
# Occupational and Environmental Exposures of Skin to Chemicals - 2005

Abstract for Poster 28

## An objective comparison of surface wipe media for sampling lead on hands

M. Boeniger
NIOSH, Cincinnati, United States

Hand contamination by toxic compounds, such as lead, presents a potentially significant health hazard to workers if the contamination is transferred to the mouth by food, smoking, etc. One method to sample the mass of contamination on hands is to wipe the skin and analyze the wipe media. Commercially available prewetted wipe media that are presently used for sampling lead include Palintest7 wipes, Wash'nDry7 wipes, and Ghost™ wipes. The Palintest and Wash'nDry media are made of cellulose fiber while the Ghost wipe is made of a nonwoven polyvinyl alcohol fiber. An ASTM test method E 1792 provides some specific minimum requirements and some nonspecific criteria that these media should meet. However, no objective determination of the performance or characteristics of these different wiping media were found in the open literature, and several practical aspects of these wipes were measured such as tear resistance, wetness, and drying rate which were not specified by E 1792. Also, a laboratory study was performed to assess the recovery of lead oxide (PbO) dust from hands at two loading levels. Up to four successive wipes were taken during each hand wiping and analyzed individually. The results of this study indicate that only about 52 – 62% of the total lead loading is recovered with the first wipe but that up to 75% recovery could be obtained with three successive wipes. Ghost wipes contain about twice the moisture as the cellulostic wipes, even though the dry weight and size are approximately the same. The drying rate for each wipe media are essentially the same, although the Ghost wipe lost the least amount of moisture in a three minute time period during which they were tested. Tear resistance, as measured in grams for a 1.24" strip of Wash & Dry, Palintest, and Ghost wipes were 381, 1469 and 1975, respectively. Abrasion resistance paralleled tear resistance with the two cellulostic wipes having less abrasion resistance than the Ghost wipe. The results of these performance measures should be helpful for selecting wipe media for environmental and industrial hygiene surface and skin sampling for lead be addressing these critical performance efficiencies.

- Main Page
- General Information
- Co-sponsors
- List of Planners
- Concise Schedule
- Important Dates
- Preliminary Program
- Workshops
- Short Courses
- Talks and Posters
- Vendor Exhibits and Seminars
- Author Index
- Related Events
- Conference Registration and Local Information
- Call for Abstracts

Content last modified: 17 May 2005

Return

OEESC 2005

# Occupational and Environmental Exposures of Skin to Chemicals - 2005

**Site Contents**



The National Institute for Occupational Safety and Health (NIOSH) and the Karolinska Institutet in cooperation with the Stockholm County Council are taking the lead in organizing this conference. NIOSH is maintaining this website.

**Disclaimer**: Co-sponsorship of the conference and workshop and posting of abstracts and workshop discussion papers (white papers) on a website by NIOSH does not constitute endorsement of the views expressed or recommendation for the use of any commercial product, commodity or service mentioned. The opinions and conclusions expressed are those of the authors and presenters and not necessarily those of NIOSH. Recommendations are not considered as final statements of NIOSH policy or of any agency or individual who was involved. These presentations are intended to be used in advancing knowledge needed to protect workers and the general public.

Menu items on the left provide more information about OEESC-2005.

This conference follows the success of the first International Conference on Occupational and Environmental Exposures of Skin to Chemicals: Science and Policy, which was held near Washinton, DC, in September, 2002.

Return



- Main Page
- General Information
- **Co-sponsors**
- List of Planners
- Concise Schedule
- Important Dates
- Preliminary Program
- Workshops
- Short Courses
- Talks and Posters
- Vendor Exhibits and Seminars
- Author Index
- Related Events
- Conference Registration and Local Information
- Call for Abstracts


# Occupational and Environmental Exposures of Skin to Chemicals - 2005

## Co-sponsors

**Major co-sponsors:**

National Institute for Occupational Safety and Health, USA

Karolinska Institutet and Stockholm County Council, Sweden

Swedish Work Environment Authority, Sweden

The National Institute of Public Health, Sweden

Swedish Council for Working LIfe and Social Research, Sweden

Swedish Asthma and Allergy Association, Sweden

The Vardal Foundation - for Health Care Sciences and Allergy Research, Sweden

**Other co-sponsors:**

Swedish Chemicals Inspectorate, Sweden

National Institute for Working Life, Sweden

The organizers of OEESC-2005 appreciate those organizations that supported the goals of this conference through financial or in-kind contributions. Contributions were used to pay the full or partial travel and conference registration costs of invited speakers and guests and to reduce the registration fees of attendees by paying part of the costs associated with such expenses as meeting room rental, poster display board rental, abstract book, breaks, reception and conference dinner.

The conference account is managed by Karolinska Institutet.