

Documents

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Metals in respirable and inhalable dust at educational institutions

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Abstract

Haze episode has always becomes the one of the common reasons for emergency closing of school. Unique approach had been used to collect and examine the toxic metal of the respirable and inhalable dust by combining the latest personal cyclone and seven-hole head sampler together with the latest spectrometer of inductively coupled plasma-mass spectrometry (ICP-MS) in a single framework. Iron is found significantly different with the highest concentration at 107.895 ng m⁻³. The mean ranges of metal in respirable dust found in educational institutions are between 0.005 and 78.629 ng m⁻³. The findings of this research seen the amount of respirable dust exceeds more than 21.13 per cent than inhalable dust. Analysed metals found are not exceeding the ambient air exposure limit established by Department of Environment Malaysia. Hence, it is understood that the outdoor atmospheric environments of Malaysian educational institutions are non-hazardous for both visitors and occupiers (students and personnel). The high level of iron signify that it is safe for the crossing of children to have a traffic light in front of the school, but the idling of motor vehicles emitted more pollutant that risks health of the school children, teachers and officers. These suggest that when there are schools, there shall be constructed of flyover crossing for long term solution or with certain distance to traffic sources. © 2018 by MIP.

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