

ABSTRACT:

This study centers on the determination of the hydrolysis constant and solubility of different organic acids, and this has become an "apple of the eye" of many researchers. The main objectives of this study are to investigate the conductance, molar conductance, specific conductance, and hydrolysis constant at various concentrations through conductometric measurements. The aim of the research is to study the effects of different amounts of ions, concentrations and extent of degree of dissociation and temperature on different organic acids. Hydrolysis is the decomposition reaction type in which one of the reactants is water and is used to break the chemical bond. The meaning of hydrolysis is the separation of chemicals that happens due to the addition. In organic chemistry, the process of hydrolysis in which protic acid was accompanied for the splitting of the chemical bonds through nucleophilic substitution reaction, when the element of water was added. Hydrolysis has three different types salt, acid, and base. The hydrolysis constant is the equilibrium constant of the chemical reactions. The conductometric measurement method was applied for selected organic acids, such as acetic and oxalic acid, to determine their hydrolysis constant. The digital conductometer was used to calculate cell constant, conductance, molar and specific conductance, degree of dissociation and hydrolysis constant of oxalic and acetic acid at 35°C. Different applications of conductivity measurement were to determine solubility of sparingly soluble salt, degree of dissociation and conductometric titration of organic acids. The Ostwald dilution law and Kohlrausch's law were applied to discuss the weak or strong electrolytes. The hydrolysis constant of acetic acid gives negative value at low concentration but there was abrupt increase in the hydrolysis constant due to dilution. But a time was reached when dilution was no effect on the hydrolysis constant. In case of oxalic acid firstly at low concentration the hydrolysis constant was low, but with the increase of concentration, the hydrolysis constant also increased but with the further increase in concentration, the hydrolysis constant becomes constant.