Edexcel IGCSE Chemistry

Topic 4: Organic chemistry

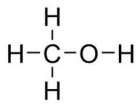
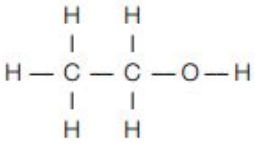
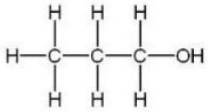
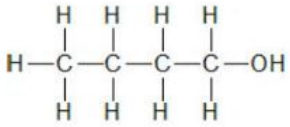
Alcohols

Notes

4.29 (chemistry only) know that alcohols contain the functional group –OH

4.30 (chemistry only) understand how to draw structural and displayed formulae for methanol, ethanol, propanol (propan-1-ol only) and butanol (butan-1-ol only), and name each compound; the names propanol and butanol are acceptable

- Alcohols contain the functional group –OH
- The first 4 members of the series are methanol, ethanol, propanol and butanol.

alcohol	structural formula	displayed formula
methanol	CH_3OH	
ethanol	CH_3CH_2OH	
propanol	$CH_3CH_2CH_2OH$	
butanol	$CH_3CH_2CH_2CH_2OH$	

4.31 (chemistry only) know that ethanol can be oxidised by:

- Burning in air or oxygen (complete combustion)
- Reaction with oxygen in the air to form ethanoic acid (microbial oxidation)
- Heating with potassium dichromate(VI) in dilute sulfuric acid to form ethanoic acid

4.32 (chemistry only) know that ethanol can be manufactured by:

- Reacting ethene with steam in the presence of a phosphoric acid catalyst at a temperature of about 300˚C and a pressure of about 60-70 atm
- The fermentation of glucose, in the absence of air, at an optimum temperature of about 30˚C and using the enzymes in yeast

4.33 (chemistry only) understand the reasons for fermentation, in the absence of air, and at an optimum temperature

- Glucose → carbon dioxide + ethanol
- Optimum temperature of 25˚C to 50˚C
    - If too low = yeast that is used would be inactive
    - If too high = enzymes in yeast would be denatured / would no longer function
- Absence of oxygen (air must be kept out)
    - If air got in, it would cause the ethanol to oxidise to ethanoic acid