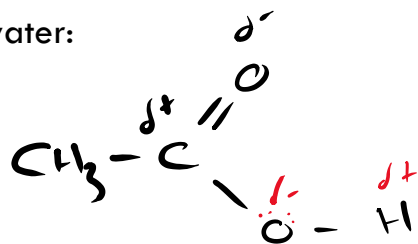


CARBOXYLIC ACIDS AND DERIVATIVES

Functional group:

Solubility in water:

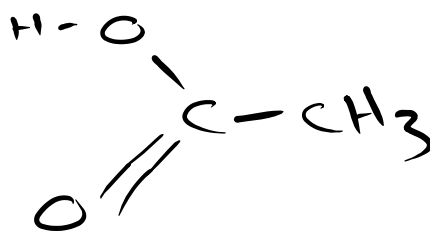
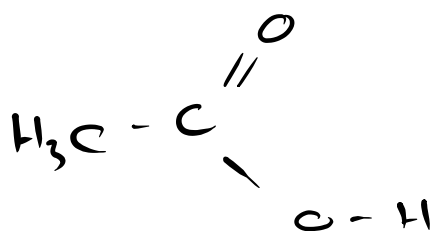


General formula:

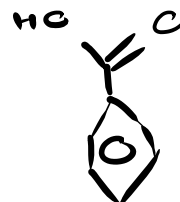
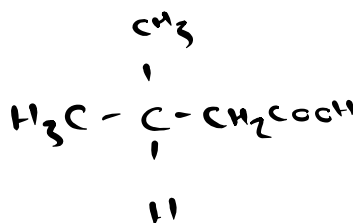
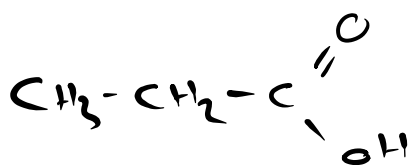
Boiling point:
absence of water.

because they can form

in the



Examples and naming:



Forming a carboxylic acid:

Oxidation:

Conditions:

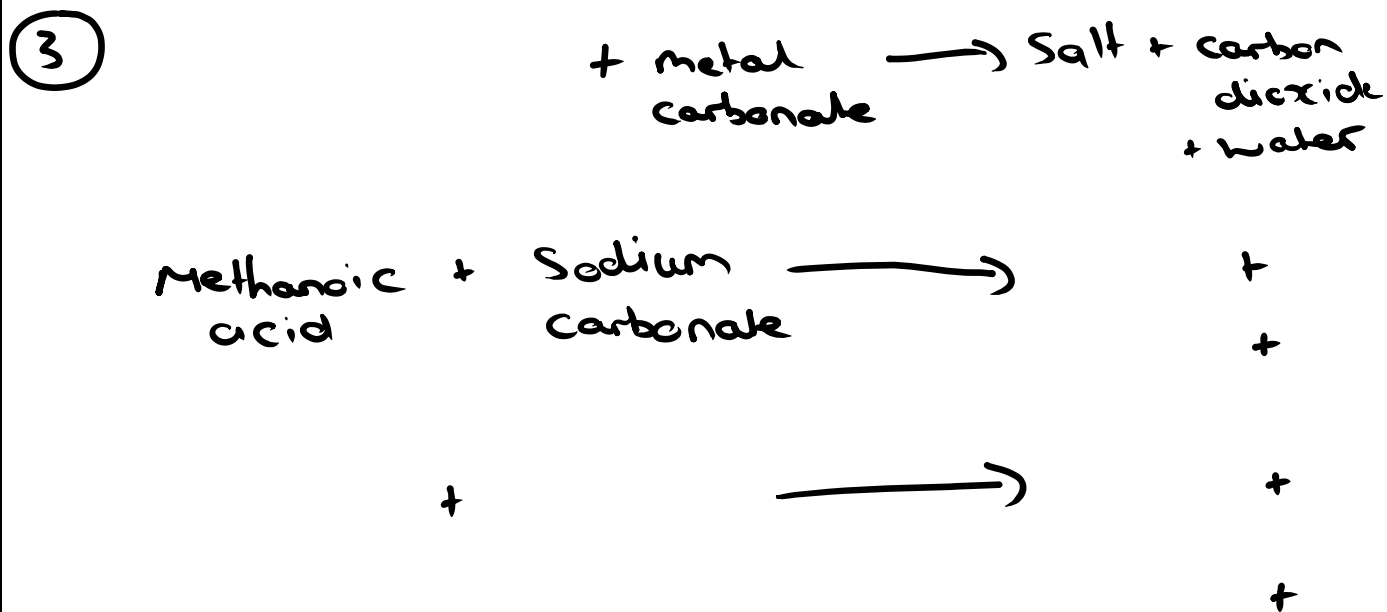
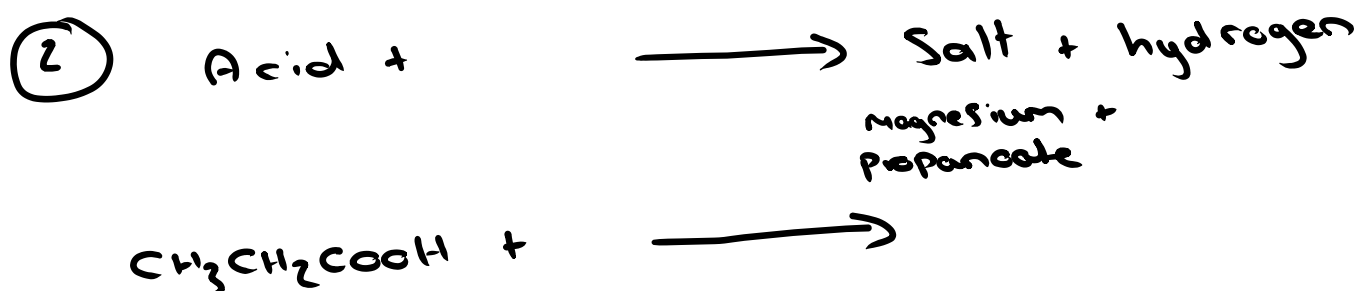
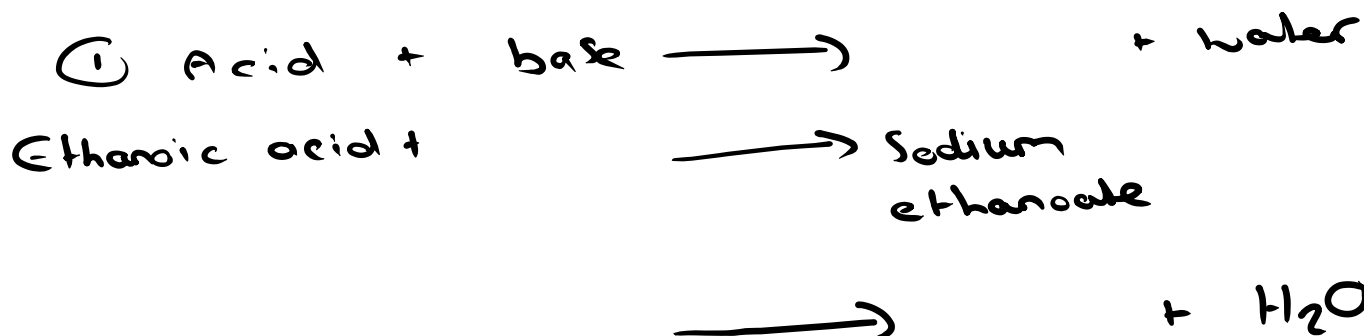
Hydrolysis of .

Acidic Hydrolysis:

Alkaline hydrolysis

Reactions of carboxylic acids:

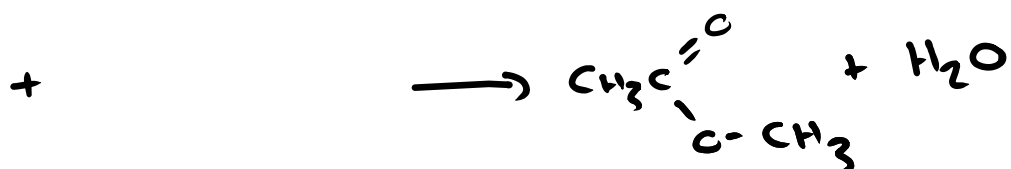
General acid-base reactions:



Esterification:

Alcohol + carboxylic acid \rightarrow Ester + water

+ ethanoic acid \rightarrow Methyl +
ethanoate



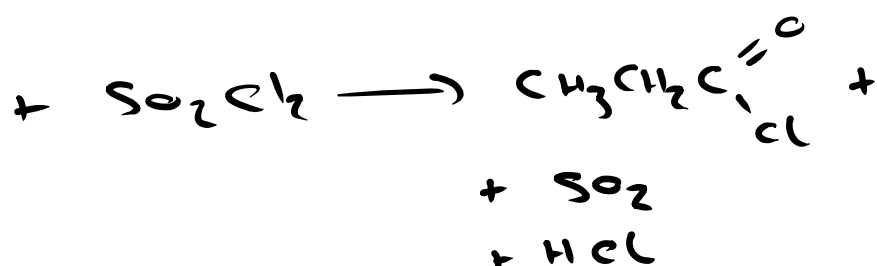
Conditions:

Forming an acyl chloride:

Carboxylic acids can be used to form acyl chlorides:

Carboxylic acid + sulphur dichloride
oxide \rightarrow Acyl chloride +
sulphur dioxide +
 HCl

Propanoic acid + sulphur dichloride
oxide \rightarrow propanoyl
chloride +
sulphur dioxide +
 HCl



Conditions:

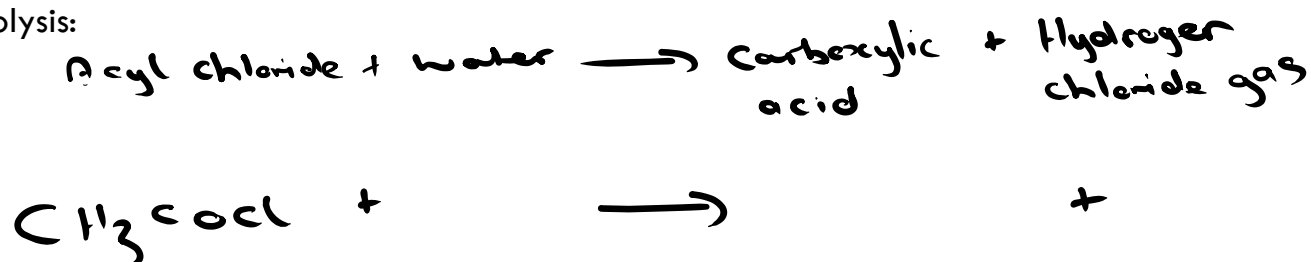
Reaction of acyl chlorides:

Acyl chlorides are _____ with a _____ odour that _____ in moist air.

General formula: _____ Naming: Ends in _____.

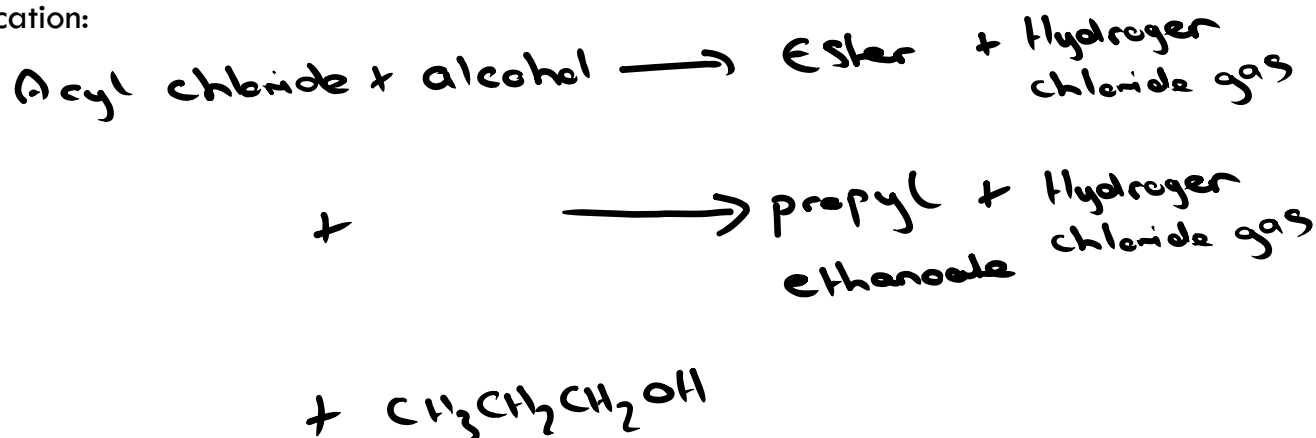
Acyl chlorides are _____ reactive and reactions are difficult and dangerous to control, the reactions are general very _____ and produce _____ as a by-product.

Hydrolysis:



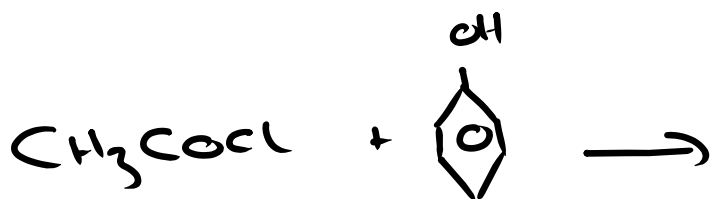
Conditions:

Esterification:



Conditions:

Acyl chloride + phenol \rightarrow Ester + water
(aromatic)



Conditions:

Forming amides:

Forming a primary amide:

Acyl chloride + Ammonia \rightarrow Primary amide + HCl

Reagent:

Conditions:

Forming a secondary amide:

Acyl chloride + Amine \rightarrow Secondary amide + HCl

Reagent:

Conditions:

