

THE EFFECT OF HALIDE IONS ON THE ACTIVITY OF *d*-METAL COMPLEXES SUPPORTED ON NATURAL BENTONITE IN THE REACTION OF LOW TEMPERATURE OZONE DECOMPOSITION

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Abstract. The effect of halide ions ($X = \text{Cl}^-$, Br^- , I^-) on the kinetics of ozone decomposition by compositions supported on the natural bentonite of the Dashukovske deposit in Ukraine (N-Bent(D)) has been studied. It was shown that the activity of the $\text{KX}/\text{N-Bent(D)}$ composition in the ozone decomposition reaction increases in the series $\text{KCl} \ll \text{KBr} < \text{KI}$, but the complex composition $\text{K}_2\text{PdCl}_4\text{-Cu(NO}_3)_2\text{-KX}/\text{N-Bent(D)}$ demonstrates the maximum catalytic activity in the decomposition reaction in the presence of bromide ions. When the initial ozone concentration varied in the ozone-air mixture from 100 to 400 mg/m^3 , the reaction was first order for ozone at the beginning of the reaction (the first 10-15 min). The reaction order decreased in the stationary mode, which confirms the radical-chain reaction mechanism. It is shown that the bimetal composition $\text{K}_2\text{PdCl}_4\text{-Cu(NO}_3)_2\text{-KBr}/\text{N-Bent(D)}$ demonstrates the longest protective action time (1800 min) at ozone concentration of 1 mg/m^3 .

Keywords: ozone, complex, catalytic activity, halide ion, natural bentonite.

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