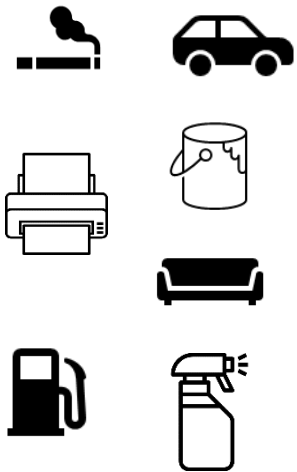


Volatile Organic Compounds (VOCs) Fact Sheet

VOCs are a group of chemicals that are released into the air as gases. They can be formed during the burning of tobacco and fuels, such as gasoline or oil. Some VOCs are also used to make consumer products like household cleaners, paints, and carpets. VOCs are generally found at higher levels indoors compared to outdoors.

VOCs are found in



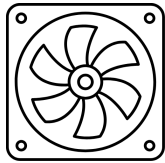
- Tobacco smoke and aerosol from electronic cigarettes.
- Motor vehicle exhaust.
- Smoke from burning of wood, oil, and gas; building fires; and wildfires.
- Emissions to indoor air from:
 - Some laser printers, 3-D printers, and photocopiers.
 - Some building materials, such as certain types of insulation, carpets and carpet backing, and synthetic rubber flooring.
 - Consumer products, including some rugs made with synthetic materials, furniture, household cleaners, glues, paints, and craft kits.
 - Fumes from cooking oils heated at high temperatures, such as when deep-frying foods.
- Emissions to outdoor air from vehicle service stations, natural gas and petroleum products, waste disposal sites, pesticide use, and some industrial processes, such as chemical, rubber, and plastics manufacturing.
- Residue on food treated with some pesticides.
- Food and beverage containers made from plastics and foam, such as some reusable plastic cups, thermoses, and take-out containers.
- Some contaminated drinking water sources.

Possible health concerns

Health concerns associated with VOCs depend on the specific chemical. Some VOCs:

- Can increase cancer risk.
- Can harm the nervous system.
- Can harm the development of the child if exposure occurs during pregnancy.
- May cause eye, nose, and throat irritation.
- May cause kidney damage.
- May harm the reproductive system in men and women.

**Possible ways to
reduce exposure**



- Do not smoke or allow others to smoke in your home, car, or around your child.
- To reduce exposure to vehicle exhaust, start and operate motor vehicles in a well-ventilated area. Do not idle cars inside garages, especially garages attached to your home. When exercising outdoors, choose areas away from highways and other high traffic roads.
- Increase ventilation when using products that emit VOCs (e.g., printers, household cleaners, paints, glues) and turn off equipment when not in use. Avoid burning wood, especially for home heating.
- Always use an exhaust fan or open windows when cooking indoors, especially when cooking with oils heated at high temperatures, or whenever using a gas stove.
- If possible, use a high-efficiency filter in your home’s central heating and air system. Consider buying a portable air cleaner (or “air purifier”) that can remove VOCs from the air in your home. See links to additional resources below.
- Limit contact with gasoline and fumes. Pump gasoline carefully to avoid spillage or contact with skin.
- Choose non-plastic containers for food and drink when possible and avoid heating food or drinks in plastic or foam containers that may contain VOCs (often labeled with the recycling symbol “6” or “7”).
- Consider purchasing carpets, rugs, or other products that have lower VOC emissions.
- If you use well water, have it tested for VOC contamination (especially benzene). Water from a public system is tested regularly.

For more information:

HEPA filters: <https://www.epa.gov/indoor-air-quality-iaq/what-hepa-filter>

Guide to air cleaners: https://www.epa.gov/sites/default/files/2018-07/documents/guide_to_air_cleaners_in_the_home_2nd_edition.pdf

Identifying greener carpets: <https://www.epa.gov/greenerproducts/identifying-greener-carpet>

Green Label Plus information: <https://carpet-rug.org/testing/green-label-plus/>