

11 Alcohols, acids and polymers – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English

Write it 3 times (English)

functional group

alcohols

carboxylic acids

ethanol

fermentation

yeast

glucose

hydration

solvent

Ethanoic acid

metals

carbonates

bases

oxidation

ester

English	Write it 3 times (English)		
polymer			
monomers			
addition polymerisation			
poly(ethene)			
repeat unit			
plastics			
landfill			

Recall

A **functional group** is the part of a molecule that gives it its reactions. Two families share the spotlight here:

- **alcohols** have the -OH group;
- **carboxylic acids** have the -COOH group.

New ideas

Read these first, then do the Practice.

■ 1 Alcohols

The alcohol to know is **ethanol**. There are two ways to make it:

Method	What happens		Note
fermentation	yeast turns glucose into ethanol + CO_2		renewable sugar; slow
hydration of ethene	steam adds to ethene (acid catalyst)		fast and pure; uses petroleum

Watch out: fermentation (yeast on glucose) is renewable but slow; **hydration of ethene** (steam + catalyst) is fast and pure but uses petroleum – know one advantage of each. In **addition polymerisation** the monomers must have a C=C, and there is **no** other product.

Practice

Try these in order.

11.6 Name the functional group in (a) an alcohol and (b) a carboxylic acid. [2]

11.7 Name the two methods used to make ethanol. [2]

11.8 Give two uses of ethanol. [2]

11.9 Ethanoic acid reacts with magnesium carbonate. Name the three products. [2]

11.10 Many ethene monomers join together. Name the product and the process. [2]

11.11 Challenge. Ethene (C₂H₄) undergoes addition polymerisation. Name the polymer formed, and explain why ethane (C₂H₆) cannot be used to make a polymer this way. [3]