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Cu and Pb Adsorption on Some Bentonitic Clays

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Abstract: Cu²⁺ and Pb²⁺ adsorption isotherms were measured on some clay samples obtained from various regions of Turkey. Also specific surface areas of clays were determined from adsorption data of ortho-phenanthroline(OP). The adsorptions of ions and OP were studied using the batch equilibration technique as a function of adsorbate concentration. The adsorption data, over the whole range of concentrations used, follow the Langmuir adsorption isotherm. The retention capacities of the adsorbates and the cation exchange capacities of the clays were determined. Plots of K_d , the distribution coefficient of ions between the solid and solution phases, vs. Γ , the surface density of adsorbed ions, showed that all the samples behave similarly, i.e. K_d sharply decreases with increasing values of Γ . The amount of Pb²⁺ adsorbed is about 3-4 times that of Cu²⁺ and the same adsorption capacity sequence was found for each ion.

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