

THERMAL DESORPTION OF PERSISTENT ORGANIC POLLUTANTS IN LABORATORY-SCALE USING CLASSICAL AND MICROWAVE HEATING

TERMICKÁ DESORPCE PERSISTENTNÍCH ORGANICKÝCH POLUTANTŮ
V LABORATORNÍM MĚŘÍTKU S VYUŽITÍM KLASICKÉHO A MIKROVLNNÉHO
OHŘEVU

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Abstract:

Work deals with the evaluating of effectivity of thermal desorption of chlorinated organic compounds from the matrices typical for construction waste. In the case of classical heating the efficiency of desorption was evaluated in terms of applied temperature in desorption device. Microwave heating effectivity was evaluated in the mode of repeated decontamination process at the same material with repeated wetting and microwave exposure. The arrangement of the classical heating reached a very high efficiency of desorption at temperatures below the boiling point of the contaminants, Significant increase of this efficiency occurs around the boiling point of water. This phenomenon was also confirmed using microwave heating. Conjoint removal of contaminants with water vapor from the matrix has essential importance.

Keywords:

thermal desorption, classical and microwave heating, persistent pollutants, laboratory scale, decontamination