

Formaldehyde Hazards in Childcare Centers

Know the hazards and how to identify steps to reduce indoor air levels.



What are the potential sources of formaldehyde in a childcare center?

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 childcare centers formaldehyde may be found in:

- building materials and insulation
- adhesives used in manufactured (composite) wood products like cabinets, furniture, plywood, particleboard, and laminate flooring
- wood floor finishes including base- and top- coat floor finishes
- glues, wallpaper, paints and coatings, lacquers and finishes
- some pesticides, caulks, and detergents
- wooden children's toys
- indoor air at facilities co-located with nail/hair salons.

How can staff and children be exposed to formaldehyde in a childcare center?

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

Most indoor spaces likely have some level of formaldehyde in indoor 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 that can have formaldehyde levels greater than $370 \mu\text{g}/\text{m}^3$.

How can co-location with certain businesses present a unique risk to some childcare centers?

Childcare centers may have impacts to their indoor air if they are in the same building as businesses that use formaldehyde as part of their operations. NJDOH requires indoor air sampling for formaldehyde in childcare centers located in buildings with hair/nail salons and in former funeral parlors.

Between 2021 and 2024, the average formaldehyde level from samples taken in 64 NJ childcare centers that were co-located with a hair salon, nail salon or in a former funeral parlor was $27 \mu\text{g}/\text{m}^3$. The highest formaldehyde level ($150 \mu\text{g}/\text{m}^3$) was detected in a childcare center that was co-located with a hair and nail salon.



Protecting Staff and Children

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 to formaldehyde 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 at which the odor can be smelled) have been reported for formaldehyde, ranging from 50 to 1,200 $\mu\text{g}/\text{m}^3$ and much of the population may smell formaldehyde at or below 100 $\mu\text{g}/\text{m}^3$. It should be noted that adverse 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](#).

How can childcare center operators reduce formaldehyde in their center?

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

- increase ventilation and use exhaust fans as much as possible;
- keep the temperature and humidity inside the childcare care center at the lowest comfortable setting;
- consider purchasing **composite wood products certified as compliant with ANSI standards** that include limits on formaldehyde emissions; and
- use products labeled “No VOC or Low VOC” (volatile organic compound).

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 childcare center operators get more information on formaldehyde?

Additional information on formaldehyde can be found at:

[**Facts About Formaldehyde | US EPA**](#)

[**Consumer Product Safety Commission - Formaldehyde**](#)

[**EPA Rule to Implement Formaldehyde Standards for Composite Wood Products**](#)