Formation of Highly Selective Cesium-Exchange Sites in Montmorillonites

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Abstract: Ion-exchange sites with very high selectivity for Cs (ΔG Ca 2+ Cs + = 40 kJ/eq) similar to illite were generated in a controlled way in montmorillonites by (1) repeated wetting-drying cycles and by (2) charge reduction using the Hofmann-Klemen effect. An almost continuous range of sites with selectivities varying from in K Ca 2+ Cs + = 33 to 5 was observed.

Key Words: Cation exchange • Cation selectivity • Cesium • Hofmann-Klemen effect • Montmorillonite • Wetting-drying

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