

## **ECOSense ~ Chemicals, the Hidden Poisons in Your Home**

You may be considering a total renovation, room addition, finishing a basement, making improvements to kitchen and baths, general cleaning, and/or shampooing rugs. Perhaps you plan to weed your lawn and put in new. Maybe you will add on a deck or patio, build a storage shed, scrape, paint, or stain. Whatever home improvement or addition project you undertake, more than likely it will involve the use of chemicals, compounds you or a hired contractor will use.

Chemicals make our lives easier, make our living space beautiful, and make the air fragrant and pleasing. These chemicals, however, can also be dangerous or deadly. Educating yourself about what and where they are, their proper use, and potential alternatives can eliminate toxic chemicals in your home and protect your health as well as the health of your pets.

Most paints give off volatile organic compounds (VOCs), chemicals that evaporate in the air and could lead to health problems. Some stains, varnishes, thinners, and strippers contain benzene, a known carcinogen.

Old lead-based paint is the most significant source of lead exposure in the US today. Harmful exposures to lead can be created when lead-based paint is improperly removed from surfaces by dry scraping, sanding, or open-flame burning. Lead dust can enter homes from outdoor sources such as drinking water, food, contaminated soil, dust, air, and deteriorating paint, and can also be introduced in the home through the use of lead in certain indoor activities, such as soldering and stained-glass making.

When working with or purchasing building materials, be on the lookout for asbestos, commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials and is most commonly found in older homes, in pipe and furnace insulation materials, asbestos shingles, and floor tiles. Many products are in use today that contain asbestos.

Formaldehyde, a chemical used widely in the manufacturing building material is found in pressed wood products made for indoors use including particleboard (used in sub-flooring and shelving and in cabinetry and furniture); hardwood plywood paneling (used for decorative wall covering and used in cabinets and furniture); and medium-density fiberboard used for drawer fronts, cabinets, and furniture tops. This material is not limited in its use and can be found even in the construction of high-end kitchen and bathroom cabinets.

Heating and cooking equipment are sources of combustion gases. Products such as unvented kerosene, gas, or space heaters; woodstoves; fireplaces; and gas stoves are major contributors of pollutants such as carbon monoxide (a colorless, odorless gas that interferes with the delivery of oxygen throughout the body), nitrogen dioxide (a colorless, odorless gas that irritates the mucous membranes in the eye, nose, and throat and causes shortness of breath), and particles (released when fuels are incompletely burned and can lodge in the lungs and irritate or damage lung tissue). These pollutants also come from chimneys and flues that are improperly installed or maintained and cracked furnace heat exchangers. Outdoors building material often made with pressure-treated wood is typically treated with an arsenic-based pesticide that keeps the wood from rotting. Arsenic is a known carcinogen.

Pesticides used in and around the home include insecticides, termiticides, rodenticides, fungicides, and disinfectants. They are sold as sprays, liquids, sticks, powders, crystals, ball, and foggers. Other possible sources include contaminated soil or dust that floats or is tracked in from outside, stored pesticide containers, and household surfaces that collect and then release the pesticides.

Some people experience symptoms soon after exposure to specific chemicals; for others, symptoms may not appear until months or years later. Skin, eye, throat, or lung irritation; headaches; drowsiness; dizziness; weakness; nausea; confusion; disorientation; fatigue; loss of coordination; and vision problems are among the immediate symptoms in healthy people, and episodes of increased chest pain in people with chronic heart disease. Some chemicals cause cancer or reproductive and developmental effects in laboratory animals, unconsciousness, and death. Other chemicals create a hazard because they catch fire easily.

Symptoms of carbon monoxide poisoning are sometimes confused with the flu or food poisoning. Fetuses, infants, elderly people, and people with anemia or with a history of heart or respiratory disease can be especially sensitive to chemicals of all sorts. Because of these concerns, susceptible people, such as young children and individuals with breathing problems, should avoid paint vapors.

To avoid any health risks to themselves and their unborn babies, pregnant women should avoid undertaking painting projects and should limit their time in freshly painted rooms, especially when oil-based paints are being used.

Reduce your exposure to harmful chemicals by choosing safer alternatives, such as milk paint (contains no toxic material), paints with no or low volatile organic compounds, water-based stains, and finishes derived from natural sources. Instead of chemical strippers, use a heat gun, paint scraper, or sanding block with course sandpaper. Seal grout after cleaning by painting grout with water-based sealer. Use natural wood (cedar and redwood are naturally resistant to insects and wood rot) and water-based preservatives, which are available to seal wood and protect it from rot and insects. Try the new, less-toxic woodworking compounds

Always read and pay attention to warnings on labels. Contact manufacturers directly to get clarification on ingredients, mixed combinations, or proposed uses. Ingredients to look for and avoid include the following: pentachlorophenol (PCP), nitrobenzene, petroleum distillates, methylene chloride, trichloroethylene, trichloroethane, xylene, toluene, and petroleum-based hydrocarbon solvents.

**Suggestions for safer use of chemicals:**

- \* Use electrical heating, cooling, and cooking
- \* Use a stove fan or open windows when cooking
- \* Select products that are fragrance free
- \* Avoid aerosol disinfectants
- \* Use soap or non-aerosol shampoo
- \* Remove and wash clothing immediately after use
- \* Always wear gloves, goggles, a respirator (approved for use with paints), or a mask
- \* Always ventilate work areas
- \* Buy only the amount you need—avoid having to store them
- \* Properly handle and store materials
- \* Do not burn wood treated with wood preservatives
- \* Dispose of household hazardous waste legally and safely

**Selected sources**

- Connecticut State Health Department [www.ct.gov](http://www.ct.gov)
- The US Environmental Protection Agency [www.epa.gov](http://www.epa.gov)
- The Bay Area Working Group on Precautionary Principle [www.takingprecaution.org](http://www.takingprecaution.org)
- Health & Environment Resource Center <http://www.herc.org>
- The Milk Paint Company [www.milkpaint.com](http://www.milkpaint.com)
- National Geographic, October 2007, Pollution within, David Ewing Duncan [www.ngm.com/0610](http://www.ngm.com/0610)

*This article was donated by Dawna M. Glave , the Founder of Cera International, a company that provides Wellness Solutions for Women. She can be reached at [dawna@theeatingwell.com](mailto:dawna@theeatingwell.com) or 860-218-9735.*

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