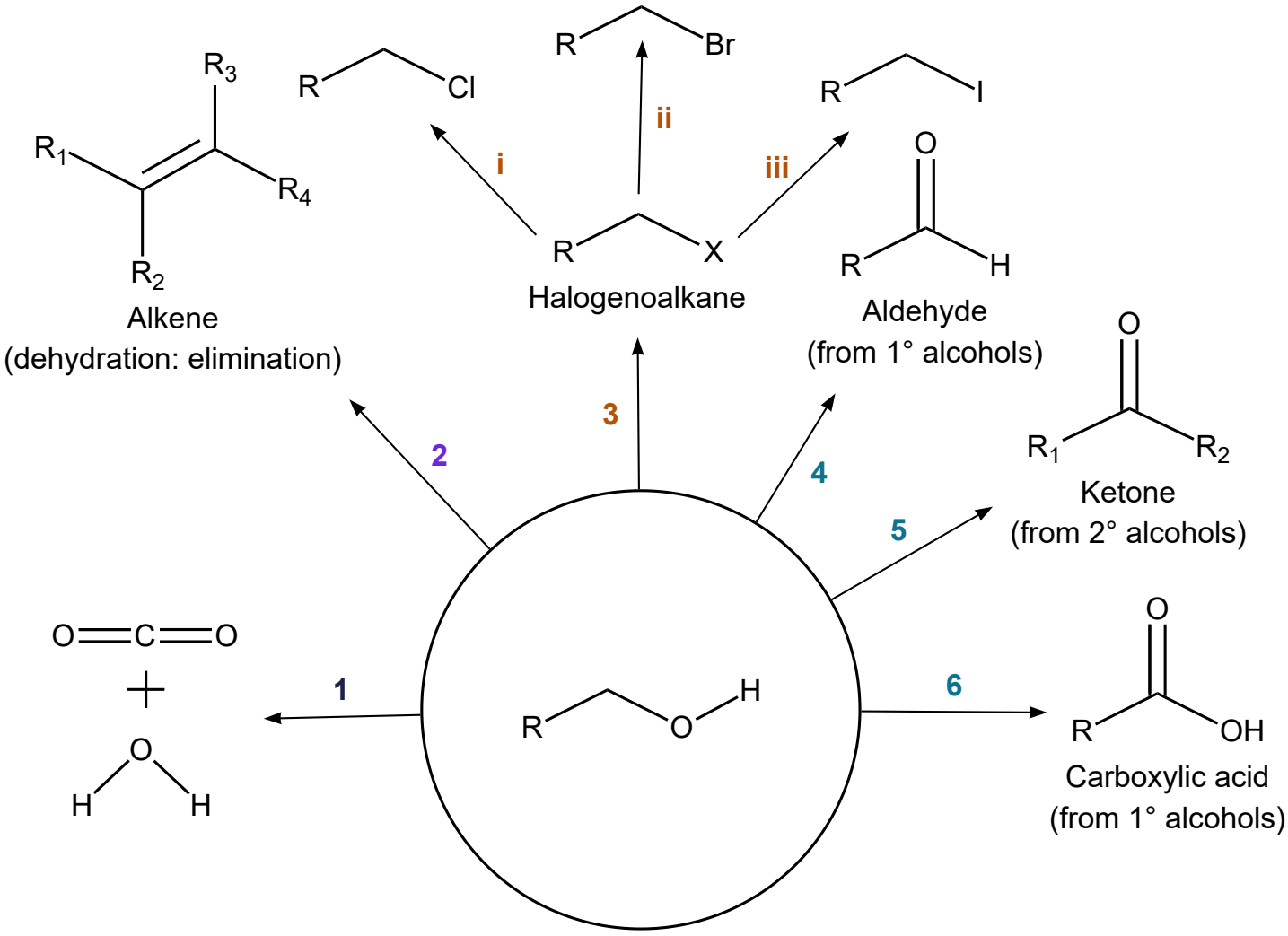
Alcohols Map

Edexcel A Level Chemistry · Topic 6E Alcohols



1 combustion: excess $O_2(g)$, burns with a clean blue flame → $CO_2 + H_2O$

2 dehydration (elimination): conc. H_3PO_4 (or conc. H_2SO_4), heat

3 substitution:
- **i** PCl_5, room temperature (misty fumes of HCl) or HCl
- **ii** KBr and conc. (50%) H_2SO_4, warm
- **iii** PI_3 (red P, I_2), warm

4 oxidation: [O]; $K_2Cr_2O_7$ and dil. H_2SO_4, warm and distil off the aldehyde immediately; orange → green

5 oxidation: [O]; $K_2Cr_2O_7$ and dil. H_2SO_4, heat under reflux; orange → green

6 oxidation: [O]; excess $K_2Cr_2O_7$ and dil. H_2SO_4, heat under reflux; orange → green

Tertiary alcohols are not oxidised: the dichromate stays orange.

Tests: aldehyde: Benedict's or Fehling's solution turns brick red; carboxylic acid: fizzes with Na_2CO_3 or $NaHCO_3$.

combustion · dehydration (elimination) · substitution · oxidation

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