

Indoor Air Quality: Volatile Organic Compounds (VOCs)

What are volatile organic compounds (VOCs)?

Volatile organic compounds (VOCs) are gases that are given off by a number of indoor sources. Concentrations of most volatile organic compounds are higher in indoor air than outdoor air.

Where do VOCs come from?

Formaldehyde is one of the most common VOCs. Formaldehyde is a colourless gas with a strong smell. It is common in many building materials such as plywood, particleboard, and glues. Formaldehyde can also be found in some drapes and fabrics, in addition to certain types of foam insulation.

Other sources of VOCs include the burning of fuels such as gas, wood and kerosene, as well as tobacco products. VOCs can also come from personal care products such as perfume and hair spray, cleaning agents, dry cleaning fluid, paints, lacquers, varnishes, hobby supplies, and from copying and printing machines.

VOCs can be released from products during use and even in storage. However, the amount of VOCs emitted from products tends to decrease as the product ages.

What are some health concerns caused by VOCs?

VOCs include a variety of chemicals that can cause eye, nose and throat irritation, shortness of breath, headaches, fatigue, nausea, dizziness, and skin problems. Higher concentrations may cause irritation of the

lungs, as well as damage to the liver, kidney, or central nervous system.

Some VOCs are suspected to cause cancer in humans and have been shown to cause cancer in animals. The health effects caused by VOCs depend on the concentration and length of exposure to the chemicals.

How can I avoid exposure to VOCs?

You can best avoid exposure by controlling the source of the VOCs and using materials and products that do not give off VOCs. Examples are listed below.

- Some building products give off fewer VOCs than others. Try to select products suitable for indoor use.
- Do not allow smoking in or near your home; smoking is a source of many pollutants, including VOCs.
- If it is not possible to remove the source of VOCs, reduce exposure by sealing surfaces like particle board or paneling with an impermeable sealant, such as polyurethane varnish or latex paint.
- Allow gases from new furnishings and building materials to be given off in storage for at least a few weeks before you bring them into your home. If this is not possible, increase the ventilation by opening windows and doors in your home for a few weeks.
- Buy only enough paints, cleaners and solvents for immediate use to prevent the need to store these products in your home. Follow instructions on the product label. Keep lids on tightly. Store products in a

separate room; preferably an outdoor shed, or in areas with proper ventilation.

- Remove old or unnecessary tins or bottles that contain products with VOCs from the home. Do not throw unused products away with your household garbage, ensure you safely and properly dispose of them.
- Do not mix different household cleaners or solvents together. Mixing can create new and dangerous pollutants.
- Do not bring recently dry-cleaned clothing into your home if it still has a strong smell. Leave the clothing at the shop, or take it out of the plastic wrapping and hang it in a ventilated area until it is properly dried.

New carpets:

- Roll out new carpets and if possible, allow them to air out in storage before installation.
- If glues are necessary, select those suitable for indoor use.
- Leave the area during carpet installation.
- Ventilate the area as much as possible during, and for several days after the installation, using fans and opening windows and doors.

Ventilation:

- Make sure you get enough fresh, clean air into your home.
- Increase ventilation by opening windows and doors after you bring new VOC sources into your house, such as new carpets, furniture, or drapes.
- Follow manufacturers' labels when using household chemicals. If the label says "use in a well-ventilated area" go outside or to an area where an exhaust fan or open window provides extra ventilation.

For More Information

For more information about indoor air quality and your health, visit the following websites:

- Health Canada – Indoor Air Quality
www.hc-sc.gc.ca/ewh-semt/air/in/index-eng.php
- The B.C. Lung Association – Air Quality
www.bc.lung.ca/airquality/airquality.html
or call toll-free 1-800-665-LUNG (5864)

For more HealthLinkBC File topics, visit www.HealthLinkBC.ca/healthfiles or your local public health unit.

Click on www.HealthLinkBC.ca or call **8-1-1** for non-emergency health information and services in B.C.

For deaf and hearing-impaired assistance, call 7-1-1 in B.C.

Translation services are available in more than 130 languages on request.



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