

Na-Cationite Filters to Reduce Anthropogenic Impact on the Hydrosphere

L. Yu. Aleksandrova

*St. Petersburg State Chemical Pharmaceutical University,
St. Petersburg, Russia*

Keywords: calcium hydroxide; barium carbonate; residual hardness; regeneration solution; sodium sulfate; water softening; calcium chloride; magnesium chloride; Na-cationite filter.

Abstract: A basic process scheme for recycling spent regeneration solutions of Na-cationite filters is proposed; it is based on the combination of reagent and thermal methods for extracting hardness salts from solutions. The precipitation of hardness cations from a model solution containing calcium, magnesium and sodium chlorides at different rates of $\text{Ca}(\text{OH})_2$ introduction at the first stage and the addition of Na_2SO_4 for the amount of hardness ions at the second stage was studied. It is shown that the introduction of barium carbonate makes it possible to almost completely extract hardness salts from the solution.

© Л. Ю. Александрова, 2022