Organic Chemistry: Chapter 2 - Reaction Mechanisms

2.1 Understanding Reaction Mechanisms

A reaction mechanism describes the step-by-step process by which reactants are converted to products. Each step involves the formation or breaking of chemical bonds, and understanding these steps is essential for predicting reaction outcomes.

2.2 SN1 and SN2 Mechanisms

Nucleophilic substitution reactions can proceed via SN1 (unimolecular) or SN2 (bimolecular) mechanisms. SN1 reactions involve a carbocation intermediate and show first-order kinetics, while SN2 reactions occur in one step and show second-order kinetics.

2.3 Factors Affecting Mechanism Choice

The choice between SN1 and SN2 mechanisms depends on: (1) The nature of the leaving group, (2) The structure of the alkyl halide (primary, secondary, or tertiary), (3) The nucleophilicity of the nucleophile, and (4) The solvent used.