

# Polybrominated dibenzo-p-dioxins and dibenzofurans emission from a cement kiln co-processing solid waste

M.H. Zheng\*, G.R. Liu, L.L. Yang, Y.Y. Zhao

State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, P.O. Box 2871, Beijing 100085, China

Presenting author email: [zhengmh@rcees.ac.cn](mailto:zhengmh@rcees.ac.cn)

Cement kilns have been increasingly used for the co-processing of solid wastes (Liu et al. 2015 and 2016). However, the levels and profiles of emerging persistent organic pollutants need to be further clarified. A field study were conducted to clarify the profiles, and distributions of polybrominated dibenzo-p-dioxins and dibenzofurans (PBDD/Fs) in a cement kiln co-processing solid waste. The PBDD/F concentrations in the raw materials were much higher than those in particle samples from different process stages in the cement kiln. The destruction efficiencies for PBDD/Fs in the cement kiln were high. PBDD/F concentrations in the clinkers were far lower than that in the raw materials. PBDD/F distribution patterns in particle samples collected from different process stages indicated the cement kiln backend was a major site for PBDD/F formation. PBDFs with high levels of halogenation, such as heptabrominated furans (HpBDF), were the dominant contributors to the total PBDD/F concentrations and accounted for 42%–73% of the total PBDD/F concentrations in the particle samples. Our results showed that co-processing of municipal solid waste in a cement kiln may influence the congener profile of PBDD/Fs, especially for the higher halogenated PBDD fraction. In addition, there were significant correlations between the decabromodiphenyl ether and heptabrominated furan concentrations.

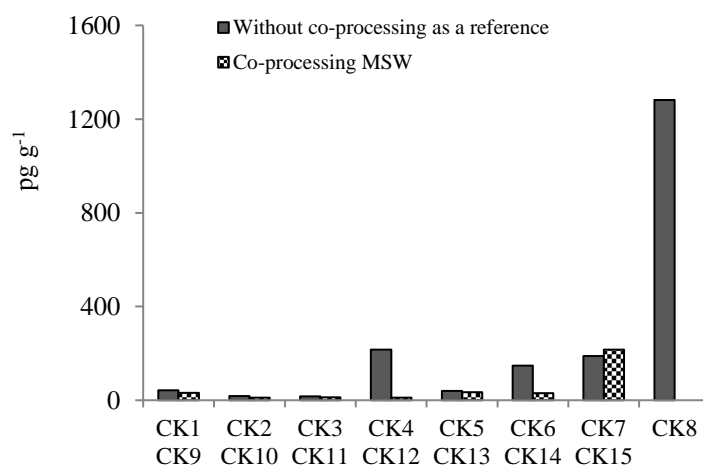


Fig.1 Polybrominated dibenzo-p-dioxins and dibenzofuran (PBDD/F) in particle samples collected from different stages of a cement kiln co-processing MSW and a reference sampling campaign (no MSW co-processing).

## References:

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