervous system that include dizziness, fatigue, headaches, sweating, incoordination, and unconsciousness. Long-term exposure can cause liver and kidney damage."

9. Carpet and upholstery cleaners

Carpet cleaners also contain perc and other extremely powerful (and thus harmful) chemicals designed to bust stains.

10. Toilet Bowl Cleaners

One of the active ingredients in your toilet bowl cleaners is hydrochloric acid, a highly corrosive irritant to both skin and eyes that damages kidneys and liver. This cleaner also contains hypochlorite bleach, another corrosive irritant that can burn your eyes, skin, and respiratory tract. Other health hazards include pulmonary edema, vomiting or coma if ingested. If in contact with other chemicals, fatal chlorine fumes could form.

***Solutions—Household Cleaners:***

**Products Resources:**

"Clean House, Clean Planet:" – (Cleaning Your House Pennies a Day—The Safe Nontoxic Way) A great book by Karen Logan, showing her readers how they can make effective cleaning products while following an affordable budget.

Drugstore.com—websites such as this one can provide safer alternative cleaning products. Some highly recommended brands are Seventh Generation and Ecover.

www.drugstore.com

Seventh Generation—Provides you with information on safer cleaning products.

www.seventhgeneration.com

Ecover—Provides you with information on safer cleaning products.

http://www.ecover.com

CHEC Net—Provides you with a list of safe products to use in your home, especially if you have children. This website is also a great resource to learn more on harmful chemicals and household products.

http://chec.greenhome.com/products/

http://www.checnet.org/safer_products/index.asp

# Section 11: References & Studies


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