Solid-phase microextraction using octadecyl-bonded silica immobilized on the surface of a rotating disk: Determination of hexachlorobenzene in water

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Solid-phase microextraction of hexachlorobenzene from water was implemented for the first time on a rotating disk coated with an octadecyl-bonded silica (C 18) sorptive phase. The results indicate that the sorption performance of this phase for the model analyte selected is similar to that observed using a rotating disk containing PDMS. In both cases, equilibrium is achieved within approximately 120min for samples volumes of 50mL and decreases to 20-30min when the sample volume is decreased to 10mL. The comparable behavior observed for the sorption of HCB in both phases is consistent with a similar rate-determining step for extraction, which suggests that the overall mass transfer of analyte is not limited by internal diffusion into the phase but by diffusion into the aqueous stagnant layer. The main advantage in the use of the C 18 phase is that the elution of the analyte was achieved in 15min compared with 45min for PDMS because, in the case of C 18, dichloromethane can be used as th