

Zn Sorption Mechanisms on Soil Clay Minerals and Oxides.

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Under certain reaction conditions metal precipitate formation may be an important metal sorption mechanism on clay mineral and oxide surfaces. The structure and therefore stability of any formed precipitates may be dependent on the identity of the sorbent. X-ray absorption fine structure (XAFS) spectroscopy was employed to monitor Zn sorption to gibbsite, amorphous silica, and a soil clay mineral fraction. Results indicate that within 30 minutes at pH 7.5 Zn precipitates formed on the gibbsite and soil clay mineral fraction. A Zn precipitate formed in the presence of silica only after several days. The structure of the sorbent influenced the type of precipitate phases which formed. Upon sorption to the Al-bearing sorbents a Zn-Al hydroxalite-like precipitate formed, distinctly different from the precipitate which formed on the amorphous silica.

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