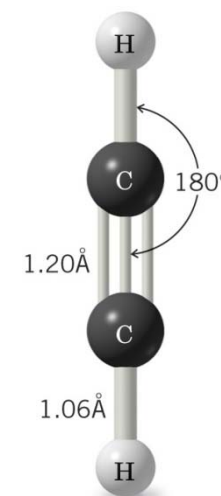
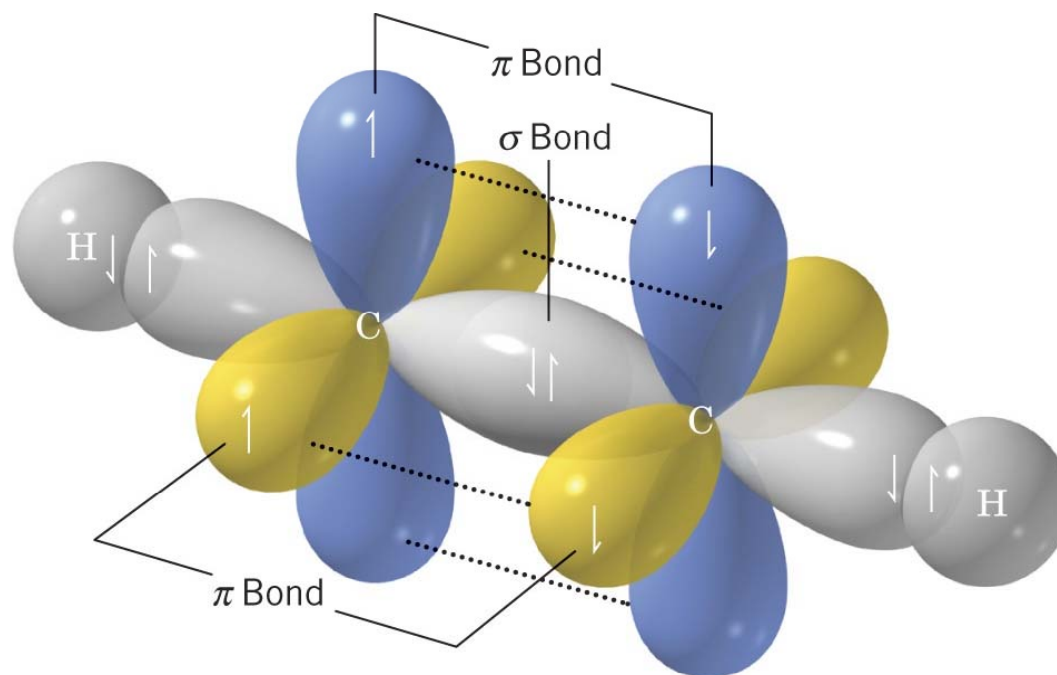


Alkynes

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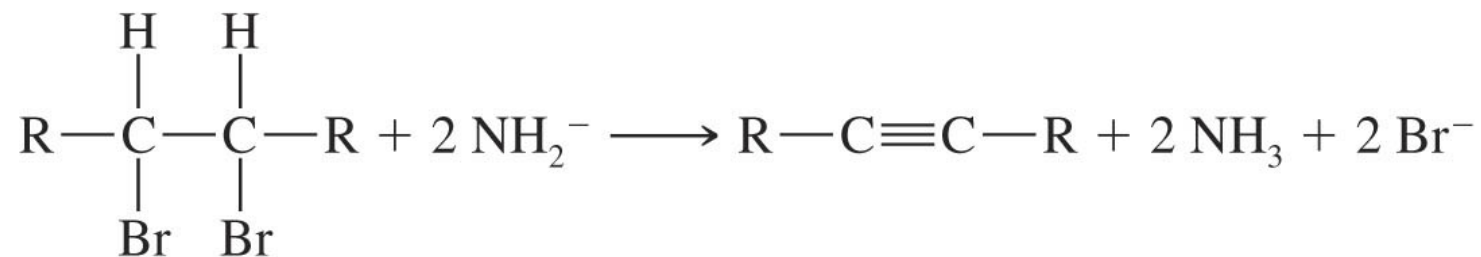
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Ethyne

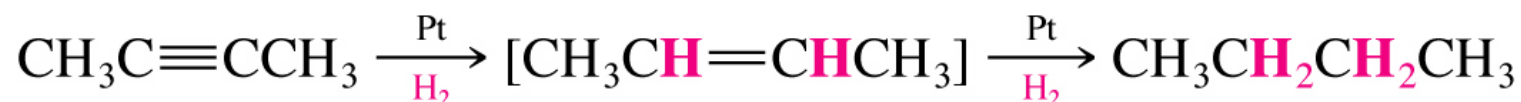


The triple bond consists of one σ and two π bond

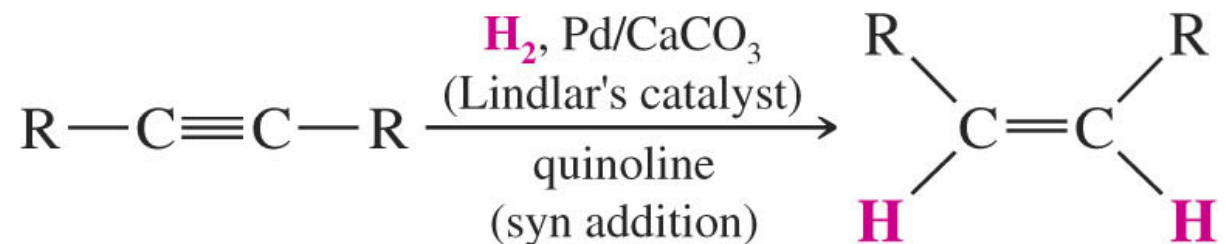
Synthesis of Alkynes by Elimination Reactions



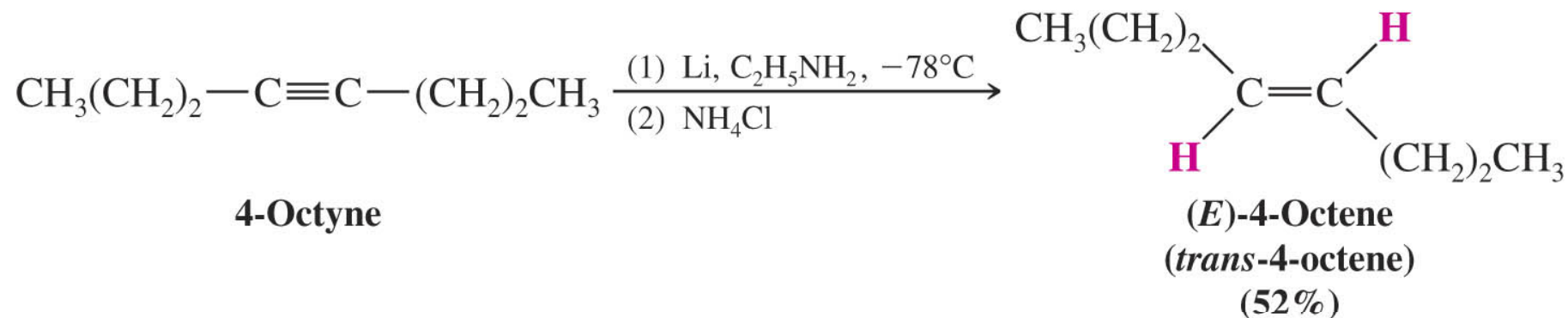
Hydrogenation of Alkynes



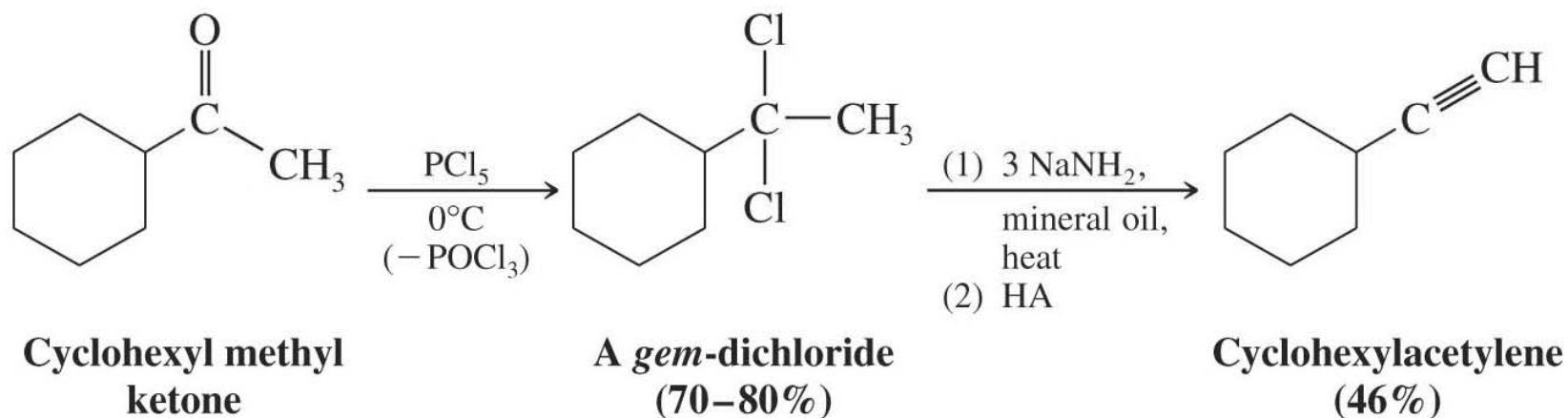
Lindlar's catalyst also produces *cis*-alkenes from alkynes



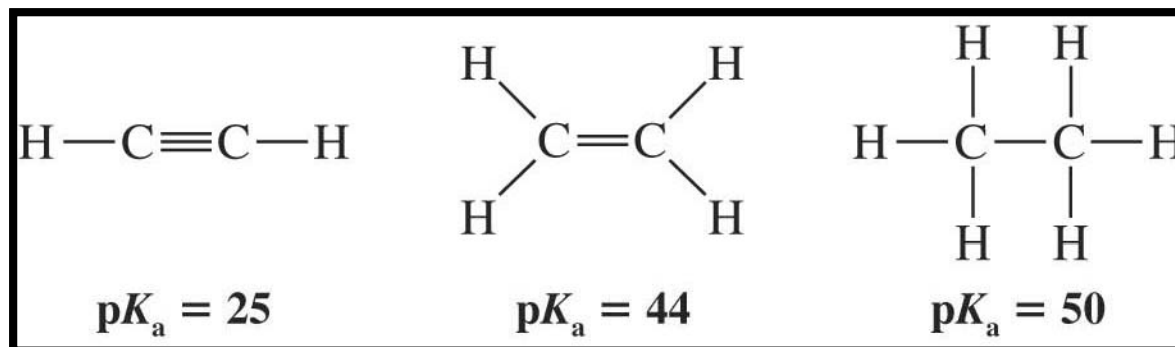
Anti Addition of Hydrogen: Synthesis of *trans*-Alkenes



Geminal dihalides can also undergo consecutive dehydrohalogenation reactions to yield the alkyne

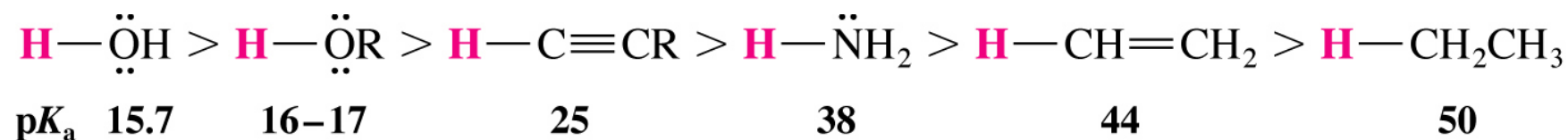


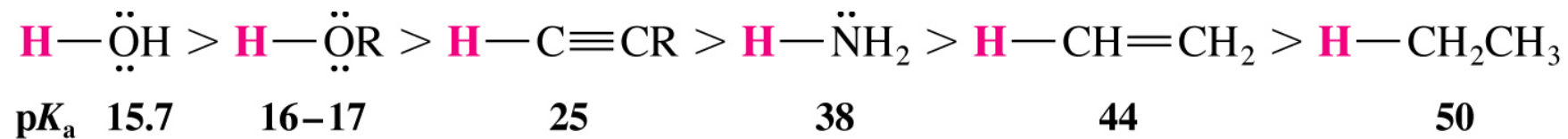
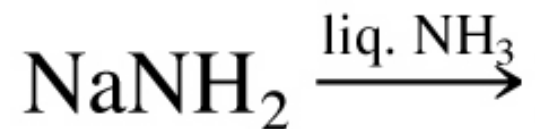
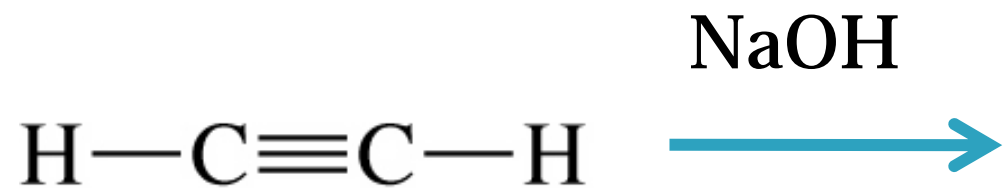
The Acidity of Terminal Alkynes



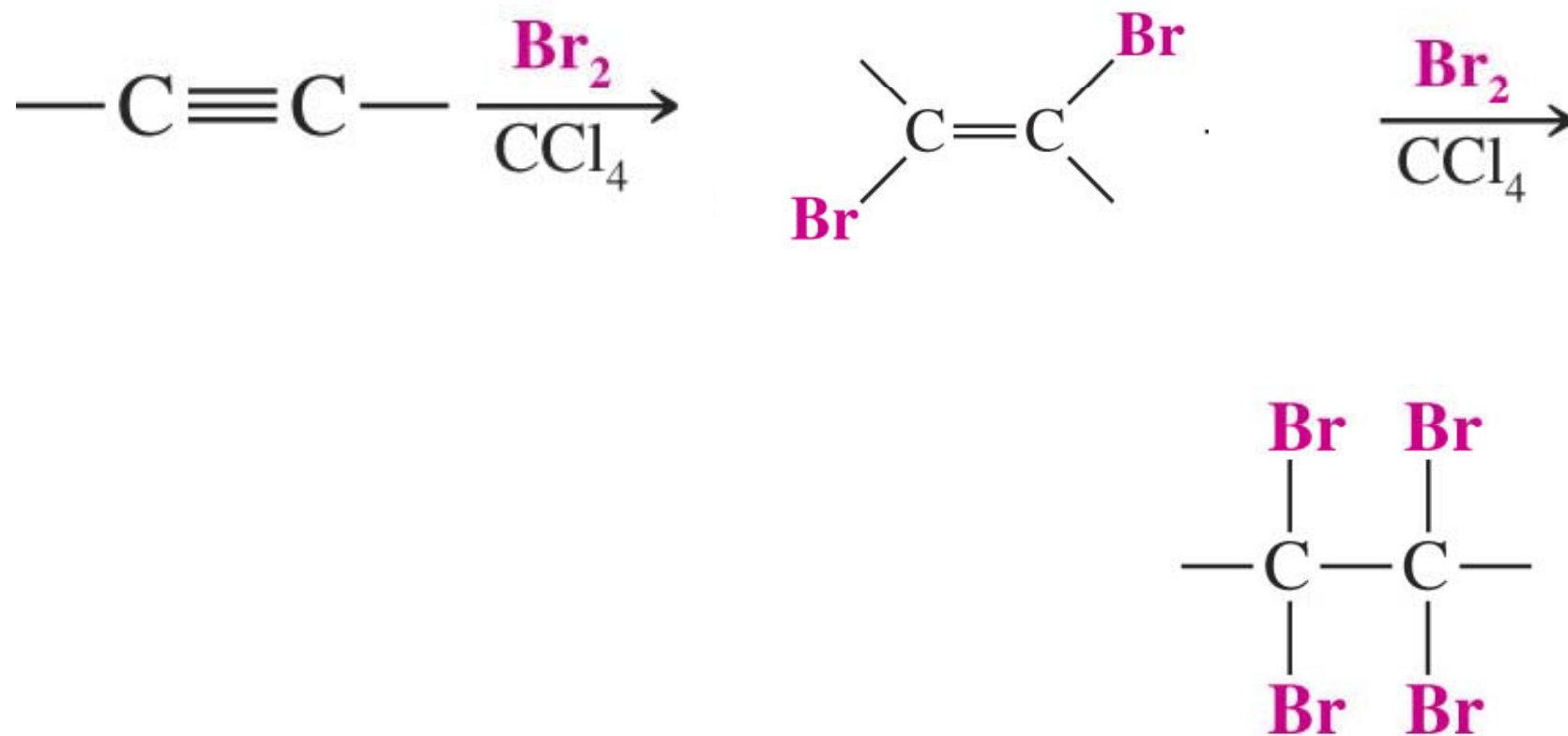
Recall that acetylenic hydrogens have a pK_a of about 25 and are much more acidic than most other C-H bonds

The relative acidity of acetylenic hydrogens in solution is

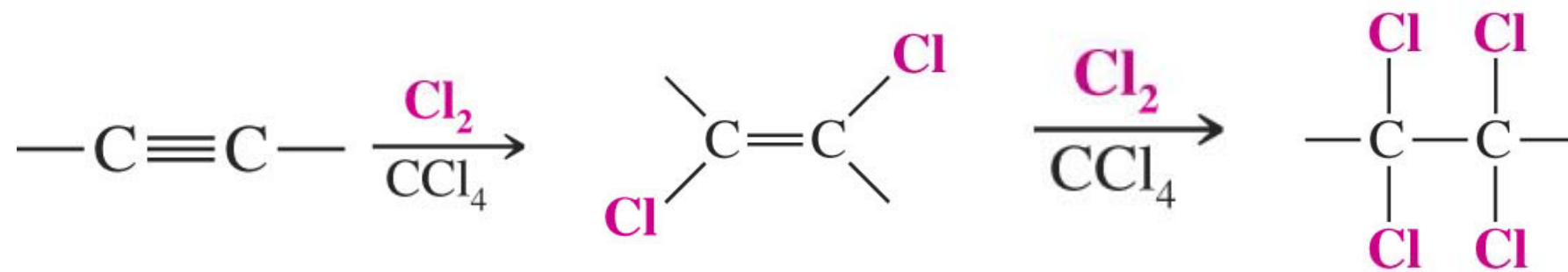




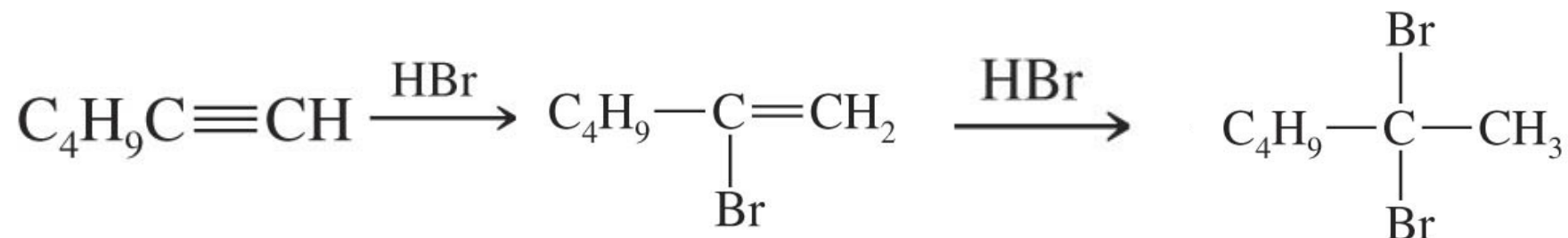
Addition of Bromine and Chlorine to Alkynes



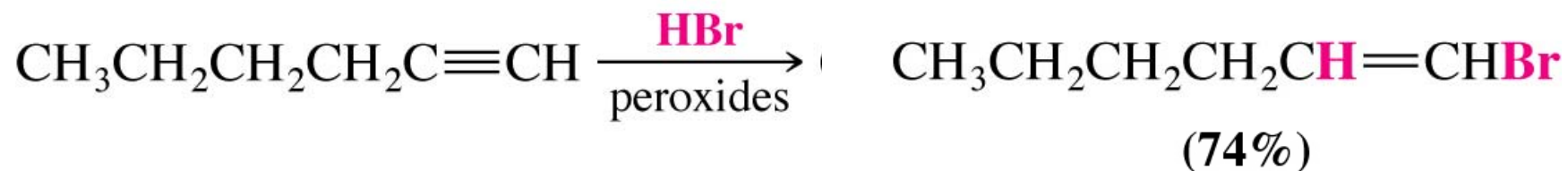
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Addition of Hydrogen Halides to Alkynes



Markovnikov



Anti-Markovnikov

Oxidative Cleavage of Alkynes

