

32 Esters from acyl chlorides – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
ester	酯	_____
alcohol	醇	_____
acyl chloride	酰氯	_____

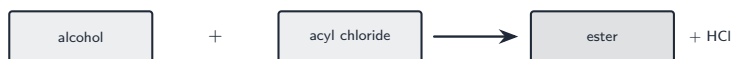
Recall

At A Level you meet one more way to make an **ester** 酯: react an **alcohol** 醇 with an **acyl chloride** 酰氯.

New ideas

Read these first, then do the Practice.

■ 1 The reaction



The alcohol and acyl chloride react to give the ester, plus fumes of HCl.

■ 2 Why use an acyl chloride

carboxylic acid
slow, reversible
(an equilibrium)

acyl chloride
fast and complete

Using an acyl chloride works *faster and more completely* than using a carboxylic acid (which is slow and reversible).

Watch out: an acyl chloride reacts with an alcohol *fast and irreversibly* (giving HCl fumes), unlike the slow, reversible esterification with a carboxylic acid.

Practice

Try these in order.

32.1 What two things react to give the ester? [1]

32.2 What gas (as fumes) is also produced? [1]

32.3 Which works faster — an acyl chloride or a carboxylic acid? [1]

32.4 What functional group is an *ester* made from in this reaction? [1]

32.5 Ethanol and ethanoyl chloride give which ester? [1]

32.6 Challenge. Esterification with a carboxylic acid is slow and reversible, but with an acyl chloride it is fast and goes to completion. Suggest why the acyl chloride is so much more reactive. [2]