



2008 FLC Midwest Region Awards

Excellence in Technology Transfer Award

This regional award is presented to an employee or team of employees of a Midwest Region member laboratory in recognition of outstanding work during the transfer of a technology between a federal laboratory and another entity. This year, the award winners included the team of Eric Esswein, Mark Boeniger, and Kevin Ashley from the National Institute for Occupational Safety and Health (NIOSH) for the invention and commercialization of handwipes to effectively remove toxic metals from surfaces, including skin.

The NIOSH researchers documented the magnitude of lead exposure among workers and demonstrated that hand washing alone could not adequately remove lead from a worker's hands. In fact, the research revealed that washing with soap and water can actually increase the penetration of lead into the skin. The research also demonstrated the effectiveness of the handwipe removal method.

The patented technology consists of skin-safe, three-dimensionally textured absorbent wipes onto which a cationic surfactant and a weak acid are applied. The researchers incorporated multiple metal removal techniques in their wipes - including surfaction, chelation, pH adjustment, and mechanical removal - in order to ensure that toxic metals are removed from skin and other surfaces.

The researchers published two articles, one for a trade journal and one in a peer-reviewed journal, and made presentations at several national and international occupational health conferences. The presentations described the results of their research and also emphasized the potential financial gains available to companies implementing the technology. The NIOSH team also developed a marketing and business plan that stressed the potential market size for the technology (applications are possible in the laboratory, in industrial operations, and even for the general public).

The technology was licensed to MEDTOX Scientific Inc. MEDTOX has packaged the technology in both single-unit wipes and in canisters. The single-unit format will be marketed to the healthcare industry for removing lead contamination from skin prior to collecting blood for testing blood lead levels. The canister format will be marketed to the industrial sector for removing lead contamination from both people and workplace surfaces. Another company, Mk-IX Technologies, has expressed interest in licensing the technology for military and police personnel to remove toxic residues after the use of firearm.