



A Study on 1-Nitro-2-Naphthyl Acetate as a Chromogenic substrate for the determination of Fluoride ions in water

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o- aryl esters are known to be sensitive to fluoride ions in organic medium. Based on this property, a kinetic method for the spectrophotometric determination of fluoride ion has been investigated. This studies has been carried out using 1-nitro-2-naphthylacetate (1-N-2-NAc) which liberates strongly coloured 1-nitro-2-naphthalate anion upon reaction with fluoride ions in dimethyl sulfoxide (DMSO). 1-N-2-NAc which has absorption maximum at 300 nm and 450 nm for yellow coloured 1-nitro-2-naphthalate ion indicated a large different between absorption maxima.

The reaction of 1-N-2-NAc with fluoride ions has been focused to kinetic study in DMSO at 25 °C. The rate of removal of 1-nitro-2-naphthalate anion has been obtained in DMSO by measuring enhances in absorbance with time at 450 nm. The reaction appears to follow a pseudo-first-order kinetics using initial rate at low concentration of fluoride with excess of 1-N-2-NAc.

It has proved that the initial rate of the reaction varies with fluoride concentration. It has facilitated to investigate the fluoride content in water sample. Several water samples were analyzed to find out fluoride concentration of its.

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