Novel approach to NaOH separation: Synergistic pseudo-hydroxide extraction by a fluorinated alcohol and cage-functionalized crown ethers

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A novel extraction approach to selective separation of NaOH from other Na^+ salts has been developed which is based upon the cooperative effect between cage-annulated azacrown ethers and a weakly acidic proton-ionizable fluorinated alcohol. Distribution results obtained for liquid-liquid extraction of mixtures of six different Na^+ salts reveal that addition of the fluorinated alcohol to solutions of any of the aza crown ethers in nitrobenzene synergistically enhances the ability of each of these host systems to extract NaOH. Little or no enhancement of other Na^+X^- salts was observed under these conditions. In the best system, the synergism was sufficient to bring the effective extraction of NaOH to near parity with that of highly extractable $NaClO_4$.