

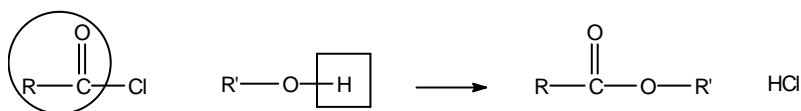
# ACYLATION REACTIONS

Name ..... Form .....

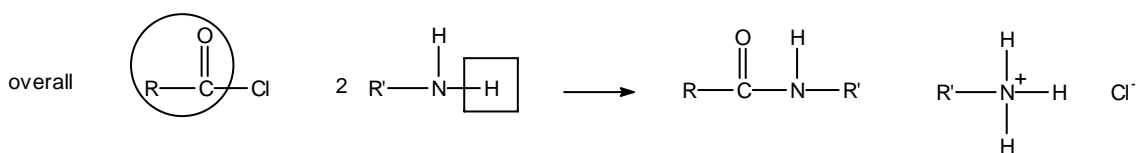
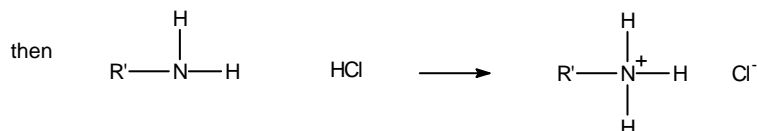
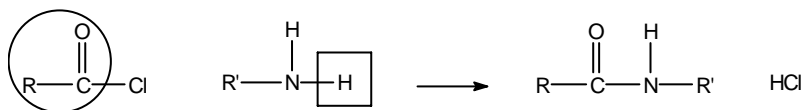


- The acyl group is  $\begin{array}{c} \text{O} \\ || \\ \text{R}-\text{C} \end{array}$
- Acylation is the insertion of an acyl group into a compound.
- The acyl group often comes from acyl chlorides or acid anhydrides.
- The acyl group replaces the H on the O of an alcohol/water or the N of an amine/ammonia.
- The other product is an acid. With amines/ammonia, this acid reacts with a second molecule of the amine/ammonia to form an ammonium salt of the acid.

e.g. acylation of an alcohol (using an acyl chloride)



e.g. acylation of an amine (using an acyl chloride)



## **THINK**

- Replace an H on the O/N to give the main product.
- If using an amine/ammonia, the acid by-product donates  $\text{H}^+$  to another molecule of amine/ammonia

- water + propanoyl chloride
- ammonia + ethanoyl chloride
- propan-2-ol + ethanoyl chloride
- ethylamine + propanoic anhydride
- propylamine + butanoyl chloride
- propan-1-ol + ethanoic anhydride
- water + butanoic anhydride
- ammonia + propanoic anhydride