



Fact Sheet

California Environmental Protection Agency

 **Air Resources Board**

August 2004

REDUCING YOUR EXPOSURE TO FORMALDEHYDE

Formaldehyde is a common indoor air pollutant. It is a pungent gas that can irritate a person's eyes, nose, throat, and lungs. Prolonged exposure may cause cancer. The major indoor sources of formaldehyde are shown in the box below. Typically, formaldehyde levels are higher indoors than outdoors due to the many indoor sources. Pressed wood building products and furnishings (such as those made from plywood and particleboard) are often the greatest contributors to formaldehyde levels in indoor air.

COMMON SOURCES OF FORMALDEHYDE IN HOMES

Pressed wood products: particleboard, plywood, medium-density fiberboard (MDF); often used in cabinetry and as wall and floor materials

Consumer products: fingernail hardeners, nail polish, wallpaper, paint

Permanent press fabrics: clothing, linens, draperies

Combustion appliances: wood stoves; heaters & stoves fueled by gas, kerosene, or propane

Cigarettes and cigars

The risk formaldehyde poses to a person's health depends on the concentration of formaldehyde in the air, the length of time the person is exposed, and the person's individual sensitivity to formaldehyde. The Air Resources Board has identified formaldehyde as a Toxic Air Contaminant, based on its potential to contribute to cancer risk. Removing or reducing the formaldehyde sources in your home will reduce the risks to your health.

There are many steps you can take to reduce your exposure to formaldehyde indoors.

◆ Purchase products with little or no formaldehyde.

- Avoid buying uncoated pressed wood products made with urea-formaldehyde (UF) resin: these include many plywood and particleboard products used indoors, such as cabinets and desks.
- Substitute other building materials for formaldehyde-containing pressed wood products. Consider using formaldehyde-free materials such as solid wood, gypsum board, some hardboard products, stainless steel, adobe, bricks, tile, and plastic. Use formaldehyde-free insulation.
- Consider buying used or antique furniture; formaldehyde emissions decrease as products age.

➤ When buying pressed wood products, purchase low-emitting products:

- Choose pressed wood products made with phenol formaldehyde (PF) resin or methylene diisocyanate (MDI) resin; these products emit much less formaldehyde than do UF products
- Select UF pressed wood products that are sealed with finishes that reduce formaldehyde emissions, such as veneer, vinyl, or other water-resistant coating.
- For UF pressed wood products, look for the Composite Panel Association (CPA) or Hardwood Plywood and Veneer Association (HPVA) stamps. Products bearing these stamps meet certain formaldehyde emission standards.



Manufactured homes can contain large quantities of pressed wood materials

◆ **Be cautious when using products and appliances that release formaldehyde.**

- Exhaust all combustion appliances directly to the outdoors; have them checked annually by a professional to assure proper operation and venting.
- Wash permanent press clothing, sheets, and other fabrics before using: one washing can reduce formaldehyde emissions from these products by up to 60 percent!
- Do not allow tobacco smoking in your home; avoid exposure to cigarette smoke.

◆ **Air out products containing formaldehyde before bringing them indoors, and increase ventilation in your home when using them.**

- Air out new carpet, new furniture made with pressed wood products, new draperies, and other permanent press textiles in a ventilated area for several days before bringing them into the home.
- Keep fresh outdoor air circulating when applying fingernail hardeners, nail polish, and other cosmetic products that may contain formaldehyde. These products can be high-emitters.
- Keep doors and windows open when painting your home and when installing wallpaper.

◆ **Reduce your home's humidity, and keep indoor temperatures moderate.** More formaldehyde is released when temperature and/or humidity are high.

◆ **For more information, visit our website at <http://www.arb.ca.gov/research/indoor/indoor.htm> and see our updated Indoor Air Quality Guideline entitled *Formaldehyde in the Home*. You may also call our Public Information Office at 916-322-2990, or leave a message at 916-322-8282.**

If you are a person with disability and desire to obtain this document in an alternative format, please contact the Air Resources Board Coordinator at (916) 323-4916. Persons with hearing or speech impairments can contact us by using our Telephone Device for the Deaf (TDD) at (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.