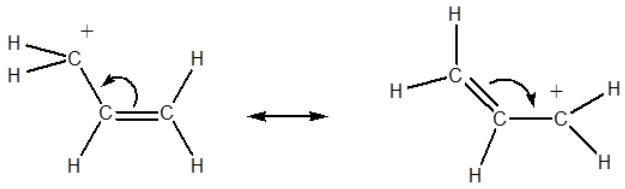
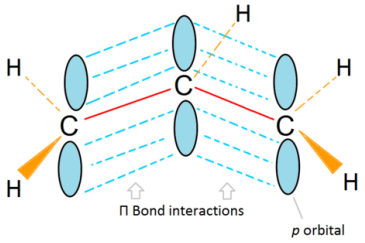
14.2: Resonance and Allylic Carbocations

Conjugation occurs when p orbital on three or more adjacent atoms can overlap Conjugation tends to stabilize molecules. Allylic carbocations are a common conjugated system.

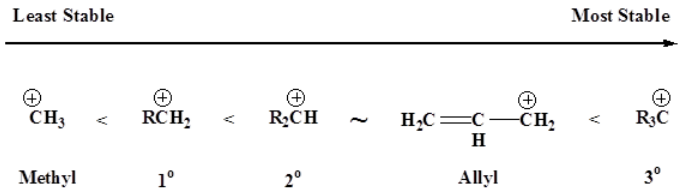


The positive charge of a carbocation is contained in a P orbital of a sp^2 hybrizied carbon. This allows for overlap with double bonds. The positive charge is more stable because it is spread over 2 carbons.



The true structure of the conjugated allyl carbocation is a hybrid of of the two resonance structure so the positive charge is delocalized over the two terminal carbons. This delocalization stablizes the allyl carbocation making it more stable than a normal primary carbocation.

Relative Stabilities of Carbocations



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