Proceedings of the International Conference on Occupational & Environmental Exposures of Skin to Chemicals: Science & Policy

Hilton Crystal City September 8-11, 2002

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Development Of A Procedure For The Quantification Of The Biomar (2-Methoxyethoxy)Acetic Acid In Human Urine

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A simple and effective procedure was developed for the detection and quantification of (2-methoxyethoxy)acetic acid (MEAA), which is a metabolite and biomarker for exposure to 2-(2-methoxyethoxy)ethanol. Human dermal exposure to 2-(2-methoxyethoxy)ethanol is of concern because of the general toxicity of glycol ethers and this compound, specifically, is used as an anti-icing additive to the military jet fuel, JP-8. Possible dermal absorption by aircraft fuel cell maintenance personnel is concern; therefore, a test procedure for MEAA in urine samples was devised. The urine sample preparation consisted of ethyl acetate extracti followed by esterification of the MEAA to produce the ethyl ester. Extract of the ethyl ester with methylene chloride and concentration of sample solution to a one milliliter volume was done to produce the final solution f analysis. Measurement was by a gas chromatograph equipped with a ma selective detector (MSD) using a 50-m X 0.20-mm (id) HP-1 capillary column and a temperature program of 50° to 230° C. Deuterated (2-buto acetic acid was used as a procedural internal standard for this analysis procedure. Ion m/z 59 was monitored for the ester of MEAA and ion m/z was monitored for the internal standard. A recovery study of spiked urine demonstrated good accuracy and precision; recovery varied between 95· 103% for 2 to 20 micrograms/ml MEAA spiked urine samples. The limit o detection (LOD) was determined to be approximately 0.1 micrograms/ml this procedure.

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The Centers For Disease Control And Prevention
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Present the Proceedings for

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The National Institute for Occupational Safety and Health (NIOSH) co-sponsored this inaugural conference to bring together dermatologists, occupational hygienists, laboratory researchers, policy makers and other to focus on the science, knowledge gaps and policy opportunities related occupational and environmental exposures of the skin to chemicals.

The site was the Hilton Crystal City at Ronald Reagan National Airport hotel. The main conference was followed by a one-day workshop focusin on specific research and public health opportunities for decreasing the burden of skin exposures to chemicals in both workplaces and the gener environment.

Approximately 135 individuals attended. A second conference is expecte in 2004.

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