
Sorption of Trace Constituents from Aqueous Solutions onto Secondary Minerals. II. Radium

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Abstract: Radium sorption efficiencies as a function of temperature, Ra concentration, and secondary mineral sorbate were determined in a 0.01 M NaCl solution. Radium sorption on a characterized clinoptilolite, montmorillonite, nontronite, opal, silica gel, illite, kaolinite, and glauconite under comparable experimental conditions allowed determination of Ra sorption efficiency curves for each, through use of Freundlich constants, over the same temperature and initial Ra solution concentration range. Similar sorption data for U on the same secondary minerals over the same temperatures allowed comparison of sorption efficiencies for Ra and U. Clinoptilolite, illite, and nontronite were the most efficient Ra sorbents, while opal and silica gel were the poorest Ra sorbents. Generally, Ra sorption on secondary minerals was much greater than U sorption under the same experimental conditions.

Key Words: Cation exchange • Clinoptilolite • Freundlich isotherm • Glauconite • Illite • Montmorillonite • Opal • Radium • Sorption

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