

**DERMAL EXPOSURE MONITORING: A STUDY OF CHROMIUM EXPOSURE ON
HUMAN SKIN**

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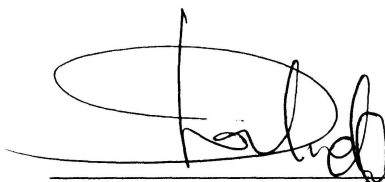
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ABSTRACT

DERMAL EXPOSURE MONITORING : A STUDY OF CHROMIUM EXPOSURE ON HUMAN SKIN

The aims of this study are first, to develop a method of dermal chromium exposure monitoring by wiping. Then, there will be determination if dermal chromium exposure could be monitored by this method and if could, quantification of the chromium exposure have to be made. Afterward, by depending on the result of the study, a decision will be made if the method applied is realistic to be further used. The method consists of wipe sampling method, sample preparation and sample analysis is developed following several alteration and experimentation during the study. There are two subjects have been monitored in this study for several important reasons. During the sampling process the subject had complied with guidelines in making sure the assessment is of actual dermal chromium exposure which refers to the amount of chromium available for dermal absorption. The sampling was done by using wiping method with a few pieces of filter media (MCE 387) for each wiping. The assessment of dermal exposure is accomplished by measuring the amount of chromium in contact with the skin over a period of time. Later, the small plastic bags containing the filter membrane are prepared for sample preparation. The sample is analyzed for chromium by method of atomic absorption spectroscopy. There are six samples that have been analyzed and the result is varied for each sample. S6 were detected to contain the highest amount of chromium. The S2 were contained the lowest amount chromium. However, the entire sample that has been analyzed contains high level of chromium and exceeds the amount that is permitted by the regulation. Detection of chromium indicates dermal chromium exposure. It can be concluded that my subject is at risk because of exposure to high concentration of chromic acid.