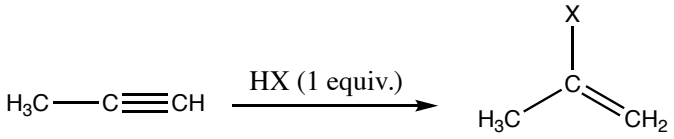
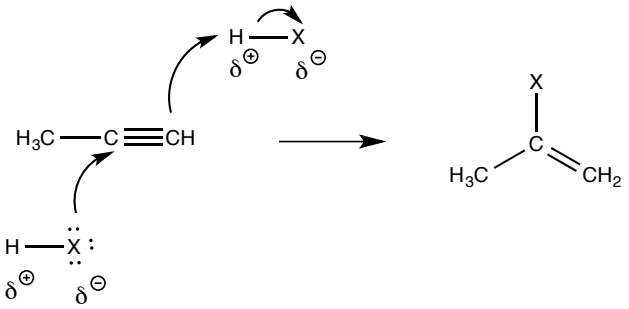
Chem 343 – Organic Reactions
Chapter 14

Synthesis and Reactions of Alkynes #5: Addition of 1 equivalent of HX to Alkynes



X = Cl or Br

Mechanism



The reaction of the alkyne in the presence of HX occurs with an overall third order kinetic rate law, where the HX is second order. The product of the reaction follows a Markovnikov addition. It is likely that the more substituted alkyne carbon exhibits a somewhat positive charge in the transitions state.

Consider that the 2π bonds are orthogonal to each other, that is, they are 90° apart. This means that their chemical properties are "somewhat" independent, especially for the this reaction.

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