



IMMOBILIZATION MECHANISMS OF CHROMIUM IN CEMENT-BASED SOLIDIFIED WASTE

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Abstract

Knowledge of the binding mechanisms of heavy metals to cement minerals is essential for the prediction of the long-term leachability of cement-based solidified waste containing heavy metals. In this paper, the sorption of chromate ions onto calcium-silicate-hydrate (C-S-H) in equilibrated aqueous suspensions was investigated as a function of liquid-to-solid ratio. The hypothesis of super-equivalent adsorption was assumed to be involved in chromate ions immobilization. This hypothesis is supported by a well-fitted isotherm for sodium with Langmuir isotherm and a well relationship between sorbed chromium and sorbed sodium.

Key words: adsorption, cement, chromium, immobilization mechanism

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