

Chromatographic observation of boron isotopic fractionation between kaolin clay and boron bearing solution

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In order to determine the boron isotope fractionation factor between boron in kaolin clay and boron in solution, as a first attempt, a break-through column chromatography at a high pressure (12.0 MPa) was performed. A boric acid standard solution (9.25 mmol/l, NBS SRM 951) was fed into a stainless steel column of 7 mm inner diameter packed with boron-free kaolin clay with the flow rate of 0.8 ml/h. The lighter isotope (^{10}B) was preferentially enriched in the clay, and the factor obtained was 1.0023 at 293 K.