

A level Chemistry A

H432/02 Synthesis and analytical techniques

Question Set 11

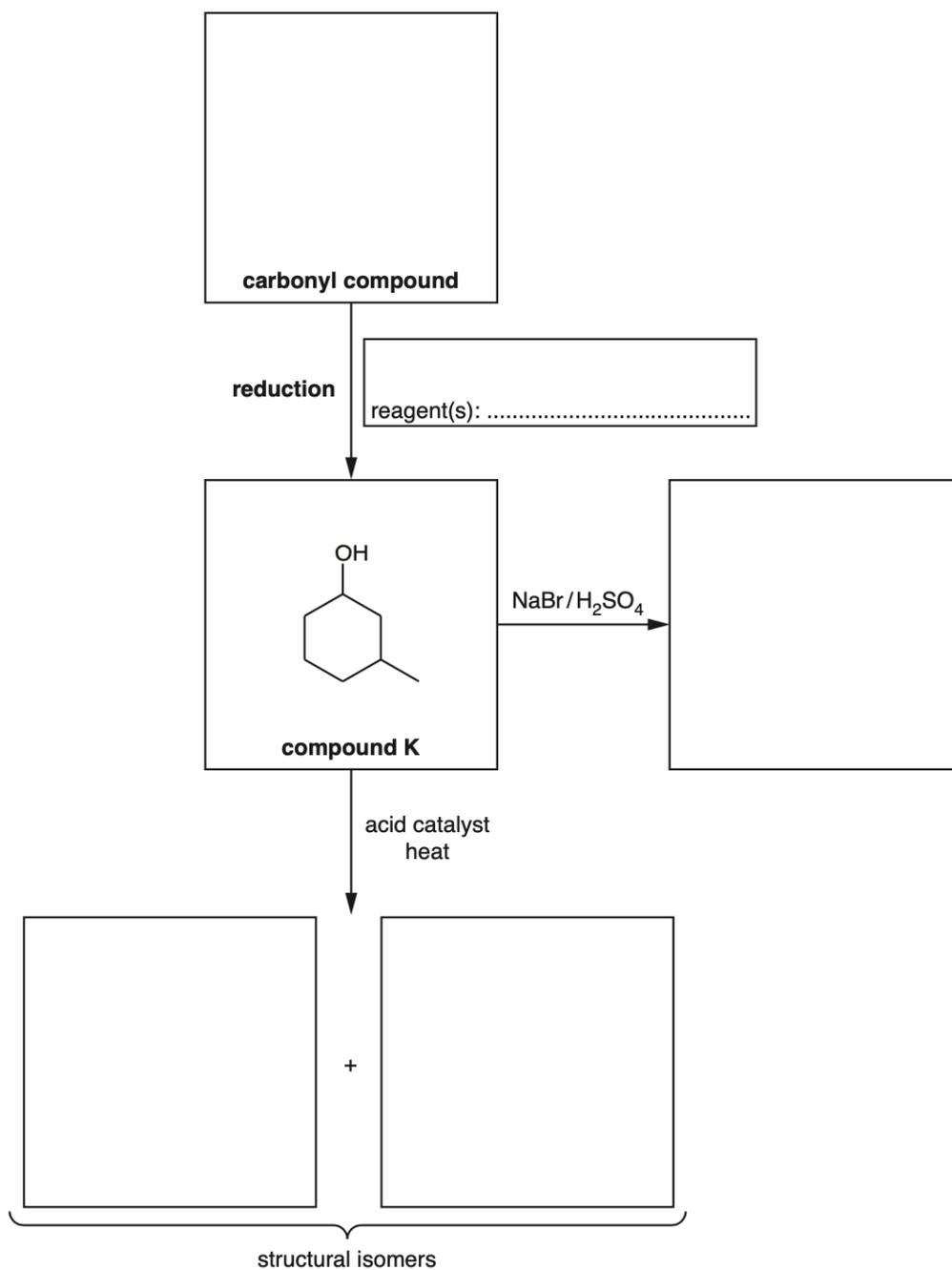
1. This question is about alcohols.
- (a) Construct an equation for the complete combustion of an unsaturated alcohol with 5 carbon atoms. [1]
- (b) Many alcohols, including ethanol, are soluble in water.
- (i) Explain, with the aid of a diagram, why ethanol is soluble in water. [2]
Include relevant dipoles and lone pairs.
- (ii) The solubility of hexan-1-ol and hexane-1,6-diol in water is shown below in **Table 19.1**.

Alcohol	Solubility in water / g dm ⁻³
hexan-1-ol	5.9
hexane-1,6-diol	500

Table 19.1

- Explain the difference in solubility of hexan-1-ol and hexane-1,6-diol. [1]
- (c) Alcohols are important in organic synthesis and can be formed by the reduction of carbonyl compounds.

(i) Complete the flowchart by filling in each box.



(ii) What is the name of compound K?

[5]

[1]

- (d) Butan-1-ol can be oxidised to form two different organic products, depending on the reaction conditions used.

Describe both oxidation reactions of butan-1-ol.

For each reaction include

- the structure of the organic product
- a balanced equation
- the essential reaction conditions.

In your equations you may use [O] to represent the oxidising agent.

[5]

Total Marks for Question Set 11: 15

OCR

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge