

EMISSION, FATE AND EXPOSURE OF PAHS IN TIANJIN, CHINA

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Exposure of on-duty policemen to PAHs in an urban district of Beijing was investigated using personal sampler in summer 2004. Both gaseous and particulate PAHs were sampled with PUF and glass fiber filter. Seven daily samples were collected every another day for a period of half month. Four duplicates were samples each day for policemen. Sampling period lasted for 11-12 hours during daytime, covering 4-5 shifts on each post. Two stationary samplers were set up as controls, one was around 40m upwind from a main road and another one on an university campus. Meteorological data were also collected during the sampling period.

It was found that there was no significant difference between the two control sites, while significant differences were revealed statistically between the policemen and controls for all individual PAH compounds. By average, both gaseous and particulate PAHs considered, the exposure rate of PAH16 to policemen was twice as high as that of the control, while carcinogenic PAH8 was three time higher.

The exposure rates from day to day were very much different. For both gaseous and particulate PAH exposure rates, the change patterns from were similar between the policemen exposure and the control. For the controls, 4-5 times difference were found for the daily averages. For the policemen, however, the maximum daily exposure was only 2.5 times of the minimum. For the policemen and the control near the road, the exposure rates to gaseous PAHs were positively correlated to moisture and negatively correlated to temperature. No such correlation exist for the particulate exposure.