

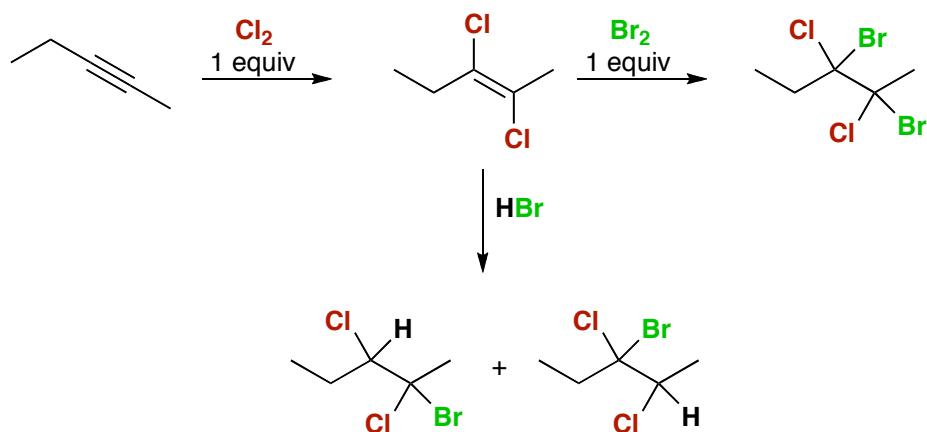
# Chem 34I • Organic Chemistry I

Lecture Summary 23 • October 17, 2007

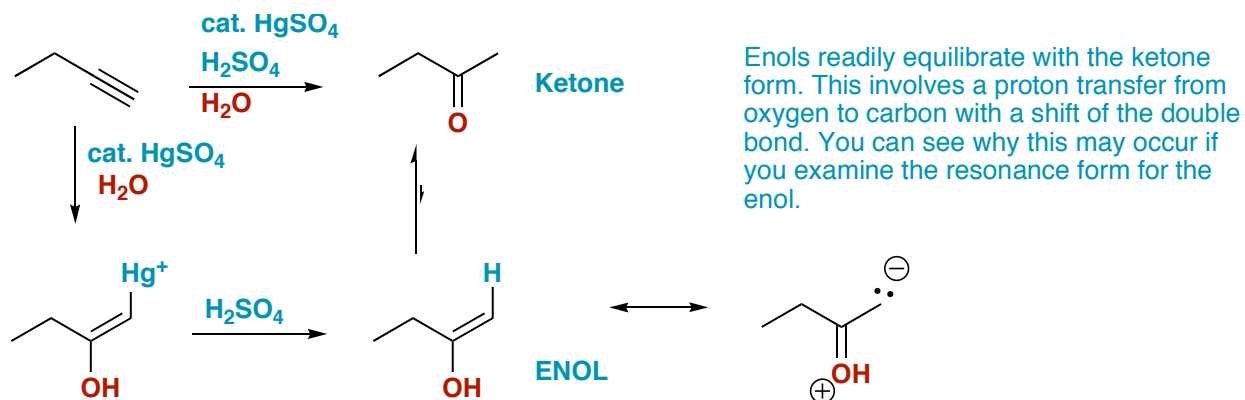
## Chapter 8 - Alkynes: An Introduction to Organic Synthesis

### Electrophilic Addition to Alkynes

Electrophilic addition can be accomplished sequentially with different electrophiles. Note that if the starting alkyne is unsymmetric but disubstituted with carbons, a mixture of regioisomeric products may be obtained.

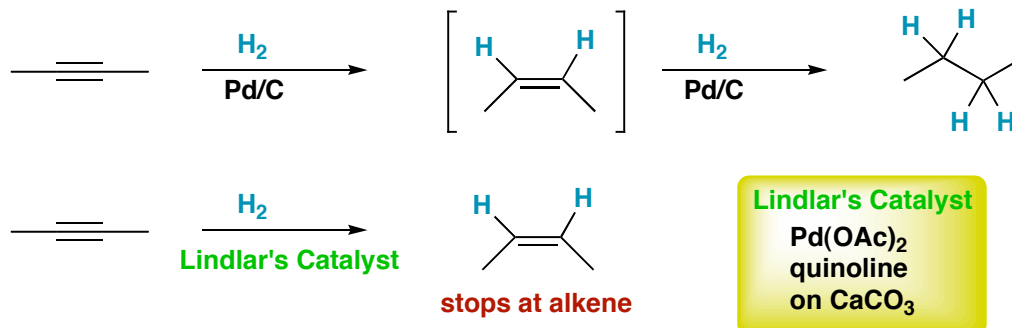


The hydration of alkynes occurs in a slightly different fashion than with alkenes. First, only a catalytic amount of mercury salt is required as the intermediate vinyl mercury species readily protonates in the presence of acid. Secondly, the product of the hydration, an enol, readily isomerizes (tautomerizes) to the more stable ketone form.



## Hydrogenation of Alkynes

Alkynes can be hydrogenated just like alkenes all the way to the alkane with Pd/C catalysis. In order to stop the reaction after the first addition of hydrogen, you need a 'poisoned', or less reactive catalyst. Lindlar's catalysts foots the bill here. This is a Pd catalyst whose reactivity has been tempered by the addition of quinoline.



## Quiz of the day

Q: What is the product of the following reaction?

1) 1 eq. HCl  
2) 1 eq. Br<sub>2</sub>

1:

2:

3:

4: