

Sorption Kinetics of Pentachlorophenol on Hexadecyltrimethylammonium clay. M.G. STAPLETON\* and D.L. SPARKS, *University of Delaware.*

The sorption/desorption kinetics of pentachlorophenol (PCP) on HDTMA modified montmorillonite were investigated using a continuous stir flow reactor. Pentachlorophenol is a hydrophobic ionizable organic compound (HIOC) with a pKa of  $\approx 4.7$ ; thus it can exist as both a molecule and/or anion in the environment. We have determined that both the associated and dissociated form will sorb to HDTMA-montmorillonite. However, the sorption characteristics of the two species are different. The sorption rate for both species was investigated. For these studies, 100% CEC exchanged HDTMA montmorillonite was used as the sorbent, the PCP solution concentration ranged from 20 to 100  $\mu\text{mol kg}^{-1}$ , the pH ranged

from 4.0 to 8.0 and the background ionic strength ranged from 1 to 100 mmol kg<sup>-1</sup> NaCl. Preliminary results indicate that sorption of the phenolate anion is faster than the PCP molecule. This study investigates the sorption/desorption kinetics of HIOCs, and will provide basic information regarding their fate in the environment.

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