

What are VOCs?

Volatile Organic Compounds (VOCs) are emitted as gases from certain solids and liquids. They become airborne because of the quick evaporation caused by a low boiling point. These VOCs mainly come from human-made chemicals that are used in different applications. Organic in this sense means that the structure of the molecule contains one or more carbon atoms. VOCs can be found in many products used both at the workplace and at home, such as:

- Aerosol coatings
- Architectural coatings
- Automotive refinishing products
- Cutback asphalt and emulsified asphalt
- Printing and inks
- Paints
- Solvents
- Personal care products
- Tobacco smoke

Read the labels of any product before use. This will ensure you know if any amount of VOCs is in the product.

Health Effects

Short-term exposure to high levels of some VOCs may cause breathing problems, eye, nose and throat irritation, as well as headaches.

Exposure to certain VOCs may increase the risk for birth defects, neurocognitive impairment, asthma and cancer.

For example, in industrial workers, exposure to high levels of some VOCs (such as benzene and formaldehyde) has been linked with increased cancer rates.

At the low levels typically found in homes, however, there is essentially no risk of developing cancer for either benzene or formaldehyde.

Although the cancer risk for formaldehyde in homes is negligible, it can irritate if levels exceed Health Canada's Residential Indoor Air Quality for formaldehyde.

Indoor Sources

VOCs can be emitted into indoor air from many sources, including:

- Vehicle exhaust
- Cigarette smoke
- Building materials, such as:
 - Paint, aerosol paint, glues, varnish, flooring materials solvents
- Products, such as:
 - air fresheners, cleaning products, personal care products containing formaldehyde, i.e., nail polish, nail hardeners, hair straightening treatments, soaps, deodorants
- off-gassing (the release of gases) from furnishings

How to Reduce Exposure

- Read and follow the product's SDS before use.
- Follow proper precautions; i.e., ventilation, donning proper PPE and using the product as intended.
- Avoid smoke, as second-hand smoke contains many different VOCs.
- Choose low/no VOC-emitting products.
- Read and follow product label instructions.
- Open windows, turn on fans, or use built-in ventilation/exhaust systems to ensure good ventilation when using products, such as glues, paints, varnishes, solvents, adhesives and cleaning products
- Minimize the use of scented products such as plug-in or aerosol deodorizers (air fresheners)

If there are people in the area, especially if they are highly sensitive, you should:

- Remove the chemical that creates the VOC.
- If that is not possible, adequate ventilation is important.
- If people have extreme sensitization, adequate PPE such as a respirator (fit tested to this individual) may offer protection.
- If this does not work, they may need to leave the area when VOCs are present. If these individuals breathe in VOCs, monitoring them for symptoms is paramount. Monitor for symptoms listed on the product SDS sheet and breathing difficulty.