

Research Title Pyrolysis of Some Chlorinated Hydrocarbons in Gas
Phase

Name Mr. Khompian Koonkliang

Research For Master of Science in Teaching Chemistry
Chiang Mai University 1981

Abstract

The pyrolyses of 1,1-dichloroethane and 1,2-dichloroethane were studied in a vacuum line apparatus which was designed and specially built for this research. It was found experimentally that the rate constants of both reactions increased with temperature. The calculated Arrhenius parameters of the reactions were

	$E_a \pm 6.50$ (kJ mol ⁻¹)	$\log A \pm 0.50$
1,1-dichloroethane	13.68	-2.16
1,2-dichloroethane	17.68	-1.895

From these Arrhenius parameters and the observed effect of added propylene, it is proposed that the mechanism for the pyrolysis of 1,1-dichloroethane is a molecular reaction while that of 1,2-dichloroethane is a radical reaction.