

# Common Hazardous Ingredients in Household Cleaning Products.

## Part 2

### **Air Freshener, Deodorizer, Odor Remover**

Far from freshening air, chemical-based air fresheners and deodorizers add dangerous chemicals to the air we breathe. Air freshener's work by using a nerve-deadening chemical that interferes with our sense of smell, by coating nasal passage with an oily film, by masking an offending odor with a different odor, or by deactivating the odor. Air fresheners are made from a number of chemicals including formaldehyde, a carcinogen and sensitizer, naphthalene, a suspected carcinogen, xylene, a neurotoxin and possible reproductive toxin, butane gas, a neurotoxin, cresol, ethanol, phenol and strong fragrances. Some solid deodorizers include the pesticide paradichlorobenzene, a carcinogen that can also cause liver and kidney damage. Aerosol air fresheners release chemicals as tiny particles, which can be inhaled deeply into lungs and transferred into the blood stream. Plug in air fresheners break chemicals into even smaller particles.

### **All-Purpose Cleaner**

Cleaners may contain ammonia, a strong irritant which can also cause kidney and liver damage, butyl cell solve which is neurotoxin and rapidly penetrates skin, and ortho phenyl phenol which is a severe eye and skin irritant. Many all-purpose cleaners contain DEA and TEA, which can react with nitrites (added as undisclosed preservatives or present as contaminants) to form carcinogenic nitrosamines, which readily penetrate the skin. Many colored products are made with carcinogenic coal tar colors. Hormone disrupting parabens may be used as preservatives. Many cleaners also include fragrances and detergents. Alternative brands may contain d-limonene, a sensitizer that can also cause respiratory distress as well as liver, kidney and nervous system damage. D-limonene is a hazardous substance, although it is derived from a natural source. We do not recommend it for frequent use.

### **Bleach**

The main ingredient in chlorine bleach is sodium hypochlorite (chlorine added to lye.) Chlorine is toxic as a skin irritant, and by inhalation. Sodium hypochlorite can create poisonous chlorine gas if mixed with ammonia (which may be an unlabeled ingredient in some cleaning products) or with vinegar. Workplace safety data sheets warn that sodium hypochlorite may be a neurotoxin and cause liver damage. People with chemical sensitive report adverse reactions to minute quantities of chlorine. Sodium hypochlorite readily combines with organic matter to form organ chlorines, which are highly toxic to aquatic life.

## **Carpet Cleaner**

Carpet cleaners can contain perchloroethylene, a known human carcinogen that can have immediate central nervous system (CNS) effects including dizziness, sleepiness, nausea, tremors and disorientation as well as long-term CNS effects. Naphthalene, which the Condensed Chemical Dictionary describes as "toxic by inhalation" is another common ingredient. Carpet cleaners may also include butyl cello solve, a central nervous system toxin, propylene glycol methyl ether which is an eye, skin and respiratory irritant, aliphatic petroleum solvent which is neurotoxin and isopropyl alcohol which is carcinogenic at high concentrations. They may also include detergents, which can irritate skin, the carcinogen<sup>1</sup>, 4-dioxane, ethanol, ammonia and fragrances. In areas where there is a large quantity of carpet, the amount of chemicals released from carpet cleaners and deodorizers can be considerable.

## **Dishwashing Liquid (Hand)**

Most dishwashing liquids contain detergents, coal tar based colors, and artificial fragrance. They may contain Quarternium 15, an eye and skin irritant, which can release carcinogenic formaldehyde. If the label says, "Do not use with chlorine bleach", then the product probably contains ammonia. Many dyes are known to be carcinogenic; they can penetrate the skin and be deposited on dishes. Conventional detergents are petroleum-based.

## **Dishwasher Detergents**

Many dishwasher detergents contain dry chlorine, which is activated when dissolved in water. Chlorine fumes in the steam that leaks from dishwashers may cause eye irritation and difficulty breathing. Dishwasher detergents may also contain quarternium 15, an eye and skin irritant and an allergen, which can release carcinogenic formaldehyde. Dyes and artificial fragrances are common ingredients.

## **Fabric Softener**

Fabric softeners are designed to reduce static in synthetic fabrics. They serve no purpose with natural fabrics. Fabric softeners may contain quarternary ammonium compounds (quats) and imidazolidinyl, both of which are known formaldehyde releasers. For about 5% of people, quats are an extreme sensitizer. They may cause a variety of asthma-like symptoms, including respiratory arrest. Exposure to formaldehyde can cause joint pain, depression, headaches, chronic fatigue and a variety of other symptoms. In lab tests formaldehyde has caused cancer and damaged DNA. Both quaternium and imidazolidinyl can cause contact dermatitis. Fabric softeners work by leaving a residue on the fabric, which never completely washes out. It can cause allergic reactions through skin contact and inhalation. Fabric softeners may also contain carcinogenic coal-tar dyes, ammonia and very strong scents. When fabric softeners are exposed to hot water, heat from dryers or ironing, vapors may be emitted which can be deeply inhaled, increasing their impact.

## Disinfectant

It's doubtful whether disinfectants are needed at all for most household uses. Ordinary cleanliness is sufficient to eliminate hazardous bacteria. Soap, water and rubbing (the old "wash your hands" requirement) are the best method to prevent disease. The fad for disinfectants and anti-bacterial is based on a false fear of germs. Homes do not require the same types of cleaning as hospitals, where disease and infection is common.

Besides being a waste of money, some brands of disinfectants use highly caustic chemicals like sodium hydroxide, sodium hypochlorite and phosphoric acid that can burn eyes and skin. Breathing vapors can burn lungs. Disinfectants may also contain phenols which can damage DNA as well as the liver, kidney and nervous systems, cresol, a suspected carcinogen and respiratory toxin, formaldehyde, a carcinogen, sensitizer and suspected central nervous system depressant, chlorine, a lung irritant, and alcohol. There are more than 300 different active ingredients approved for use in anti-microbial products, ingredients classified by the EPA as pesticides, because they kill microbes. In the *Journal of Emerging Infectious Diseases*, Dr. Elaine Larson wrote that because of potential health risks, antibacterial agents and disinfectants should be reserved for hospitals and home care of patients with suppressed immune systems.

Scientists are also concerned that products containing antibacterial and anti-microbial agents kill beneficial bacteria and contribute to the creation of antibiotic-resistant bacteria. Antibacterial agents will kill not all bacteria. The surviving bacteria are resistant to antibiotics and go on to produce new generations of resistant bacteria. Triclosan, one of the most popular antibacterial agents, creates dioxin, a carcinogen, as a by-product. Triclosan is a derivative of 2,4-D, an herbicide. There is concern that use of antibacterial products may affect human health. A Swedish study found high levels of this bactericide in human breast milk. See also [anti-bacterial](#).

## Floor Cleaner, Wax, Polish

Conventional products often contain mineral spirits and petroleum solvents, both of which are neurotoxin and can cause severe eye and skin irritation as well as Stoddard solvent, which is also neurotoxin. Petroleum solvents may contain traces of carcinogenic benzene. Some wax removers with ammonia contain tripropylene glycol monomethyl ether, which can cause narcosis, and kidney injury with repeated and prolonged skin exposure.

## Floor and Furniture Polish

Floor and furniture polishes can contain nitrobenzene, a carcinogen, reproductive toxin and central nervous system toxicant which can be absorbed through the skin, phenol, a carcinogen and severe skin irritant, as well as propane, butane gas, aliphatic naphtha, petroleum distillates, white mineral oil and turpentine which are all neurotoxins, and may also be eye or skin irritants. Polishes may contain morphine, a severe irritant that may cause kidney damage, as well as ammonia, detergents, and synthetic fragrance. Aerosol products create microscopic particles that can be inhaled deeply into lungs and transferred to the bloodstream. Some products contain carcinogenic formaldehyde and nitrosamines.

## **Glass Cleaner**

Most glass cleaners are made of ammonia, a strong irritant, and coal tar dyes. Some contain butyl cell solve, a neurotoxin, alcohol, naphtha, and glycol ethers. Some contain wax. Aerosol products create small particles, which are more likely to be inhaled or irritate eyes. Consumer Reports found plain water to be more effective than half the glass cleaners on the market.

## **Heavy Duty Cleaner**

Heavy-duty cleaners may contain petroleum distillates, which are neurotoxin and are eye, skin and respiratory irritants. They may contain traces of carcinogenic benzene.

## **Laundry Detergent**

Most detergents are derived from petrochemical ingredients. They may contain bleaches, synthetic whiteners, and chemical fragrances, even in some so-called "fragrance free" brands. Some detergents may contain ammonia, ethanol, naphthalene and phenol. Many liquid brands contain ethoxylated alcohols, which can be contaminated with carcinogenic 1,4-dioxane. Detergent residues on clothes and bed linens can be a source of skin irritation, and lingering scents from scented products can cause respiratory and other reactions in both the user and others. Petroleum-based detergents cause more household poisonings than any other household product, (when eaten by children.) Laundry soaps, available as bar soaps or flakes, are usually made from natural minerals and fats and tend to be less toxic than conventional

## **Laundry Stain Remover**

Some conventional products contain benzene, toluene and xylene, all neurotoxins, as well as formaldehyde, a carcinogen, and chlorine, a sensitizer.

## **Laundry Starch**

Avoid aerosol products. Fine droplets of spray can be inhaled deeply into lungs and transferred to the bloodstream. Spray starch is mostly cornstarch, but some brands may contain formaldehyde, phenol, and pentachlorophenol.

## **Lime or Mineral Remover**

Some lime removers contain highly caustic sodium hypochlorite and phosphoric acid, which are very irritating to lungs and dangerous for people with asthma and heart disease.

## **Metal Cleaner/Polish**

Conventional products may contain ethylene glycol, a neurotoxin, reproductive toxin and respiratory irritant, which can cause kidney blood and possibly liver damage and which is absorbed through the skin. They may also contain ammonia, a respiratory irritant, 1,1, 1-trichloroethane, which is a neurotoxin and eye and skin irritant, and TEA, which can combine with preserving agents to form carcinogenic nitrosamines. Synthetic fragrances may also be an ingredient in these products. Many tried and true recipes for homemade metal cleaners/polishes are available. See Debra Lynn *Dad's Home Safe Home* and *Non-toxic, Natural and Earth wise* for additional recipes.

## **Mold and Mildew Cleaners**

Mold and mildew cleaners can contain formaldehyde, a carcinogen and sensitizer, phenol, kerosene, pentachlorophenol, chlorine and fungicides. The Environmental Protection Agency has classified more than 300 different active ingredients found in antimicrobial products including mould and mildew cleaners as pesticides. Although labels often warn that these cleaners can be hazardous as eye irritants, they are often sold as aerosol sprays, creating fine mists which can be deeply inhaled or contact eyes. See also, anti-bacterial.

## **Oven Cleaner**

Conventional oven cleaners create toxic fumes that can burn eyes, skin and internal organs. Lye and ammonia are often the cleaning agents and they are especially dangerous in aerosols.

## **Scouring Powder**

Most scouring powders contain bleach, a sensitizer, crystalline silica, a carcinogen, and oxalic acid dehydrate, an allergen. All three substances are also strong irritants. Bleach can upset the balance in septic tanks by killing helpful bacteria.

## **Sink, Tub and Tile**

Sink, tub and tile cleaners can contain ammonia and dimethyl ethylbenzylammonium chloride, both strong irritants, ethylene glycol, a neurotoxin and reproductive toxin which may also cause kidney and liver damage, sodium orth-phenylphenol, a carcinogen and irritant, and trisodium nitrilotriacetate, a carcinogen. Some brands use highly caustic chemicals like sodium hydroxide, sodium hypochlorite (bleach) and phosphoric acid that can burn eyes and skin. Breathing vapors can burn lungs.

## **Spot Remover**

Spot removers are often made with highly toxic petrochemical solvents including toluene and xylene which are neurotoxins and can cause reproductive damage, tetrachloroethylene (perchloroethylene) which is carcinogenic, neurotoxic and an eye and skin irritant, and petroleum distillates which can cause eye, skin and respiratory irritation and is neurotoxic. They may also include petroleum spirits, sodium dithionite, TEA, and 1,1,1-trichloroethane.

## **Toilet Bowl Cleaner and Deodorizer**

Many toilet bowl cleaners are often highly caustic and form toxic gases when mixed with water. They can contain ammonium chloride, a corrosive, 1,4-dichlorobenzene, a carcinogenic pesticide which can cause liver and kidney damage, hydrochloric acid, whose vapors can cause coughing and breathing difficulties, and sodium dichloroisocyanurate dehydrate which is a severe eye, skin and respiratory irritant, which can form carcinogenic chlorine gas. Sulfate-based products containing sodium sulfate or sodium bisulfate may cause asthmatic attacks.

## **Upholstery Cleaner**

Upholstery cleaners may contain similar products to dry cleaning solutions. They may contain perchloroethylene, a known carcinogen and central nervous system toxicant and naphthalene, a suspected carcinogen considered "toxic by inhalation" (Condensed Chemical Dictionary). They may also contain ethanol, ammonia and detergents. Aerosol products should especially be avoided.