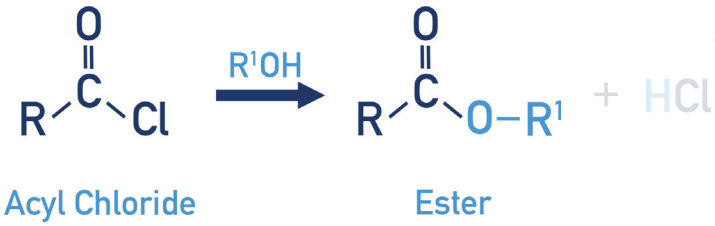
Organic Chemistry Revision Sheets
Acyl Chlorides | Nucleophilic Addition-Elimination (with alcohol)

Reaction

REACTANTS: Acyl Chloride and Alcohol
PRODUCT: Ester and HCl
REACTION TYPE: Nucleophilic Addition-Elimination, *Esterification*

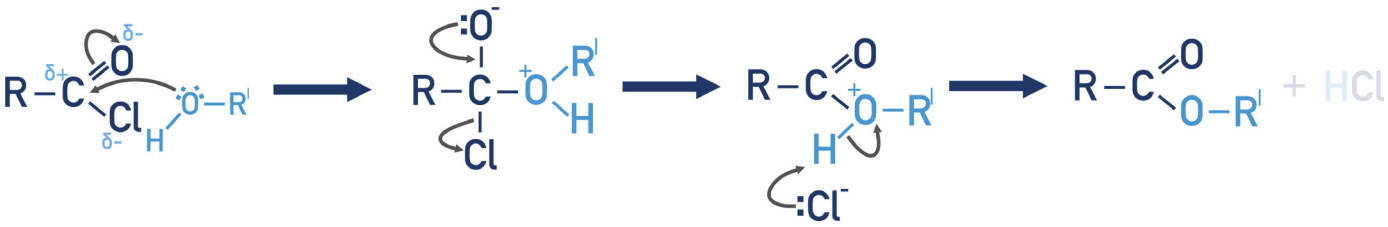
REACTION:



Acyl Chloride Ester

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 H^+ ion from $-RCOOH^+R^1$ group, forming $RCOOR^1$. ***Addition-elimination reaction.***



Notes:

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