

Reviewer's report

Title: Characterization of exposures to cleaning products used for common cleaning tasks in hospitals -a pilot study

Version: 2 Date: 21 October 2008

Reviewer: Elise Pechter

Reviewer's report:

Major compulsory revisions

1. "Qualitative assessment of inhalation exposures" (page 6) implies that the method of cleaning is not a factor in determining inhalation. Only intensity (specifically limited to volatility and concentration), duration and frequency are included in the formula. Yet the paragraph describes product application methods. Is the formula used or not? If not, delete it, or clarify the modification to include product application method.
2. VOC must be defined. EPA's definition would exclude some ingredients, only including C6-C16.
3. The discussion is 7 pages long, and includes some results as well as conclusions and recommendations. Numbers 2 and 4 should precede number 3 logically: 1 products are mixtures, 2 cleaning results in exposures (inhalation and dermal absorption), 3 exposures cause harm. Parts of the discussion appear to be an evaluation of DREAM rather than a report on its applicability to this pilot study. The conclusions and recommendations embedded in this section could be eliminated.
4. The discussion (page 20) about the limitations of green cleaners, for example, is incomplete, and disconnected from the rest of the article. EPA will not allow "green" labels on any FIFRA approved disinfectants. Therefore this discussion is irrelevant for any product with disinfection properties.

Minor essential revisions

1. Two new articles are cited in the background but the references are not added until later in the paper.
2. "Most hazardous ingredients" used (p5) should be altered to ingredients most likely to cause respiratory and skin adverse effects.
3. Add reference to the sentence ending, "...the reader can refer to the DREAM method."
4. The language regarding hazard (p 5) confuses potential for exposure and potential for harm. Items 1, 3 and 4 refer to the possibility that the ingredient was present in the product, whether it was present in a higher concentration and whether it could become airborne. Only item 2 refers to the potential to cause health effects. This should be clarified.

5. Figure 1 lacks toilet bowl cleaning, but it is included in Figure 3.
6. Page 13, in Dermal exposures potential, paragraph 2 states that the "graph in Figure 3" shows . . . emission contributes more than transfer or deposition. Does this allude to Table 5? Table 4 shows transfer is the greatest contributor. Figure 3 does not appear to show the contribution of emission, transfer and deposition separately. The sentence appears to speculate on the findings. Perhaps this should be in discussion, not results.
7. Page 14 ingredients that are equal to or greater than 1%, not less than.
8. Numerous spelling (e.g. NOISH, volatilities, Puhorit, filed for field) and grammatical errors (absence of articles, agreement, apostrophes).

Discretionary

1. Update TLV reference to 2008
2. Floor care may imply inclusion of floor cleaning. I believe this term is used in this article to describe floor finish application and buffing. The term "floor finishing" would be better.
3. Page 10. "One usage" is not clarified. Is this one room or one floor or one building?
4. Page 17. Quantitative studies will not elucidate the "mechanism of asthma" which more readily would be revealed through biological studies (pathophysiology, IgE v IgG mediation, inflammation v irritation, etc.)
5. Specific products with trade names are still included in Table 1.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.