Retention of Iodide and Rhenium by Layered Double Hydroxides. (S02-mckinney161959-Poster)

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Abstract:

Layered double hydroxides (LDHs) or the so-called positive clays are the analog of the extensively studied family of negatively charged smectite clay minerals. The successful treatment of the high level waste confinement at repository sites requires the development of geochemical barriers to retard the migration of radioactive anions such as iodide and rhenium. Smectitic clays, which exist in the subsurface of many repository sites, have been proven successful for the retardation of cations. Therefore, utilizing LDHs for the retardation of anions should be successful. Our research objective was to determine the iodide retention characteristics of a layered double hydroxyl (LDH). Layered double hydroxide was synthesized from the intercalation of LiCl into a gibbsite structure. Adsorption isotherms of iodide were obtained at pH 7.5. The efficiency of LDH in immobilizing iodide is compared with that of silver chloride.

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