

Volatile Organic Compounds are Common Houseguests

Information from the United States Environmental Protection Agency



What's the Problem?

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short and long-term adverse health effects. Levels of many VOCs are very often higher indoors (up to 10 times higher) than outdoors. VOCs are emitted by a wide variety of products that number in the thousands.



Organic chemicals are widely used as ingredients in household products. Paints, varnishes and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.



Common Sources

Household products, including:

- paints, paint strippers & other solvents
- wood preservatives
- aerosol sprays
- cleansers and disinfectants
- moth repellents and air fresheners
- stored fuels and automotive products
- hobby supplies
- dry-cleaned clothing
- pesticide



Other products, including:

- building materials and furnishings
- office products like copiers & printers, correction fluids
- craft materials including glues and adhesives, permanent markers and photographic solutions.



Health Effects

Health effects may include:

- eye, nose and throat irritation
- headaches, loss of coordination & nausea
- damage to liver, kidney & central nervous system
- some organics can cause cancer in animals, some are suspected or known to cause cancer in humans.

Key signs or symptoms associated with exposure to VOCs include:

- irritation of the lining of the eyes
- nose & throat discomfort
- headache
- allergic skin reaction
- difficult breathing
- declines in serum cholinesterase levels
- nausea with or without vomiting
- nosebleeds
- fatigue
- dizziness

The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effect.

As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed.

At present, not much is known about what health effects occur from the levels of organics usually found in homes.

Steps to Reduce Exposure

- Increase ventilation when using products that emit VOCs.
- Meet or exceed any label precautions.
- Do not store opened containers of unused paints and similar materials within the school.
- Formaldehyde, one of the best known VOCs, is one of the few indoor air pollutants that can be readily measured.
- Identify, and if possible, remove the source.
- If not possible to remove, reduce exposure by using a sealant on all exposed surfaces of paneling and other furnishings.
- Use integrated pest management techniques to reduce the need for pesticides.
- Use household products according to manufacturer's directions.
- Make sure you provide plenty of fresh air when using these products.
- Throw away unused or little-used containers safely; buy in quantities that you will use soon.
- Keep out of reach of children and pets.

Never mix household care products unless directed on the label.

Follow label instructions carefully.

Potentially hazardous products often have warnings aimed at reducing exposure of the user. For example, if a label says to use the product in a well-ventilated area, go outdoors or in areas equipped with an exhaust fan to use it. Otherwise, open up windows to provide the maximum amount of outdoor air possible.

Throw away partially full containers of old or unneeded chemicals safely.

Because gases can leak even from closed containers, this single step could help lower concentrations of organic chemicals in your home. *Don't simply toss unwanted products in the garbage can. See if your local government or other group in your community sponsors special days or location for the collection of toxic household wastes. (i.e. in Summit County look up **ReWorks**.) Use these services.*

Buy limited quantities.

If you use products only occasionally or seasonally, such as paints, paint strippers and kerosene for space heaters or gasoline for lawn mowers, buy only as much as you will use right away.

Keep exposure to benzene to a minimum.

Benzene is a known human carcinogen. The main indoor sources of this chemical are:

- environmental tobacco smoke
- stored fuels
- paint supplies
- automobile emissions in attached garages

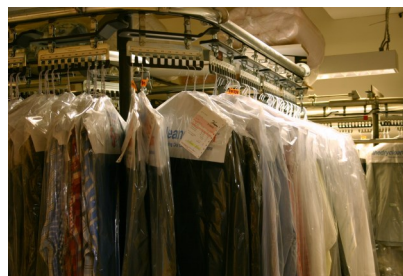
Actions to reduce benzene exposure include:

- eliminating smoking within the home
- provide maximum ventilation during painting
- discarding paint supplies and special fuels that will not be used immediately

Keep exposure to emissions from newly dry-cleaned materials to a minimum.

Perchloroethylene is the chemical most widely used in dry cleaning. In laboratory studies, it has been shown to cause cancer in animals. Recent studies indicate that people breathe low levels of this chemical both in homes where dry-cleaned goods are stored and as they wear dry-cleaned clothing. Taking steps to minimize your exposure to this chemical is prudent.

- If dry-cleaned goods have a strong chemical odor when you pick them up, do not accept them until they have been properly dried.
- If goods with a chemical odor are returned to you on subsequent visits, try a different dry cleaner.



For more information contact the local air agency,
Akron Regional Air Quality Management District at
330.375.2480 or visit the website: www.araqmd.org.



Akron Regional Air Quality Management District is a service of Summit County Public Health serving Medina, Summit & Portage Counties.

1867 W. Market Street - Akron, OH - 44313

