Cosolvent Effect on Na-Ca exchange reactions in Bentonite Clay. (S02-srour135746-Poster)

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Abstract:

Relatively little work has been done on metal-soil reactions in solutions other than water. However, nonaqueous solvents are occasionally groundwater pollutants and have the potential to affect properties of surfaces and ions in solution. Our objective was to determine the effect of ethanol, a water-miscible organic solvent, on Na-Ca exchange selectivity coefficient for bentonite. Ethanol concentrations of 0, 10, 30, 50, 70 and 95% (v/v) were used. Na and Ca were added as chloride salts, at constant nominal ionic strength (I=0.03). Interlayer spacing was determined by X-ray diffraction. Increasing ethanol concentrations increased the apparent selectivity for Na. Results are interpreted in terms of solvent effects on ion activity coefficients and clay interlayer spacing.

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