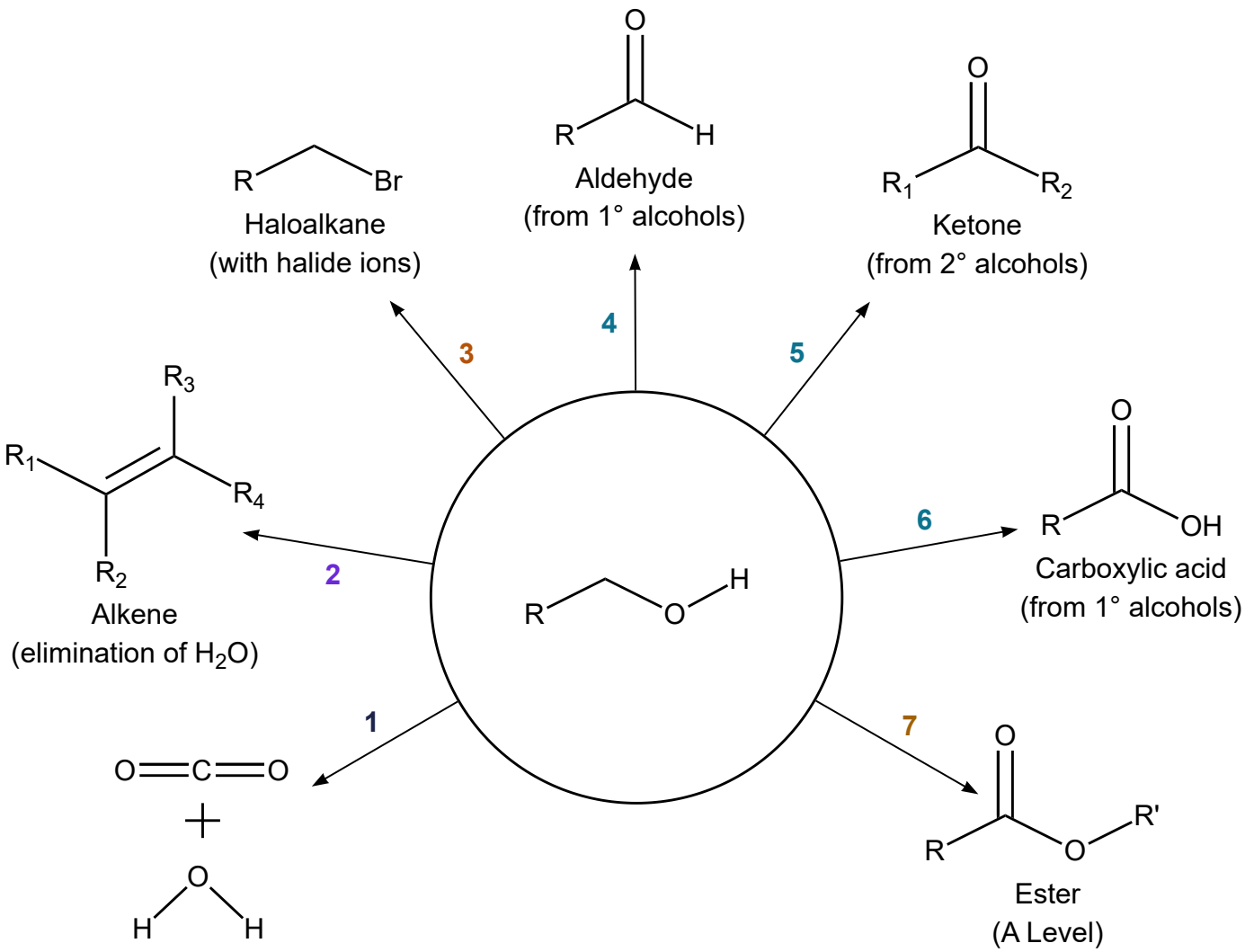
Alcohols Map

OCR A Level Chemistry A · 4.2.1 Alcohols



1 combustion: excess $O_2(g)$, burn

2 elimination (dehydration): H_3PO_4 or H_2SO_4 catalyst, heat

3 substitution: NaBr and H_2SO_4 (halide ions + acid), heat under reflux

4 oxidation: [O]; $Cr_2O_7^{2-}/H^+$ ($K_2Cr_2O_7/H_2SO_4$), warm and distil off the aldehyde as it forms;

5 oxidation: [O]; $Cr_2O_7^{2-}/H^+$ ($K_2Cr_2O_7/H_2SO_4$), heat under reflux; orange → green

6 oxidation: [O]; excess $Cr_2O_7^{2-}/H^+$, heat under reflux; orange → green

7 condensation (esterification): carboxylic acid, acid anhydride or acyl chloride
i carboxylic acid, conc. H_2SO_4 catalyst, heat
ii acid anhydride, warm
iii acyl chloride, room temperature

Tertiary alcohols resist oxidation: the dichromate stays orange.
Tests: aldehyde: Tollens' reagent gives a silver mirror; 2,4-DNP gives an orange precipitate with any carbonyl.

combustion elimination substitution oxidation condensation

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