

# FACT SHEET



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## UREA FORMALDEHYDE FOAM INSULATION (UFFI)

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### BACKGROUND:

During the past 20 years the State of Connecticut Department of Public Health (DPH) has had extensive involvement in assessing risks posed by urea formaldehyde foam insulation (UFFI). This fact sheet was prepared to summarize our current knowledge of the UFFI situation with particular emphasis on a 1986 DPH survey of UFFI houses. UFFI is no longer used to insulate homes in Connecticut. The following list of UFFI facts is a summary of what DPH has discovered during its 20 years of involvement with UFFI:

- UFFI when first installed had the potential to release significant amounts of formaldehyde into indoor air which resulted in acute adverse health effects such as eye, nose, and throat irritation, headache, and nausea. However, formaldehyde levels in UFFI houses dropped rapidly after installation and health complaints usually subsided with time.
- The formaldehyde exposure in homes treated with UFFI in the past is not the public health threat it once was and the current concern given specifically to UFFI houses may not be warranted.
- Formaldehyde is present at low levels in most indoor environments due to its presence in many consumer products, including particleboard, furniture and carpeting.
- Most UFFI homes in Connecticut have formaldehyde levels substantially lower than when the insulation was first installed and most levels found are well below the level usually associated with acute health effects.
- Testing the air of UFFI houses, although widely used in the past, is not recommended by DPH today. However, for those who are concerned or who have known formaldehyde sensitivities, air testing is still the only way to be sure that a particular home does not have elevated formaldehyde levels.
- Of the many ways to sample air for formaldehyde, the most sensitive and most commonly used method is the “chromotropic acid - impinger method”. Newly marketed “passive samplers” may also have the needed sensitivity. If you decide on testing, consult with your private laboratory about the sensitivity of the method it proposes to use.
- A level of 0.1 parts per million (ppm) is commonly used as a guideline for residential formaldehyde concentrations. Most people will not experience acute health effects below that level.

### HISTORY

In the early 1970's urea-formaldehyde foam insulation (UFFI) was installed in Connecticut homes as well as elsewhere in North America for the purposes of energy conservation. It is estimated that almost 10,000 homes in Connecticut were insulated with UFFI between 1970 and 1981. By 1977 the Department of Public Health (DPH) and the Department of Consumer Protection (DCP) began receiving complaints from homeowners who believed that formaldehyde offgassing

from the insulation was causing adverse health effects. In addition to respiratory irritation effects, concern also arose over the possible carcinogenic effects of formaldehyde. Some individuals also developed formaldehyde sensitivities that caused them to have adverse reactions to very low formaldehyde levels.

As a result of complaints (DPH) tested the air inside UFFI homes and found some homes with elevated formaldehyde levels. DPH also conducted two studies that demonstrated a correlation between health complaints and formaldehyde levels. In 1981, as a result of these findings, the installation of UFFI was banned in Connecticut. Although the installation of UFFI was banned, widespread removal of the insulation was not recommended or undertaken due to the excessive costs and uncertain benefits of the removal procedure.

### **AIR TESTING**

Between 1977 and 1983 DPH sampled over 500 homes for formaldehyde. Complaints continued after the 1981 ban and testing by DPH did not end until 1983. After 1983 private testing companies were encouraged to conduct the tests. Today testing of UFFI houses is occasionally being conducted by private labs, usually for reasons related to house sales, rather than health complaints. There are many ways to sample air for formaldehyde, but the most sensitive method and the one most commonly used by private labs is the “chromotropic acid-impinger” method.

A review of data supplied by the private labs in 1986 indicated that most UFFI houses tested in Connecticut had formaldehyde levels much lower than in the past and below levels where health effects might be expected, about 0.1 ppm. Despite this fact the DPH and DCP still receive calls from potential home buyers, sellers, and real estate agents concerned over the “stigma” related to UFFI houses.

### **CONNECTICUT STUDY, 1986**

In order to get a better understanding of the current importance of UFFI in homes, DPH undertook a study in the summer of 1986 to characterize the formaldehyde exposures resulting from UFFI five years after it was banned. DPH selected 30 houses that it had tested as “high” houses in the past, along with 10 control houses not insulated with UFFI. The results of this testing indicated that the average formaldehyde levels in these “high” houses has decreased from 0.98 ppm at the time of the complaint to 0.08 ppm in 1986. (A guideline of 0.1 ppm is widely utilized as a non-occupational exposure level for formaldehyde). A strong correlation was found between decreasing formaldehyde levels and age of the insulation. However, two “problem” UFFI houses with significantly elevated formaldehyde levels were also found. These problem houses were unique in that UFFI was present in both the walls and ceilings.

The 10 control homes not insulated with UFFI had an average formaldehyde level of 0.04 ppm, which was not statistically different from the UFFI houses’ average. These formaldehyde levels in the control homes result from a number of sources including pressed wood products, paneling, carpeting and upholstery.

**For more information please call or write to:**

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