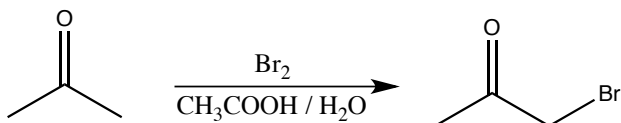


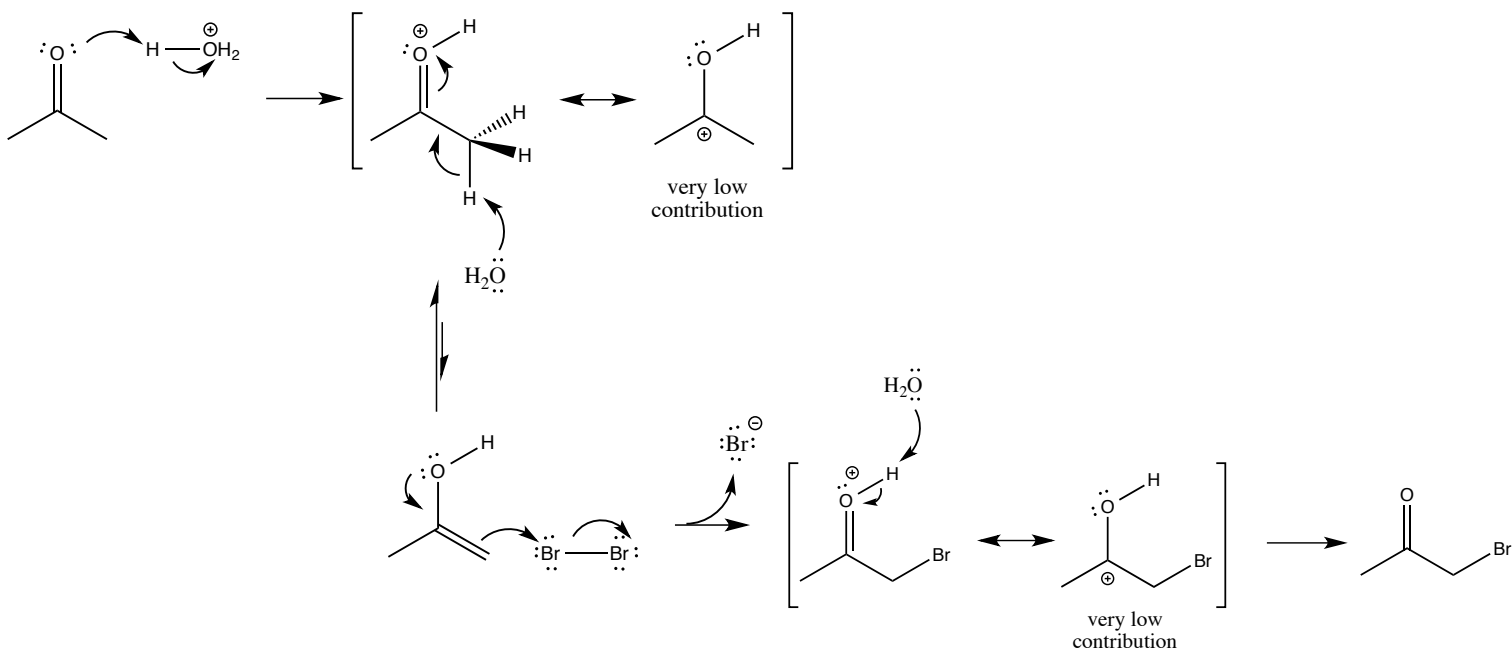
**Chem 345 – Organic Reactions Chapter 22**  
Prepared by José Laboy, MS  
<http://www.chem.wisc.edu/areas/clc> (Resource page)

**$\alpha$ -Halogenation of Carbonyl Compounds**

Reaction:



Mechanism:



Under acidic conditions only mono-halogenation is allowed. This is good for synthetic purposes. After the first substitution the  $\alpha$ -carbon to the carbonyl becomes acidic. Any further reaction with the halogen is very slow. You can also mono-chlorinate with  $\text{Cl}_2 / \text{H}_2\text{O}$ . Like in the case above the product of the reaction is an acid, which makes it *autocatalyzed*.