

Chloroanisoles in relation to indoor air quality and health

Johnny C. Lorentzen, Stephanie Juran and Gunnar Johanson

Work Environment Toxicology, Institute of Environmental Health, Karolinska Institutet
Stockholm, Sweden.

Between 1956 and 1978 chlorophenols were widely used in Sweden for preservation of wood products in building locations where it was believed that the chemical treatment could replace traditional construction methods to prevent moisture and subsequent microbial growth. Although only limited mold growth develops on preserved wood it may still emit a malodor that is often characterized as “moldy” (1).

Moldy odors impair indoor air quality and may cause adverse health effects in people perceiving them as “dangerous” (2-5). Thus, moldy odors may be a cause of adverse health effects and not merely function as a proxy for dampness, as it is commonly used today, when documenting statistical associations between damp buildings and adverse health effects, including asthma (6).

We conclude that there is an urgent need for research on the effects of moldy odors in relation to building related illness. Unfortunately, such studies are difficult to perform since moldy odors generally result from complex and highly variable mixtures of microbial produced volatile organic compounds (MVOC) that are difficult to standardize for controlled human and animal exposure studies and which may also be problematic to measure and trace in buildings.

In this respect, the malodorous chloroanisoles produced by microbial metabolism of chlorophenols in preserved wood are of special interest. Chloroanisoles are well defined substances that are relatively easy to identify and quantify. Furthermore, they can generally be traced to typical problem locations in the buildings. Measurements of chloroanisoles in indoor air and building materials was introduced in Sweden already in 1999, and there is one scientific publication describing chloroanisoles as a cause of malodors from pentachlorophenol treated wood (7). Still, little is known about their health effects and occurrence in problem buildings.

References.

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