

## What Exactly are Volatile Organic Compounds?

VOCs. We all know by now that they're bad, but just how bad are they, what are they *exactly*, and how much of a negative impact can they have on our health?

VOCs, also known as Volatile Organic Compounds, are a group of carbon-based chemicals with a super power: they can easily evaporate into the air at room temperature, and there they hang and wait for a nice set of lungs to inhale them.

When there are high levels of VOCs in a room, most people can smell them, but it should be noted that some VOCs have no odor, so just because a room smells "safe" doesn't mean it is. In other words, odor does not indicate any level of risk of inhaling this dangerous group of chemicals.

### Common VOCs in Our Daily Lives

There are toxic dangers lurking all around us in the form of numerous VOCs. Some of the most common ones we encounter are:

- **Acetone** – Used as a solvent for many plastics and for thinning polyester resin. Acetone is also commonly used to degrease and clean tools and can be found in paints and varnishes.
- **Benzene** – A chemical used to make other chemicals that are used to make many plastics and polymers.
- **Ethylene glycol** – Mostly used as a medium for convective heat transfer, as in cars and liquid-cooled computers. Ethylene glycol is also commonly used in cold water air conditioning systems where the chillers are placed outside.
- **Formaldehyde** – A colorless, flammable chemical widely used to manufacture building materials and household products.
- **Methylene chloride** – This chemical has a wide range of uses, everything from a paint stripper and degreaser to a chemical used in the food industry to decaffeinate coffee and tea.
- **Perchloroethylene** – This volatile, highly stable, and nonflammable VOC is widely used in dry cleaning and to degrease metal parts in the automotive industry. It also is used in a few consumer products such as paint strippers and spot removers.

- **Toluene** – Has many uses but most commonly used as a solvent for paints, paint thinners, silicone sealants, and many chemical reactants, rubber, printing ink, adhesives (glues), lacquers, and disinfectants.
- **Xylene** – Mainly used in the production of polyethylene terephthalate (PET) plastic bottles and polyester clothing.
- **1,3-butadiene** - A material most commonly used for the production of car tires.

### **What Kinds of Building Materials and Home Products Contain VOCs?**

You would be shocked, and perhaps a bit nervous, to learn of all of the products currently in your home that release or “off-gas” VOCs. Some common sources of these toxic chemicals are:

- Air fresheners
- Air cleaners that produce ozone
- Cleaning and disinfecting chemicals
- Cosmetics
- Fuel oil, gasoline
- Moth balls
- Vehicle exhaust (when car is running in an attached garage)
- Paints
- Carpets and adhesives
- Composite wood products
- Sealing caulks
- Solvents
- Upholstery fabrics
- Varnishes
- Vinyl Floors
- Dry cleaning

- Smoking
- Wood burning stoves

[Studies have shown](#) that the level of VOCs indoors in our homes is generally two to five times *higher* than the level of VOC's outdoors. These VOC concentrations in indoor air depend on many factors, including:

- The amount of VOCs in a particular product
- The rate at which the VOCs evaporate and are released into the air
- The volume of the air in the room or building
- How well that room or building is ventilated

### **The Health Effects of VOC Exposure**

Obviously inhaling any kind of toxic chemical is not a great thing, but in this our modern life, it's sometimes hard to avoid. The actual health risks from inhaling VOCs are dependent on how much is in the air and how often a person breathes them in. Health experts look at short-term (acute) exposures as hours to days and long-term (chronic) exposures as years (and in the worst case scenario – a lifetime of exposure).

Studies have now suggested that breathing even low levels of VOCs for extended periods of time can lead to the risk of certain health issues

Common symptoms of acute exposure to high levels of VOCs include:

- Headaches
- Eye, nose and throat irritation
- Dizziness
- Nausea / Vomiting
- Worsening of asthma symptoms

Chronic exposure to high levels of VOCs may lead to an increased risk of:

- Cancer
- Liver damage

- Kidney damage
- Central Nervous System damage

### **Are Any Levels of VOCs Safe?**

The best thing for you and your family's health is to limit your exposure to materials and products that contain VOCs as much as possible. Because most health studies have been conducted on single chemicals, there are no federal health-based standards for VOCs as a group and it's hard to truly know the negative health effects from exposure to combinations of chemicals.

What scientists do know is that certain people are at greater risk from VOC exposure, such as those with respiratory problems such as asthma and chronic allergies, the very young and very old, and those people who have a heightened sensitivity to chemicals.

### **What Can You Do about the VOCs in Your Home?**

There are home screening kits you may purchase to measure the total VOC levels in your home, but these kits won't magically solve your problems. Instead of testing it is better to conduct a thorough inspection of your home to find some of the common sources of VOCs listed earlier.

If you have trouble locating possible sources of VOCs, it is recommended you hire a professional indoor air quality specialist. Once the probable VOC sources have been identified, you can take the necessary steps to reduce your exposure by:

- Removing and replacing harmful products.
- Remove opened but unused chemicals from garages and basements. Even chemicals that have been stored in closed containers can leak and release VOCs into the air. You will want to check with your city or county to find out where your household hazardous waste collection sites are.
- Increase ventilation in your home by opening doors and windows, and use fans to maximize air brought in from outside.
- Keep both the temperature and relative humidity in your home as low as possible (while still being comfortable) because VOCs will off-gas at higher levels under warmer conditions with high humidity.
- When buying any new product for your home, whether it's paint, stain, new furniture or flooring, always be sure to buy products with low or no VOC content.

### **Ambient – Your Source for No VOC Bamboo and Eucalyptus Flooring**

Not only do we [voluntarily lab test all of our products](#) for volatile organic compounds, we also test for formaldehyde, another chemical found in many products like furniture, plastics and carpeting that can cause health issues. We do this because we want you to know and trust that all of our products will be safe I your home for you and your family.

If you are looking for new flooring and want to be sure it's 100% safe, speak with us today about our beautiful bamboo and eucalyptus floors.