

Combined-Action Reagent Based on Iron-Containing Waste for Multi-Component Wastewater Treatment

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Abstract: Optimal conditions for acid modification of gas cleaning dust ensuring maximum transfer of iron from the solid phase to solution were determined. It was found that both sulfuric acid concentration and dust-to-modifier solution ratio positively affect this process. The influence of dust modification conditions and compositions of obtained combined coagulants-flocculants on the efficiency of multi-component wastewater treatment from agricultural enterprises was studied. Maximum efficiency, from 86.67 to 99.15% depending on composition, was achieved in treating wastewater from poultry and meat processing plant slaughter departments with elevated suspended solids content. The possibility and prospects of using a reagent obtained by acid modification of steelmaking gas cleaning dust in wastewater treatment systems as a replacement for traditional iron-containing coagulants are demonstrated.