

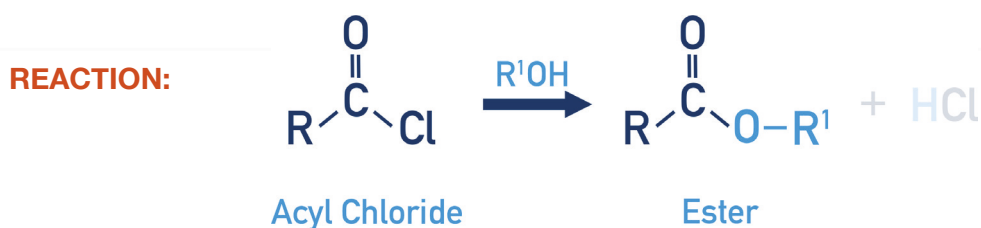


### Reaction

**REACTANTS:** Acyl Chloride and Alcohol

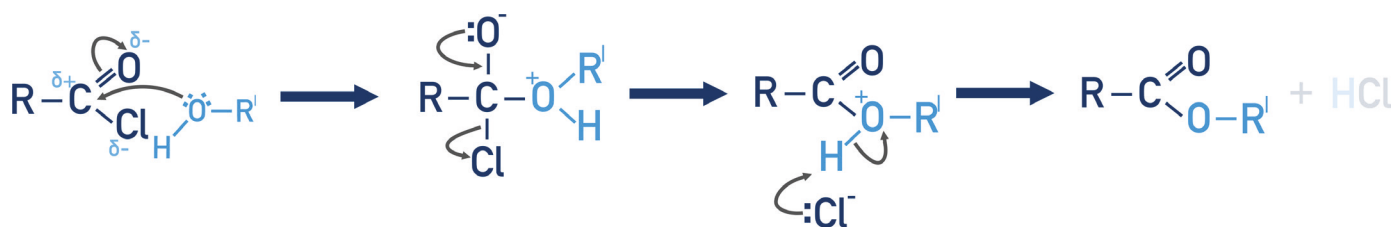
**PRODUCT:** Ester and HCl

**REACTION TYPE:** Nucleophilic Addition-Elimination, *Esterification*



### Mechanism

The alcohol acts as a **nucleophile** due to the lone pair of electrons on the oxygen atom attacking the carbon (with a partial positive charge) in the acyl chloride group. A new carbon-oxygen bond forms between the acyl group and the alcohol. The carbon-oxygen double bond breaks to a single bond, giving the oxygen a negative charge. The carbon-oxygen double bond reforms, the carbon-chlorine bond breaks and a chloride ion is removed. Chloride ion removes  $\text{H}^+$  ion from  $-\text{RCOOH}^+\text{R}'$  group, forming  $\text{RCOOR}'$ . **Addition-elimination reaction.**



### Notes:

- As an ester is formed, this is an example of an esterification reaction