Prevention of scaling and corrosion by reagent KISK-1

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\textbf{ABSTRACT}

The influence of the reagent KISK-1 (Russia) on the rate of corrosion of Steel 3 in mineralized (“hard”) waters of two industrial plants was studied. The water supply system of the two plants used in the study had sufficient difference in chemical composition. Thermostability of these waters was investigated in the presence of KISK-1 (the complex inhibitor of scaling and corrosion). It was shown that when used at correct dosage, KISK-1 is capable of significantly reducing the rate of corrosion of Steel 3 while also providing the water system's thermostability in evaporation, i.e. preventing the formation of sediments and deposits of salts. It was shown that the optimum dosage of KISK-1 remains relatively stable, while the tested waters were evaporated by 1.7–2.5 times. At the same time, the existence of some threshold concentration, above which the increase in the concentration of KISK-1 does not produce a proportional decrease in the rate of corrosion of Steel 3 was established. The approach offered in this study provides a useful framework to conduct comparative analysis and choose suitable reagents for the prevention of scaling and corrosion in water supply systems in a variety of industrial plants.

\textit{Keywords:} Thermostability; Inhibition of corrosion and scaling; Water supply system; Rate of corrosion; Hard waters

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