

Miller, Diane M. (CDC/NIOSH/EID)

From:

Sent: Monday, August 27, 2007 12:38 PM

To: Miller, Diane M. (CDC/NIOSH/EID)

Subject: Review comments

Attachments: Review comments for NIOSH dermal resource guide.doc

Dear Dr. Miller,

Attached please find my comments for the NIOSH draft document "Comprehensive Resource Guide for Managing Occupational Exposures of Skin to Hazardous Chemicals". Should you have any questions, please let me know. Thank you for the review opportunity.

Best regards,

Comments on NIOSH

Comprehensive Resource Guide for Managing Occupational Exposures of Skin to Hazardous Chemicals

Reviewer:

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1. **Is this Dermal Resource Guide appropriate as a tool to direct the general audience and the professional audience to the information resources for occupational skin exposures?**

This is so far the most comprehensive and informative skin exposure resource guide I have ever seen. From personal experience, workers encounter more skin-related health problems than other health problems such as respiratory diseases. This Guide is good in that it provides easy-to-understand information for employers and workers as an educational tool and resource guide. Often workers call us to ask questions because it is hard for them to find pieces here and there from the Internet. With this Guide, workers and employers can find a convenient tool that links with many other available resources. The general audience can find specific type of information they are looking for easily. It is therefore a useful tool to workers and employers.

As skin exposure to chemicals at workplace now becomes more and more important in daily practices of occupational health professionals, the research of scientists and regulatory decisions of policy makers, there is a great need for a comprehensive resource guide. This Guide will provide such a service in time to health professionals. The type of resources summarized in the guide is comprehensive, informative and well categorized. It is also most up to date. It will be a great help to professional audiences in their daily work.

2. **Does the Dermal Resource Guide provide sufficiently transparent descriptions about**
 - **Background, purposes, intended use, topic area (Chapter 1)?**

The front page "Quick guide to dermal resource guide use" is well prepared and easy to use. The background, purposes, intended use and topic areas are clearly described and informative. My main concern has to do with the orders of topic areas. I would suggest the following orders:

For general audience

Table 3A. Overview of Exposures of the Skin to Chemicals

Table 3B. Hazard Identification

Table 3C. Characterization of Exposure Condition (Exposure Characterization)

Table 3D. Risk Assessment – Evaluating for the presence of Harmful Chemicals

Table 3E. Risk Management – Reduction of Skin Exposure Risk

For professional audience

Table 4A. Overview of the Investigation and Control of Occupational Skin Exposures

Table 4B. Hazard Identification from Toxicological Studies or Modeling and Clinical Aspects

Table 4C. Exposure Characterization

Table 4D. Surveillance

Table 4E. Risk Assessment

Table 4F. Risk Management

Usually, we (both general and professional audiences) would like to have a general idea about skin related issues and their importance which is the overview; then we want to have specific knowledge about specific chemicals used in the workplace and their potential health effects which is hazard identification. We can check the MSDS or search the web to find out everything about skin exposure to chemicals of concern. We want to know enough information including sampling methods before we try to characterize or actually assess the exposure in the workplace (general audience) or for specific projects (professional audiences). So exposure characterization would logically follow the hazard identification. Then for those who are interested in evaluating skin diseases and their treatment (clinicians) and those who need to monitor their occurrence (state health professionals for example), they can do that. For a good risk assessment and risk management, a thorough understanding of all the above categories is essential. So these come later in the list.

Some minor specific comments: 1) "Quick guide to.....guide use" page at Step 3, change "Author and/or title" to "title and author" to match with the table. 2) Similarly, rearrange the order of content for the 3-4 lines in the first paragraph of Introduction.3) "1.1 Background" mentioned contact dermatitis as local effects and skin absorption to cause systemic effects. It could also mention allergy and sensitization that could lead to respiratory problems such as isocyanates asthma.

- **Criteria for selection of resources and format (Chapter 2)?**

The focus on review articles was good because this way it gives the summary information rather than individual research. It is ok to have selected literature published in recent 10 years, but ideally I would have tried to find references 15 years old or more.

- **Overall information availability**

Overall information is rich and well categorized. For the general audience in Risk management, it would be good to have a category on "how to comply with regulations" such as OSHA personal protective equipment standard.

3. **Are there any critical documents or resources which have been overlooked? Similarly, are there any documents which are inappropriate and inadequate for inclusion in the**

documents? Please identify specific documents or resources which should either be added or deleted.

Nothing significantly overlooked, inadequate or inappropriate was identified. A couple of documents were not found in the summary and thought they could be included:

- A recent review on isocyanates:
Bello D, Herrick CA, Smith TJ, Woskie SR, Cullen MR, Liu Y, Redlich CR. Skin exposure to isocyanates: reasons for concern. *Environmental Health Perspective* 2007;115(3):328-335 (review).
- A book chapter on skin exposure by Mark Boeniger and Jennifer Sahmel in the AIHA's exposure assessment book. Details could be obtained from Mark Boeniger or AIHA.

4. **The Dermal Resources Guide contains information published through late 2005 to early 2006. If you are aware of a critical study that has been published in 2006 or 2007 that should be included in the Dermal Resources Guide, please include your comments and review.**

Not sure if you meant a specific research study, a study with meta analysis nature or a review article, but here is one from our group that addresses exposure assessment and evaluation on factors affecting exposures and sampling methodologies:

Liu Y, Bello D, Sparer JA, Stowe MH, Gore RJ, Woskie SR, Cullen MR, Redlich CA. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: a qualitative assessment. *Annals of Occupational Hygiene* 2007;doi: 10.1093/annhyg/mem021.

Another one on isocyanate. It is a study not a review:

Pronk A, Yu F, Vlaanderen J, Tielemans E, Preller L, Bobeldijk I, Deddens JA, Latza U, Baur X, Heederik D. Dermal, inhalation, and internal exposure to 1,6-HDI and its oligomers in car body repair shop workers and industrial spray painters. *Occup Environ Med.* 2006 Sep;63(9):624-31.