

Comparison of outcomes for different users using the same exposure modelling tool; Stoffenmanager 2.0, when used in four different branches of industries

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Abstract

Stoffenmanager was developed to be a control banding tool regarding inhalable exposure to chemicals helping small and medium-sized enterprises with their risk assessments. However, Stoffenmanager continued to develop and a quantitative exposure assessment part of the tool was soon available with the 90th percentile of the predicted exposure as outcome. The aims of this study was to examine if different users of the same exposure modelling tool (Stoffenmanager) come to the same result when modelling the same task and if workers are protected when only relying on the outcomes of the tool. The users were all simultaneous at the working sites, studying the scenarios. The study was done regarding inhalable exposure at four companies in different branches of industry; wood, printing shops, metal foundry and spray painting. Three scenarios at each company were modelled and measured, consensus assessments were also modelled for each scenario. The differences between the multiple users of the model were large in the quantitative exposure assessment part. Half of the scenarios, spread over the industries, had a wide range between the outcomes. The parameters in Stoffenmanager that had shown to differ more than others in answers were: if it concern shaping of material, characterization of task, frequency, breathing zone, personal protection, inspections and maintenance of machines and control measures. When comparing the measured exposures with the consensus 90th percentile outcome in the quantitative exposure assessment part of Stoffenmanager only two scenarios had a slightly higher measured exposure value than modelled.