

Reviewer's report

Title: PCB-containing wood floor finish as a likely source of elevated PCBs in residents' blood, household air and dust

Version: 1 **Date:** 4 October 2007

Reviewer: Robert Herrick

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General

Overall I find this to be a well-written presentation of a very interesting finding. It is certainly worthy of publication in *Environmental Health*. I think that the evidence presented makes the case that it is more likely than not that a major source of the serum PCBs results found in the occupants of these 2 homes is the floor coating.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. I think, however that the authors could strengthen their case by addressing the following point: The authors mention that the serum samples were analyzed for 33 PCB congeners, but they only present totals and discuss comparisons with 10 congeners that were reported in the NHANES data. It would be interesting to see the results of the serum levels of the 33 congeners in a table, so these results can be compared with others that have attempted to distinguish between environmental and dietary sources of PCBs. In particular, van den Berg et al., 1995; Atuma et al., 1996; and Wicklund-Glynn et al., 2000 have addressed the question of which PCB congeners can be monitored to distinguish environmental from dietary sources of PCB exposure (usually PCBs 28, 52, 101, 118, 138, 153 and 180). Luotamo et al. (1993) suggested PCBs 28, 33, 60, 66, and 74 as markers for occupational exposure, and Wingfors et al. (2006) suggested that PCBs 44, 56/60, 66, 70, 110, 153 and 180 be considered markers of occupational PCB exposure, such as those resulting from the removal of PCB caulking. I recommend that the authors examine the congener profiles in their serum samples and compare them with these results. The authors should also discuss the work by Kuusisto, et al. (*Chemosphere* 2007) who examined PCB contamination caused by the removal of paint.

2. The authors should also mention that their ability to link the environmental and serum PCB findings is limited by the fact that only PCB 52, 105, and 153 were measured in the environmental samples. A more complete profiling of congeners might have allowed them to examine the possible environmental contribution more completely, and it would have allowed them to compare their findings to others who have found that environmental PCB sources are enriched with lower

MW congeners such as 28, 31, 52, 77 reported by Kontas et al (2004) and Priha et al.(2005). If the authors only have information on the 3 congeners, there is nothing more to be done but this should at least be mentioned as a limitation of the study.

3. Finally, I have to wonder about the statements made concerning the conclusions that the floor coating is the source of elevated environmental and serum PCB levels (page 10: “We did not confirm wood floors as a source of PCBs in these homes because such a confirmation raises potential regulatory and disclosure obligations that pose significant challenges to individual home owners. We are working to develop helpful and appropriate follow up in this context.”). I would say that I am convinced, as I think the authors are as well, that the PCB on the floors of these homes is the source of the environmental contamination and elevated serum levels that they observed, so what further confirmation is needed? If the concern is about disclosure of this information in the event the current owners sell their homes, I would argue that they are ethically bound to disclose these findings of elevated PCB levels based solely on the information in this article. The prudent course, I believe is to remove the source from these homes immediately.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.