

Formaldehyde Hazards in Homes

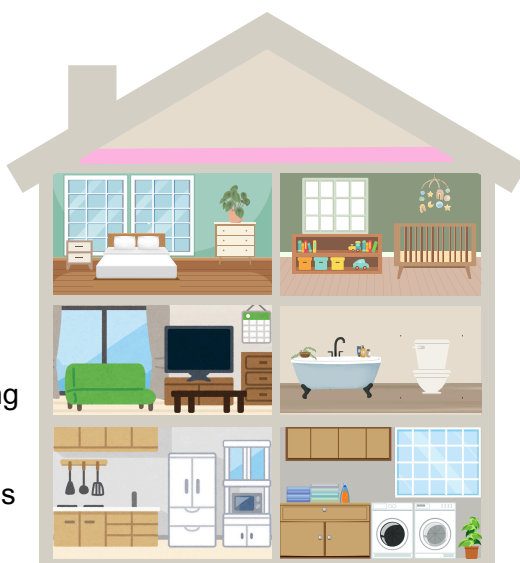
Know the hazards in your home and the steps to reduce indoor air levels.



What are the potential sources of formaldehyde in homes?

Formaldehyde is a colorless gas with a strong odor and is flammable at room temperature. It is widely used in building materials and consumer products. In homes, formaldehyde may be found in:

- Wood floor finishes, including base- and top-coat floor finishes
- Glues, wallpaper, paints and coatings, lacquers, and finishes
- Adhesives used in manufactured (composite) wood products, like cabinets, furniture, plywood, particleboard, and laminate flooring
- Emissions from unvented, fuel burning appliances, like gas stoves or kerosene space heaters



- Insulation
- Wooden children's toys
- Some pesticides, caulks, and detergents
- Some medicines, cosmetics, dishwashing liquids, fabric softeners, and carpet cleaners
- Tobacco smoke

How can I be exposed to formaldehyde in my home?

Formaldehyde is released into the air from products through a process called off-gassing. People are primarily exposed to it by breathing in air containing off-gassed formaldehyde. High temperatures and humidity increase the off-gassing into the air.

Most indoor spaces likely have some level of formaldehyde in the air due to off-gassing from pressed wood products, carpets, fabrics, and insulation. According to the U.S. Environmental Protection Agency (EPA), the median formaldehyde concentration in U.S. homes is approximately 20 micrograms per cubic meters ($\mu\text{g}/\text{m}^3$). Formaldehyde levels are higher in new manufactured wood products such as flooring and furniture, with levels that can be greater than 370 $\mu\text{g}/\text{m}^3$.

Homes built after 1990 are better insulated and, therefore, have less air movement in and out of the home, causing formaldehyde to stay in the air longer. Since tobacco smoke contains formaldehyde, people who smoke in homes may be contributing the largest indoor source of formaldehyde.

What are the health effects from breathing formaldehyde?

Studies in humans and animals show that breathing formaldehyde at certain levels can lead to adverse health effects. Acute (short-term) and chronic (long-term) inhalation exposure in humans can result in respiratory symptoms (such as causing/worsening asthma) and eye, nose, and throat irritation. Breathing high levels of formaldehyde in some workplaces (e.g., medical setting, funeral home) has been linked to some types of cancers, including leukemia and cancers of the nasopharynx and sinuses.

A wide variability in odor thresholds (the lowest level that the odor can be smelled) has been reported for formaldehyde, ranging from 50 to 1,200 µg/m³. Much of the population may smell formaldehyde at or below 100 µg/m³. Note that health effects can occur when people are exposed to levels below the range where they can smell it. For information on potential health effects from exposure to formaldehyde at different levels, [see NJDOH's ToxTree](#).

Should I test my home for formaldehyde?

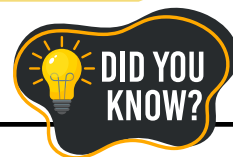
Reducing levels of formaldehyde in indoor air is an important step to reduce exposure. If you choose to test your home, hire a [qualified environmental consultant](#) who has the appropriate training and equipment.

There are some tests you can do yourself, but results from home-test kits can be different based on sample location and duration and may not be comparable to tests done by qualified professionals. Discuss results and next steps with a qualified professional.

How can I reduce formaldehyde in my home?

Formaldehyde levels from background sources decrease over time, and most formaldehyde is released from products within two years. To minimize exposures:

- Do not smoke in your home.
- Increase ventilation and use exhaust fans as much as possible.
- Keep the temperature and humidity inside the home at the lowest comfortable setting.
- Consider purchasing [composite wood products certified as compliant with ANSI standards](#) that include limits on formaldehyde emissions.
- Use products labeled “No VOC or Low VOC” (volatile organic compound).



Air filters generally don't help lower levels of formaldehyde in your home. Overheating your home to “bake” out the formaldehyde also is not effective and may even raise formaldehyde levels.

What is being done to reduce formaldehyde in manufactured wood products?

The EPA has [set limits](#) on how much formaldehyde may be released from composite wood products. Specifically, under the Toxic Substances Control Act (TSCA) law, which established limits for formaldehyde emissions from composite wood products, regulated composite wood products manufactured or imported into the U.S. must be certified and labeled as “TSCA Title VI compliant.”

How can I get more information on formaldehyde?

Facts About Formaldehyde | U.S. EPA: epa.gov/formaldehyde/facts-about-formaldehyde#whatcontains
Consumer Product Safety Commission - Formaldehyde: cpsc.gov/s3fs-public/An-Update-On-Formaldehyde-725_0.pdf
EPA Rule to Implement Formaldehyde Standards for Composite Wood Products: epa.gov/sites/default/files/2018-07/documents/formaldehyde_emission_fact_sheet_review_version_july_2018.pdf