The Use of Combined Coagulants-Floculants for Municipal Wastewater Treatment

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Abstract: The article is devoted to the current topic of improving methods for treating urban wastewater using innovative combined coagulants-flocculants. In an environment of increasing water pollution and stringent environmental standards, the search for effective and cost-effective methods of wastewater treatment becomes especially important. The paper discusses the use of aluminum-silicon coagulant-flocculant (ACF) for the purification of municipal wastewater collected at the stage of mechanical treatment after sand traps. It has been shown that the use of ACF is accompanied by a decrease in the pH value of treated wastewater to 4.39 at a flow rate of 2.0 g/dm^3. The paper discusses the use of finely dispersed bentonite clay powders and limestone crushing screenings from a metallurgical lime production shop as acidity regulators. It has been shown that the most effective is the use of limestone in an amount of 0.8 g/dm^3 together with ACF (1 g/dm^3), which ensures maximum wastewater treatment efficiency of 73.7% and pH of the environment 6.78, and the joint use of ACF, limestone and clay in an amount of 0.4 g/dm^3 each, which ensures a cleaning efficiency of 75.4% and a pH of 6.94.