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## Indoor Formaldehyde Pollution from Pressed – Wood Products in the Metropolitan Taipei Area

### Key Words

Formaldehyde emission  
Pressed-wood products  
Indoor air  
Interior decoration

### ABSTRACT

Formaldehyde is a ubiquitous indoor air pollutant, whose health effects of irritating mucous membranes of the eyes, nose, and throat, and being a suspected carcinogen create health concerns. The major indoor sources of formaldehyde are the adhesives used in pressed-wood products. In Taiwan, large quantities of pressed-wood products are used in the booming interior decoration business. Accompanied by tighter air seals of buildings, formaldehyde concentrations can accumulate to high levels, especially if low-formaldehyde-emission glue is not used. The purpose of this study was to evaluate the extent of the problem of exposure to formaldehyde in residences and the effect of air exchange on indoor concentrations.

New houses being decorated in the metropolitan Taipei area were selected to be our study population. With consent of the workers and house owners, air sampling was conducted. Subsequent samplings continued for up to 6 months. We found that during decoration, the mean value of formaldehyde concentration was 0.446 ppm (9% of samples exceeded 1 ppm, with a max. value of 1.941 ppm); 3 months after completion of construction, the concentration was still higher than outdoor ambient air, i.e., at 0.109 ppm vs. 0.023 ppm; but indoors where remodeling had occurred 5 years before or earlier, the concentration was as low as that outdoors. We also found that formaldehyde concentrations diminished with increasing rates of ventilation. The results of this study reflect that formaldehyde emissions from pressed-wood products used in Taiwan are a serious health concern. It is recommended that the regulatory authorities establish formaldehyde emission standards for pressed-wood products. Moreover, the public should be educated about proper air exchange and the availability of low-formaldehyde-emission products. (2000, volume 2, p 51-56)

### INTRODUCTION

Formaldehyde is an extremely important industrial

chemical, being often used in the manufacture of resins, plastics, fabric coatings, and many other products. It was 23<sup>rd</sup> in production among industrial chemicals in

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