



## **Fact Sheet: Volatile Organic Compounds (VOCs)**

Volatile Organic Compounds (VOCs) are a category of chemicals including benzene, trichloroethylene (TCE), tetrachloroethylene (PERC), vinyl chloride, and styrene.

**Sources:** Paints, solvents, wood preservatives, aerosol sprays, cleansers and disinfectants, air fresheners, stored fuels and automotive products, glues, dry-cleaned clothing.

**Physical Properties:** VOCs volatilize (evaporate and go into the air) very easily. Some can dissolve in water.

**Exposures:** Mostly from breathing in VOC vapors in enclosed spaces. Vapors may come directly from stored VOCs, or from contaminated water or soil. You can also be exposed by touching or ingesting contaminated water or soil.

**Health Effects:** Eye, nose, and throat irritation; headaches, dizziness, nausea; damage to liver, kidney, and central nervous system. Some VOCs cause cancer in animals; some may cause cancer in humans.



## Check Your Answers: Volatile Organic Compounds (VOCs)

Compare your ratings to those of Andrew Friedmann. He audits the handling of hazardous waste sites for the Massachusetts Department of Environmental Protection. (On a scale of 1 to 10, the least risky exposure is a 1, and the most risky is a 10.)

Type of Exposure	Risk	A risk assessment professional speaks:
Living or working in a building where contaminants are present in the air	<b>10</b>	Breathing in VOCs in air can result in high exposures. Fumes are easily absorbed by the lungs.  Tip: Remove VOC sources or seal them carefully. Keep air clean with fresh air from outside.
Living or working where the soil beneath the building is contaminated	<b>8-10</b>	VOCs can evaporate and come up from the basement or outside.  Tip: Test indoor air for contamination. Use a fan to vent basement air directly to the outside.
Ingesting (drinking or cooking with) contaminated water	<b>9</b>	Some VOCs dissolve in water.  Tip: If tap water is contaminated, drink & cook with bottled water. If you can't, filter the water. If you can't filter it, heat it and let it sit in a ventilated place before drinking, so VOCs can evaporate.
Showering in contaminated water	<b>5-6</b>	VOCs can enter the body through breathing, through drinking, and, to a limited extent, through the skin.  Tip: Take shorter showers, ventilate your bathroom well, don't drink from the shower head.
Working or playing in contaminated dirt	<b>5</b>	VOCs can enter your body if you accidentally get soil in your mouth or touch the soil with bare skin.  Tip: Don't let small children play in contaminated soil. Adults should wear gloves and shoes.
Swimming or wading in contaminated water	<b>4</b>	Same exposures as showering, but outdoor air is better ventilated.  Tip: Don't swallow any water. Risk from skin exposure is lower.
Using contaminated water for cleaning or laundry	<b>1-2</b>	Could release vapors, but the activity is short.  Tip: Ventilation in the laundry room will help reduce any exposure.
Eating food grown in contaminated soil or with contaminated water	<b>1</b>	VOCs are not thought to accumulate much inside plants. You are more at risk from contamination on the surface of the plant.  Tip: Peel food or wash it well.