

Volatile organic compounds

Volatile organic compounds, often referred to as 'VOCs' are carbon-based organic chemicals which evaporate and are released into the air at room temperature.

VOCs are common and can be found in both indoor and outdoor environments, particularly in polluted air. They can be caused by human activities or naturally occurring.

VOCs are a broad group and while some should be avoided, others are not known to cause any issues for most people. But some people may be allergic or sensitised to some VOCs.

People with respiratory problems such as asthma, young children, older people, and those with heightened sensitivity to chemicals may be more susceptible to irritation and symptoms.

There is a threshold level of VOCs above which health symptoms may occur in some people. Longer-term exposure to VOCs can also be associated with an increased risk of asthma or allergy flare-ups, as well as other respiratory symptoms, particularly in sensitive individuals.

There are VOCs in aerosols, cleaning products, paints, cosmetics, adhesives, pressed wood products, foam, tobacco smoke, upholstery, carpets, textiles, plastics, detergents – and more.



What you can do

You can influence the level of VOCs in your home.

- Buy no or low-VOC products and reduce the number of products in your home that release VOCs into the air.
- If you buy new products that may release VOCs into the air, consider allowing them to do so in a spare room or outside.
- Increase ventilation by opening doors and windows, and consider using air purifiers with activated carbon filters or other technologies that can help reduce VOC levels.
- Air fresheners are most likely emitters of VOCs through their fragrances. Although they help mask unpleasant odours, it's probably best to avoid using them if fragrances trigger your symptoms.
- Try to keep both the temperature and relative humidity lower in your home. Chemicals will release VOCs more in warmer conditions with high humidity.
- If possible, paint and renovate your home when it is unoccupied or during seasons that are cooler or that will allow for additional ventilation.

Types of VOCs

Volatile organic compound	Uses	Potential health concern
Formaldehyde	Used in the manufacture of resins and plastics, mostly in the wood products industry and adhesives. Also released from tobacco smoke.	Exposure to low levels may irritate the eyes, nose and throat, and can cause allergies affecting the skin and lungs. Higher exposure can cause significant damage, even death. It can trigger or worsen asthma symptoms, including in children, and is a human carcinogen.
Ethylbenzene	Primarily used in the production of styrene and synthetic polymers as well as a number of other uses, such as paints and inks.	Eye, throat and respiratory sensitivity can occur at higher levels.
Benzene	Used in manufacturing and industrial applications. Other sources include petrol stations and tobacco smoke.	Exposure can cause a number of health concerns when inhaled, including skin or eye irritation and, in some cases, aspiration hazard.
Fragrances	Fragrances may consist of a complex mixture of chemicals and are added to a range of products including cosmetics, cleaning products, air fresheners, and detergents.	Fragrances may trigger symptoms in some people with asthma or allergies.
Toluene	Toluene is a common solvent, used in paints, paint thinners, sealants and adhesives. Also found in tobacco smoke.	Inhaling low levels can cause tiredness, confusion and a range of other symptoms such as skin or eye irritation and aspiration hazard.
Xylene	A solvent used to manufacture petrol, chemicals, polyester fibre, and to make dyes, paints and insecticides. Also found in tobacco smoke.	When inhaled or absorbed through the skin symptoms can include headache, dizziness, nausea and vomiting. Can also cause skin, or eye irritation and aspiration hazard.

Disclaimer: It is important to note that information contained in this fact sheet is not intended to replace professional medical advice. Any questions regarding a medical diagnosis or treatment should be directed to a medical practitioner.