

**What is formaldehyde?**

Formaldehyde is a colorless, flammable gas with a strong pungent odor. It is produced by both industrial and natural sources. It is created in small amounts by living cells of people, plants, and animals. It is used in the production of many consumer products including cigarettes, antiseptics, medicines, paper, cosmetics, permanent-press fabrics, furniture, disinfectants, and deodorizers. It is also used in the manufacturing of home-building materials such as plywood, particle board, and insulation.

**Who is exposed to formaldehyde?**

Inhalation is the major route of formaldehyde exposure in people. Sources of formaldehyde in the home include cigarettes, consumer products, and building materials. Indoor air formaldehyde levels are usually higher than outdoor levels. Indoor air concentrations of formaldehyde have been reported to range from 0.02 to 4 parts per million (ppm) while outdoor air levels typically range from 0.0002 to 0.02 ppm.

**How can formaldehyde affect my health?**

Formaldehyde can irritate the nose, upper respiratory tract, and eyes. Some people, including asthmatics, are more sensitive to the effects of formaldehyde than others. The odor of formaldehyde can be detected by most individuals at about 1 ppm, but some people can detect it in air at lower concentrations. Once absorbed, formaldehyde is very quickly broken down to a non-toxic chemical and is excreted in the urine.

**How likely is formaldehyde to cause cancer?**

The U.S. Department of Health and Human Services (DHHS) has determined that formaldehyde is a known human carcinogen based on human and animal inhalation studies.

**How can formaldehyde affect children?**

Children can be affected by formaldehyde exposure in the same way as adults. It is not known if children are more susceptible to formaldehyde than adults.

**Is there a medical test to determine whether I have been exposed to formaldehyde?**

Although medical tests are available, it is difficult to obtain an accurate measure of formaldehyde in your body. These tests are not routinely available at your physician's office.

**How can I reduce the risk of exposure to formaldehyde?**

Reducing indoor formaldehyde levels is different in each situation. Common tips to reduce levels include the following:

- Don't smoke in your home.
- Increase air circulation indoors by using exhaust fans, and opening windows and doors.
- Keep humidity levels between 40-50% and avoid high inside temperatures.

- Seal surfaces of any formaldehyde-releasing products.
- Choose “manufactured-home,” pressed-wood products that meet the requirements of either Ultra Low Emission Formaldehyde (ULEF) or No Added Formaldehyde (NAF) certification.
- Choose pressed-wood products that are compliant with the American National Standards Institute (ANSI) or California Air Resources Board Air Toxics Control Measure (CARB ACTM) criteria.

### **Are there any standards or guidelines to protect people from exposure to formaldehyde?**

Standards and regulations are updated periodically as new information becomes available. At present, there is no generally agreed upon standard for formaldehyde concentrations in residential settings. On July 7, 2010, the Formaldehyde Standards for Composite Wood Products Act was signed into law but regulations related to the implementation of this law are still pending. This legislation, which adds a Title VI to the Toxic Substances Control Act (TSCA), establishes limits for formaldehyde emissions from composite wood products such as hardwood plywood, medium-density fiberboard, and particleboard. This simply mirrors California Air Resource Board (CARB) composite wood formaldehyde emissions standards. For manufactured (prefabricated) housing, the U.S. Department of Housing and Urban Development (HUD) specifies standards for formaldehyde emissions at no more than 0.2 ppm for plywood and 0.3 ppm for particle board. The HUD standards are designed to provide an ambient level of 0.4 ppm or less in manufactured housing. In workplace settings, the 8-hour time weighted average permissible exposure limit developed by the Occupational Safety and Health Administration (OSHA) to protect workers from formaldehyde is 0.75 ppm. The National Institute for Occupational Safety and Health’s (NIOSH) 10 hour time-weighted average recommended exposure limit for workers is 0.016 ppm.

### **Where can I get more information about formaldehyde?**

- If you have concerns about formaldehyde, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at <http://www.vdh.virginia.gov/local-health-districts/>. Contact the Virginia Department of Health at (804) 864-8182 or at [toxicology@vdh.virginia.gov](mailto:toxicology@vdh.virginia.gov).
- For additional information, please visit the Agency for Toxic Substances and Disease Registry page on formaldehyde at <https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=39>.

October 2018