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SAFETY AND HEALTH ANALYSIS OF WORKPLACES EXPOSED TO STYRENE

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Abstract

The objective of this work was to analyse safety and health at work regarding the exposure of workers to styrene, and to establish the basis for an exposure control system over the entire Republic of Slovenia. The main goals were to determine the number of exposed workers, the levels of exposure at workplaces, and the effects to workers health. The measurements of the airborne styrene concentrations and the biological monitoring of the exposed workers were performed. One thousand four hundred and sixty one workers, i.e. 6.5 % of those included in this study, were exposed to styrene concentrations between 0.01 and 700 ppm. The highest exposure occurred during the manual lamination of huge surfaces where the Occupational Exposure Limit (OEL) was occasionally exceeded by 35 times. One hundred and eighty nine female workers, representing 45.1 % of all workers in manual lamination, were frequently exposed to such high concentration, many of them in the fertile period. Biological monitoring revealed that characteristic indicator of styrene in biological samples exceeded biological limit values within the group of manual and lacquering workers, even if styrene airborne concentrations were lower than the OEL value. The presented survey can serve as a guide for performing similar analyses for other dangerous substances at workplaces, which are not yet adequately examined.

Key words: biological monitoring, health, safety, styrene, surveillance

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