

Avoid harmful ingredients whenever possible. Certain chemicals found in cleaning products can pose health and/or environmental risks. To minimize these risks and to choose the best cleaners for your household, avoid the ingredients listed below. (Note: this is not an exhaustive list and additional ingredients may be added as they come to light.)

- **Nonylphenol ethoxylates (NPEs).** When they're released into the environment, these chemicals can break down into toxic substances that can act as hormone disrupters, potentially threatening the reproductive capacity of fish, birds, and mammals. *Found in many cleaning products, especially detergents, stain removers, citrus cleaners, and disinfectants.*
- **Antibacterials.** Some **antibacterial** ingredients may cause skin and eye irritation, and certain types, such as triclosan, now found widely in the environment, may cause environmental harm by contributing to the emergence of antibiotic resistant bacteria. Some studies have also suggested that triclosan could form dioxin, a carcinogen, in the presence of sunlight, and chloroform, a probable human carcinogen, in the presence of chlorinated water. What's more, there's a growing consensus that antibacterial household cleaners *won't keep you any safer* from infectious illnesses than regular types. These findings may stem in part from the fact that most infections are caused by viruses, not bacteria. In fact, experts say, it's not the type of cleaner that matters in combating germs, but the frequency and thoroughness of cleaning; plain soap and hot water are generally enough to do the job. *Found in a variety of household cleaners; many products that carry the "antibacterial" label are actually disinfectants (see disinfectants below).*
- **Ammonia** - Poisonous when swallowed, extremely irritating to respiratory passages when inhaled; can burn skin on contact. (Note: Never mix ammonia-containing products with chlorine bleach. That produces a poisonous gas.) *Found in floor, bathroom, tile, and glass cleaners.*
- **Butyl cellosolve (also known as butyl glycol, ethylene glycol, monobutyl).** Poisonous when swallowed and a lung tissue irritant; damages bone marrow, the nervous system, kidneys and the liver. *Found in glass cleaners and all-purpose cleaners.*
- **Chlorine bleach (sodium hypochlorite).** Extremely irritating to the lungs and eyes. (Note: Never mix chlorine bleach products with ammonia. That produces a poisonous gas.) *Sold by itself and found in a variety of household cleaners.*
- **d-limonene.** Can irritate the skin. *Found in air fresheners.*
- **Diethanolamine (DEA) & triethanolamine (TEA).** These ingredients can produce carcinogenic compounds, which can penetrate the skin when combined with nitrosamines, an often-undisclosed preservative or contaminant. Some products are labeled "**DEA-free**" or "**TEA-free**", which are considered to be somewhat meaningful labels by CU. *Found in sudsing products, including detergents and cleaners.*
- **Disinfectants.** This is a catchall term for a variety of active ingredients, including chlorine bleach, alcohol, quaternary compounds, and pine oil and ethyl alcohol. They are regulated by the EPA as pesticides and all have some health effects. Most can also cause problems in waterways by killing helpful bacteria. *Found in a variety of household cleaners; many products that carry the "antibacterial" label are also disinfectants.*
- **Formaldehyde (a preservative in many products):** suspected human carcinogen; strong irritant to eyes, throat, skin, and lungs.
- **Fragrances.** May cause water eyes and respiratory tract irritation. Some products are labeled "fragrance free", which CU does not consider to be a meaningful label. *Found in a variety of cleaners and air fresheners.*
- **Hydrochloric acid or Sodium Acid Sulfate.** Can severely burn skin, irritate eyes and respiratory tract; may cause vomiting diarrhea and stomach burns if swallowed; also can cause blindness if inadvertently splashed in the eyes.

- **Hydrochloric acid** or **Sodium Acid Sulfate** (*in toilet bowl cleaner*): either can burn the skin or
- **Naptha**. Can cause headaches, nausea, and central-nervous-system symptoms with overexposure. *Found in furniture and floor polish and glass cleaners.*
- **Naphthalene** or **Para dichlorobenzene** (*in mothballs*): naphthalene is a suspected human carcinogen that may damage eyes, blood, liver, kidneys, skin, and the central nervous system; Para dichlorobenzene can harm the central nervous system, liver, and kidneys.
- **Nonylphenol ethoxylate** - a common surfactant (detergent) found in laundry detergents and all-purpose cleaners, is banned in Europe; it has been shown to biodegrade slowly into even more toxic compounds.
- **Petroleum-based ingredients**. Many ingredients are derived from petroleum, including some of those above such as APEs and naptha, and they're commonly found in many cleaning products as surfactants. Other toxic ingredients derived from petroleum, including formaldehyde, can also be present at trace levels in cleaning products. *Found in a variety of household cleaners.*
- **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.
- **Phenol** and **Cresol** (*in disinfectants*): corrosive; can cause diarrhea, fainting, dizziness, and kidney and liver damage.
- **Phosphates**. Can reach waterways and contribute to the overgrowth of algae and aquatic weeds, which can kill off fish populations and other aquatic life. Some products are labeled "phosphate-free", which is considered to be a somewhat meaningful label by CU. *Found in automatic dishwasher detergents and some laundry detergents.* Phosphate-free listed items can legally contain up to 1% phosphates.
- **Sodium hydroxide (lye)**. Corrosive and extremely irritating to eyes, nose, and throat and can burn those tissues on contact. *Found in drain, metal, and oven cleaners.*
- **Sodium hypochlorite** (*in chlorine bleach*): if mixed with ammonia, releases toxic chloramine gas. Short-term exposure may cause mild asthmatic symptoms or more serious respiratory problems.
- **Sulfuric acid**. Can severely damage eyes, lungs, and skin. *Found in drain cleaners.*
- **Surfactants** – create suds in all soaps and detergents. These attach to the gills of fish, which can suffocate them.
- **Zinc/Copper** –found in wood preservatives and moss killers, toxic to marine life
- **Volatile Organic Compounds (VOCs)** are gas-emitting chemicals widely used in household products such as cleaners, polishes, disinfectants and degreasers and "may have short - and long-term adverse health effects." Concentration of these chemicals can be up to ten times higher indoors than outdoors and pose health risks including irritation, nausea, liver, kidney, and central nervous system damage, and cancer. In addition they also harm the environment by entering the water supply

Sources: Consumer Reports, Greener Choices (<http://www.greenerchoices.org>); WSU Shoreline Stuarts Newsletter, January 2007, Issue No. 27; Environmental Protection Agency, www.epa.gov; Department of Ecology, Toxic Free Tips, <http://www.ecy.wa.gov/toxicfreetips/hazSubA-Z.html>.