

# Relationship between the Ambient Concentration of Mixed Solvents in Workplaces and the Concentration of Solvents in the Breathing Zone of Workers

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## Abstract

To investigate the relationship between stationary monitoring and personal monitoring in workplaces using solvent mixture, three sets of air samples were taken. A first set of samples (WP) was taken at many points equally distributed in the workplace to get an average value. This result will hereafter be requested to as A sampling. A second set (NW) was obtained from places near the position of the workers and a third set (BZ) was secured from the breathing zone of the workers. Close correlations were found among the concentrations for each air sampling, i.e., there was a close relationship when comparing (NW) to (BZ) and (WP) to (BZ). The concentration of solvents in the breathing zone of workers was found to be higher than the geometric mean of ambient concentrations by the A sampling method and lower than the concentrations at the places at which workers exposure was considered to be at a maximum, the B sampling method.

The results suggest that the concentration of solvents in the breathing zone of workers is approximately equal to the concentration of solvent vapors taken near the positions of workers by the A sampling method, and thus the latter is a useful indicator of the amount of exposure to workers who remain in the same place for most of the work day.

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