

Kinetics of Oxidation of Alcohols with Bis (Quinuclidine) Bromine (I) Bromide in the Presence of Pyridinium Trifluoroacetate

Laila Abdulhameed A. R.

Chemistry Department, Birzeit University, Birzeit, P.O.Box 14, West bank, Palestine
Tel: 2982146, Fax: 2982084
E mail: alaila@birzeit.edu

Abstract

This paper describes the kinetics and mechanism of oxidation of several monohydric alcohols to the corresponding aldehydes and ketones by bis (quinuclidine) bromine (I) bromide in the presence of pyridinium trifluoroacetate using chloroform as reaction medium. The rate constants, activation energies and related thermodynamic parameters were calculated. Deuterium kinetic isotope effects for propanol-2-d and propan(ol-d) were measured. Hammett reaction constants of *m*- and *p*- substituted benzyl alcohols were obtained. All evidences are in support of a two step mechanism and suggest that the transfer of hydride ion from the substrate to the oxidant is the rate -determining step.