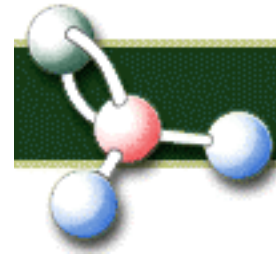


FORMALDEHYDE



What is formaldehyde?

Formaldehyde is a chemical that is released into the air as a pungent gas. It has a number of useful properties: It's a good preservative and makes an excellent adhesive. Therefore, it is used widely in the building and furnishings industries. It is also found in small amounts in some textiles as an anti-wrinkle agent.

Why should I be concerned about formaldehyde?

It is a strong irritant that causes watery eyes and when present in the air at levels above 100 parts per billion of air (ppb), can cause burning sensations in the eyes, nose and throat. Wheezing and coughing, fatigue, skin rashes, headaches, loss of coordination and nausea are other symptoms. Larger doses can cause asthma attacks as well as damage to the liver, kidneys and the central nervous system. Some people are highly sensitive and react to formaldehyde concentrations that don't bother most people.

Formaldehyde has been shown to cause cancer in laboratory animals, but there is limited evidence that it causes cancer in humans.

What are the major sources of formaldehyde?

Pressed wood products, such as particleboard, are the major contributors of formaldehyde to the home environment. The culprit is the adhesive, urea formaldehyde, which can break down, releasing the formaldehyde. Phenol formaldehyde (used in exterior panels) is usually less of a problem. Some particleboard is now manufactured with reduced formaldehyde.

Other sources include interior plywood, veneered or laminated furniture and cabinets, some professionally applied furniture and floor finishes, paneling, permanent press fabrics (some drapes), coated paper products, combustion products (cigarettes and automobile exhaust) certain insulation materials (urea-formaldehyde foam and fiberglass insulation) and cosmetics.

What levels of formaldehyde are normal?

Formaldehyde is normally present at low levels, usually less than 30 parts per billion of air (ppb), in both outdoor and indoor air. The outdoor air in rural areas has lower concentrations while urban areas have higher concentrations. Residences or offices that contain products that release formaldehyde to the air can have levels greater than 30 ppb. As mentioned above, symptoms usually begin to appear at levels above 100 ppb. A 1985 HUD regulation covering the use of pressed wood products in manufactured housing was designed to ensure that indoor levels are below 400 ppb.

Should I measure formaldehyde levels in my home?

Formaldehyde measurements are not recommended unless a problem is suspected. Even then, it is sometimes better and less expensive to try to reduce formaldehyde levels first. For example, if someone has symptoms following the purchase of furniture or remodeling with pressed wood products, take action to reduce formaldehyde levels from these well known sources (see below). However, if your actions did not reduce symptoms, or the source is not obvious, consult a physician to determine whether or not your symptoms might be related to formaldehyde exposure. If so, you may want to make some measurements. Although do-it-yourself formaldehyde test kits are available, it is recommended that a qualified professional make the measurement and conduct an inspection to provide the most accurate and useful information.

What can I do to reduce formaldehyde problems?

- ② Formaldehyde cannot penetrate plastic laminate and is at least partly blocked by coatings. Varnishes and special formaldehyde sealants are also available. Apply these coatings to all exposed formaldehyde-emitting edges and surfaces, such as the undersides of countertops, cabinet interiors and drawers. You can also remove products that are releasing formaldehyde into your home.
- ② High humidity and elevated temperatures increase formaldehyde release, so you might want to control humidity through air conditioning and dehumidifiers. If formaldehyde sources are present, low ventilation rates (the amount of outdoor air entering or leaving the indoor area) can cause higher formaldehyde levels in the indoor air. Therefore, increasing ventilation, particularly after bringing new sources of formaldehyde into the home, can decrease formaldehyde levels.
- ② Some sources - such as pressed wood products containing urea-formaldehyde glues, urea-formaldehyde foam insulation, durable-press fabrics, and draperies - release more formaldehyde when new. As they age, the formaldehyde release decreases.
- ② When remodeling and in new construction, select low formaldehyde materials.
- ② **WARNING:** Treating formaldehyde-containing materials with strong ammonia (28-29% ammonia in water) is not recommended since it only results in temporary reduction in formaldehyde levels and since ammonia in this strength is extremely dangerous to handle. Ammonia may damage the brass fittings on a natural gas system, adding a fire and explosion danger to your home.

This informational fact sheet has been created for the H.E.L.P. for Kids Project. Portions of this document have been reprinted with permission from "Healthy Indoor Air for America's Homes - Indoor Air Hazards Every Homeowner Should Know About..." For more information, or to order a copy of the complete publication, contact MSU Extension Service, 111 Taylor Hall, Bozeman, MT 59717, or call 406-994-3451. This document also contains information from "An Update on Formaldehyde (1997)" from the U.S. CPSC.

