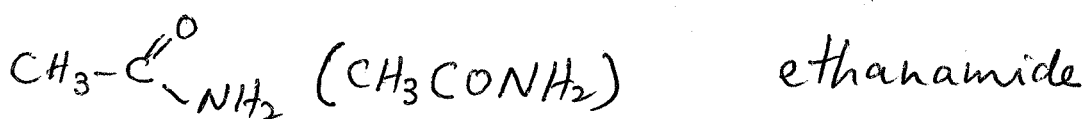
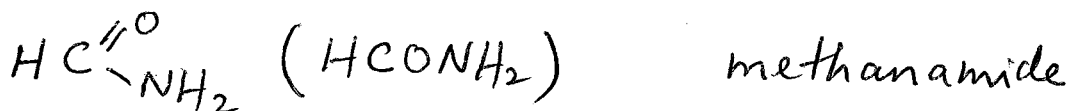


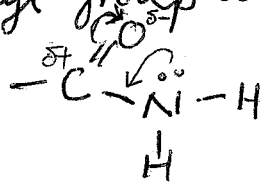
Amides (A2)

- derived from carboxylic acids.
- carboxylic acid contains the $\text{C}=\overset{\text{O}}{\text{O}}\text{H}$ group, amides contain the $-\text{C}=\overset{\text{O}}{\text{N}}\text{H}_2$ group.

- some simple amides:



- the name is derived from the acid by replacing the "oic acid" ending by "amide".
- amides have high boiling points because they can form hydrogen bonds. The hydrogen atoms in the $-\text{NH}_2$ group are sufficiently positive to form a hydrogen bond with a lone pair on the oxygen atom of another molecule.
- amides are soluble in water because they have the ability to form hydrogen bond with water molecules.
- Solutions of amides are neutral. This is because the presence of the carbonyl group which withdraws electrons from N.



Hydrolysis of Amides

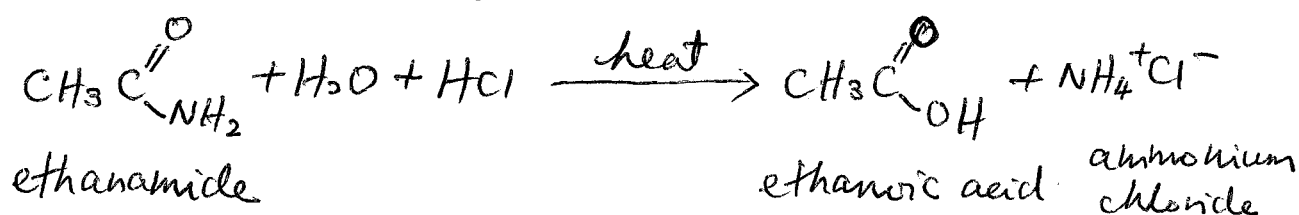
1. Acid hydrolysis
2. Alkaline hydrolysis

Acid hydrolysis of Amides

Reagent : Dilute HCl

Condition : heat

Product : carboxylic acid and ammonium salt.

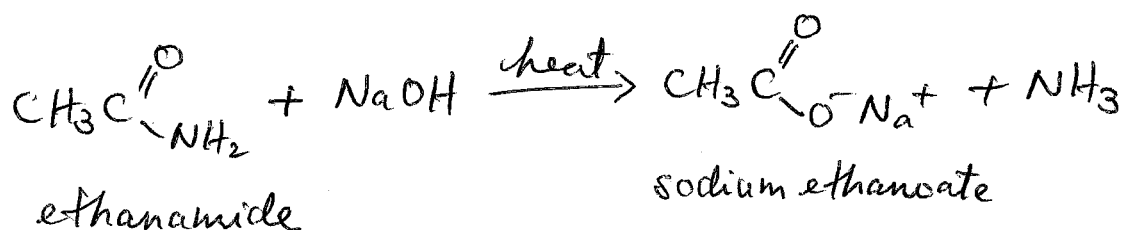


Alkaline hydrolysis of Amides

Reagent : NaOH(aq)

Condition : heat

Product : sodium salt of carboxylic acid and NH_3



• carboxylic acid can be released from its salt by adding acid subsequently.

