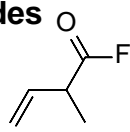
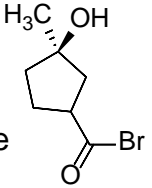


Nomenclature – Acid Chlorides

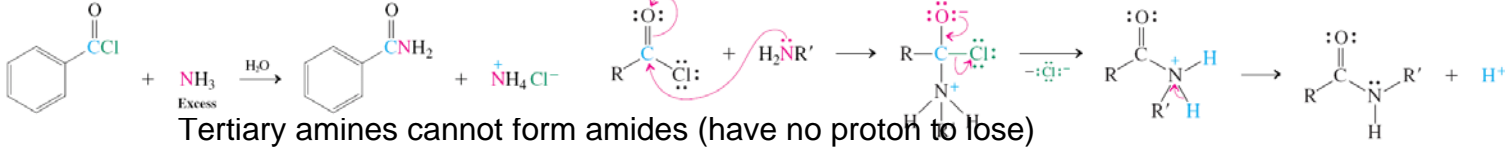
2-methyl-3-butenoyl fluoride



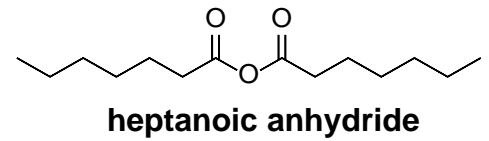
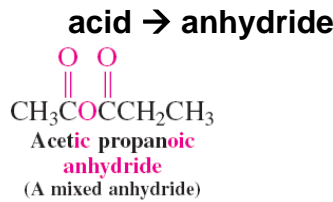
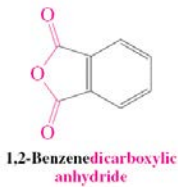
(3R)-3-hydroxy-3-methylcyclopentane carbonyl bromide



Amines + alkanoyl chlorides → amides

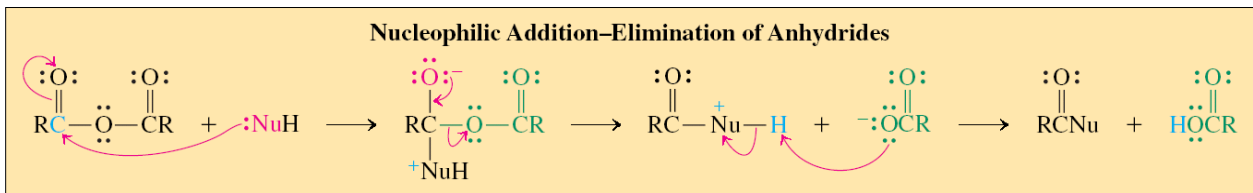


Anhydrides

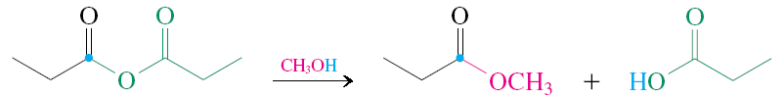
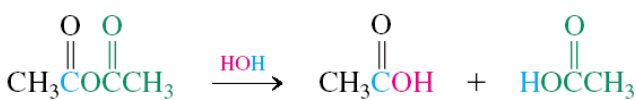


Same reactions as acid halides!

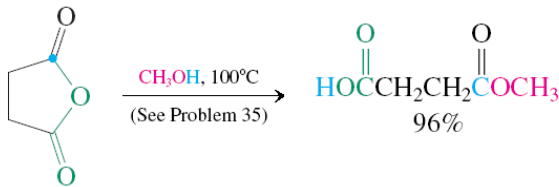
Leaving group = carboxylate



Predict products

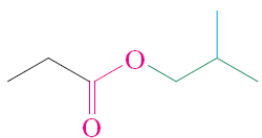


Cyclic anhydrides

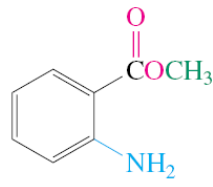


Alkanoyl halides very reactive and anhydrides are often preferred for the preparation of many carboxylic acid derivatives.

Esters

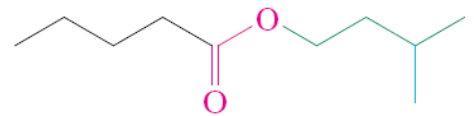


2-Methylpropyl propanoate



Methyl 2-aminobenzoate

→ oate

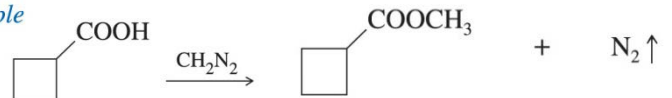


3-Methylbutyl pentanoate

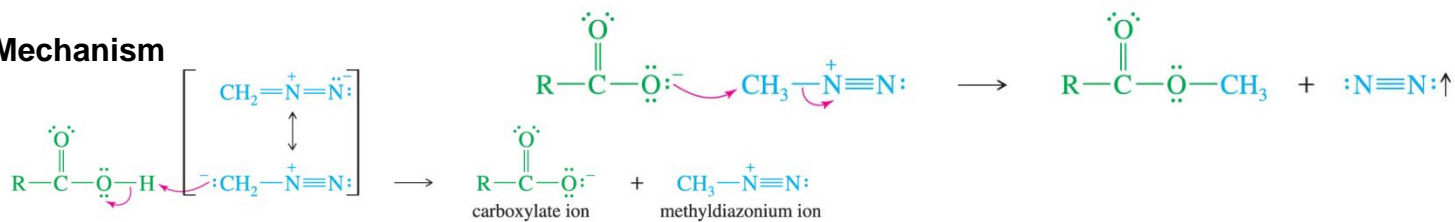
Ester Synthesis



Example



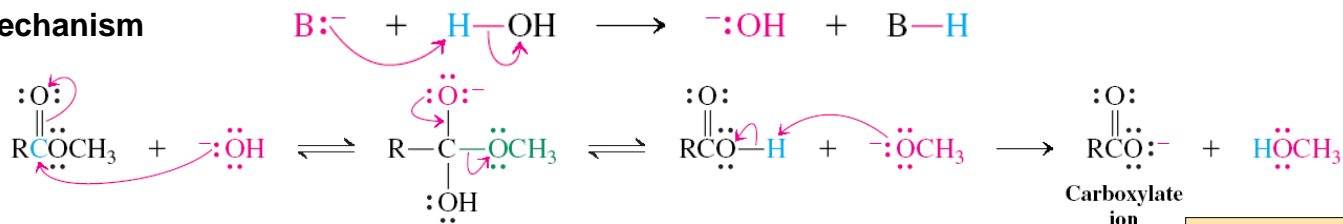
Mechanism



Esters + H₂O → carboxylic acids

Reverse of esterification

Mechanism

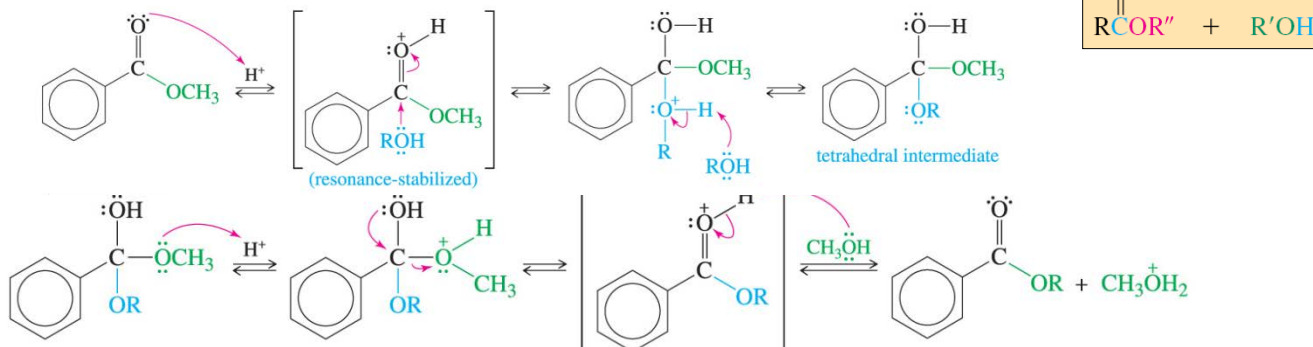


Transesterification

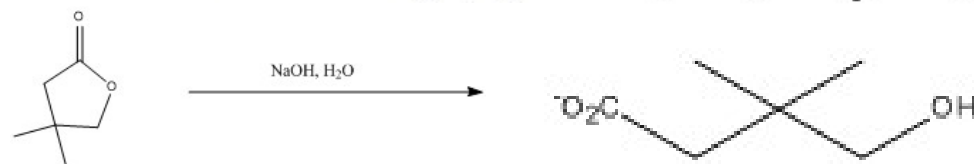
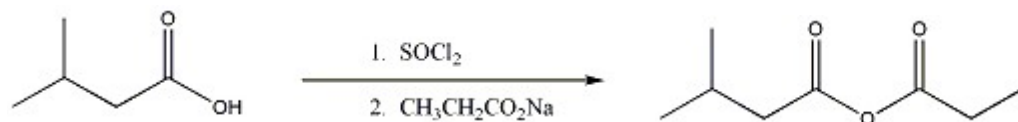
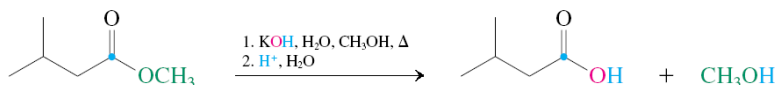
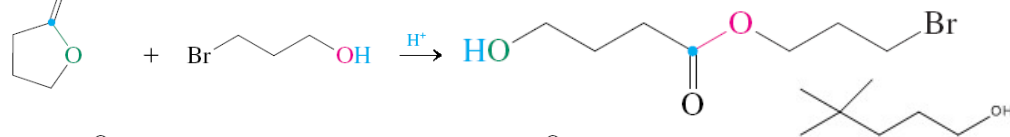
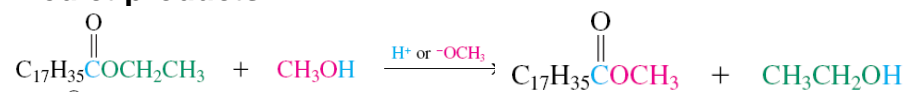
Conversion of one ester into another

To shift the equilibrium, excess of the second alcohol is used.

Mechanism



Predict products.



1. Na₂Cr₂O₇

2. SOCl₂

3. CH₃MgBr (2 eq.)

4. H₃O⁺

