

VISCOSITIES OF ACETIC ACID, BUTYRIC ACID AND THEIR AQUEOUS SOLUTIONS

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The problem of industrial wastes disposal is extremely important. According to the last report of the Ministry of natural resources of Russian Federation [1], about half a billion tons of waste belonging to I-IV hazard classes have been accumulated in Russia. And this number increases every year. In this connection, the task of developing and introducing new progressive methods of utilization, capable of solving existing problems, is still relevant. The process of supercritical water oxidation SCWO [2] could be such a method. It is highly effective, ecologically safe, and still economically viable.

A large number of papers have been devoted to investigation of the SCWO process, including those carried out at the Heat engineering department of KNRTU [3, 4], where the present stage of the research is aimed at constructing a mathematical model of the water oxidation process. One of the most important conditions for obtaining such a model is the availability of reliable data on thermophysical properties of the participating thermodynamic systems.

This report is devoted to the investigation of the viscosity of acetic and butyric acids, as well as their aqueous solutions in the temperature range 298.15 - 473.15 K at pressures up to 30 MPa. The experimental values of the dynamic viscosity are obtained on the approved experimental setup [5]. The experimental curves are described by mathematical models using the Arrhenius-Andrade and Redlich-Kister equations.

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