Carey Chapter 5 Reactions Used in ChemCoach Synthesis

Use KOCH₂CH₃ for secondary & tertiary alkyl halides.

Mixtures of stereoisomers (E & Z) will result when two are possible. E generally is favored.

Mixtures of regioisomers will result when possible, but the more highly substituted alkene is favored to a synthetically useful extent.

$$\begin{array}{c|c} H & X \\ -\overset{\cdot}{C} - \overset{\cdot}{C} - H & \\ & \downarrow \\ & \downarrow \\ \end{array} \longrightarrow \begin{array}{c} C = \overset{\cdot}{C} \\ & \downarrow \\ \end{array}$$

Use KOC(CH₃)₃ for primary alkyl halides.

$$\begin{array}{c|c}
H & OH \\
-C - C \\
\hline
 & \\
 & \\
\end{array}$$

$$\begin{array}{c}
H_2SO_4 \\
> 150 \, {}^{\circ}C
\end{array}$$

$$\begin{array}{c}
C = C
\end{array}$$

Mixtures of stereoisomers (E & Z) will result when two are possible. E generally is favored.

Mixtures of regioisomers will result when possible, but the more highly substituted alkene is favored to a synthetically useful extent.

Product alkene must be stable to strong acid.

When rearrangement is possible, mixtures of products are common, which limits the synthetic utility of the reaction.