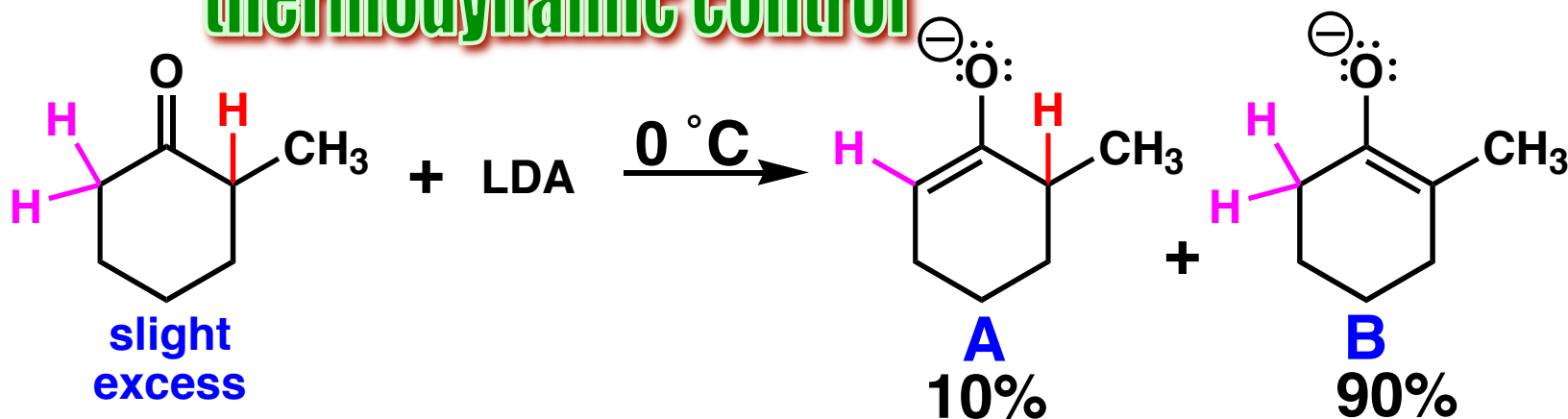


# Discussion Problem

Reactions under thermodynamic control must be reversible in order for equilibration to occur. Diisopropyl amine is such a weak base, however, that it is unlikely that the generated enolates **A** and **B** will equilibrate by deprotonation of diisopropyl amine. Explain how using a slight excess of the ketone provides a pathway for equilibration of the initially formed enolate anions.

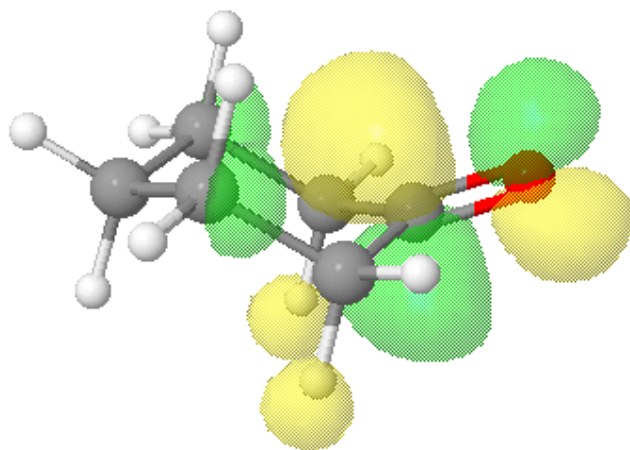
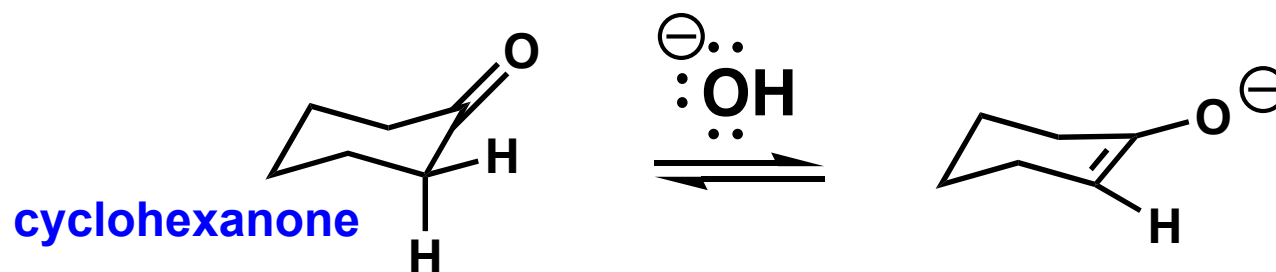
**thermodynamic control**



# Discussion Problem

## (Acidity of the Alpha Hydrogen)

Consider the deprotonation of the alpha hydrogen of cyclohexanone. Which frontier orbitals are involved? The LUMO of cyclohexanone is provided. Based on this image, which hydrogen (axial or equatorial) is more acidic? Why?



cyclohexanone  
LUMO

# Discussion Problem

## (The Wolff-Kishner Reduction)

