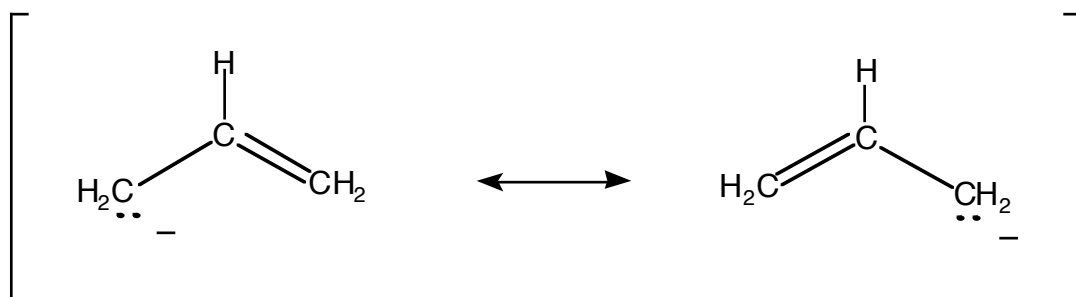


Answers to Problem 34, Chemistry 301X - 2006

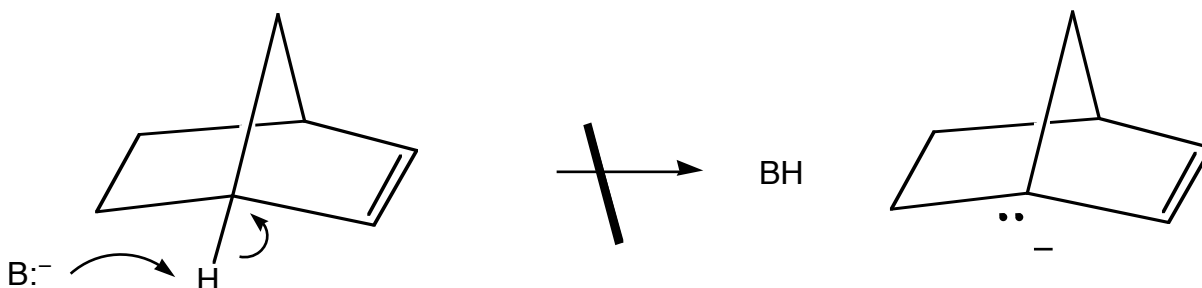


Why is it possible to deprotonate propene?

The resulting anion, and the transition state leading to it, will be stabilized by resonance. Delocalization of charge is a gigantic stabilizing effect.



Now look at a modified propene in **X**. Once again, the molecule cannot be deprotonated by any base. Why not?



The apparent resonance stabilization of the product anion is an illusion. As the orbitals of the π system and at the bridgehead of the bicyclic system are nearly perpendicular (see Bredt's rule, p.121-122) they do not overlap, and there is no resonance. Thus this "allylic" proton is just as hard to remove as the one in propane.

