



Contribution ID: 95

Type: not specified

Comparing workers measured dust exposure with predicted exposures using a NF/FF model, NanoSafer, and the ART exposure assessment tools

Wednesday, 11 March 2015 16:00 (30 minutes)

Additional Authors: Kirsten I Kling; National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark; kil@nrcwe.dk
Marcus Levin; National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark; mle@nrcwe.dk
Keld A. Jensen; National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark; kaj@nrcwe.dk

Abstract: Here we measured near field (NF) and far field (FF) concentrations in a paint factory during pouring of paint pigments/fillers from 25 kg and 500 kg bags [1]. The pigments/fillers dustiness indices were characterized by using the down-scaled EN15051 dustiness drum [2]. Dustiness indices were used to calculate the dusts emission rates used in the tools by taking into account modifying factors [3]. The measured concentrations were compared with concentrations predicted with a NF/FF model (e.g. [4]), the ART, and the NanoSafer. We found that a handling energy value deviated significantly from previously assigned values. We found that the ART tool overestimates ~5 times the exposure concentration and the emission rate is not directly related to the amount of material used. Studies in progress on the comparability of the basic exposure estimations in the different tools will be presented. As expected, the emissions and modifying factors need to be studied in well controlled environments to improve our understanding.

Primary author: KOIVISTO, Antti J. (National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark)

Co-author: KOPONEN, Ismo K. (National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark)

Presenter: KOIVISTO, Antti J. (National Research Centre for the Working Environment, Lersø Parkallé 105, Copenhagen DK-2100, Denmark)

Session Classification: 6B Occupational and consumer exposure

Track Classification: Parallel session 6B: Occupational and consumer exposure