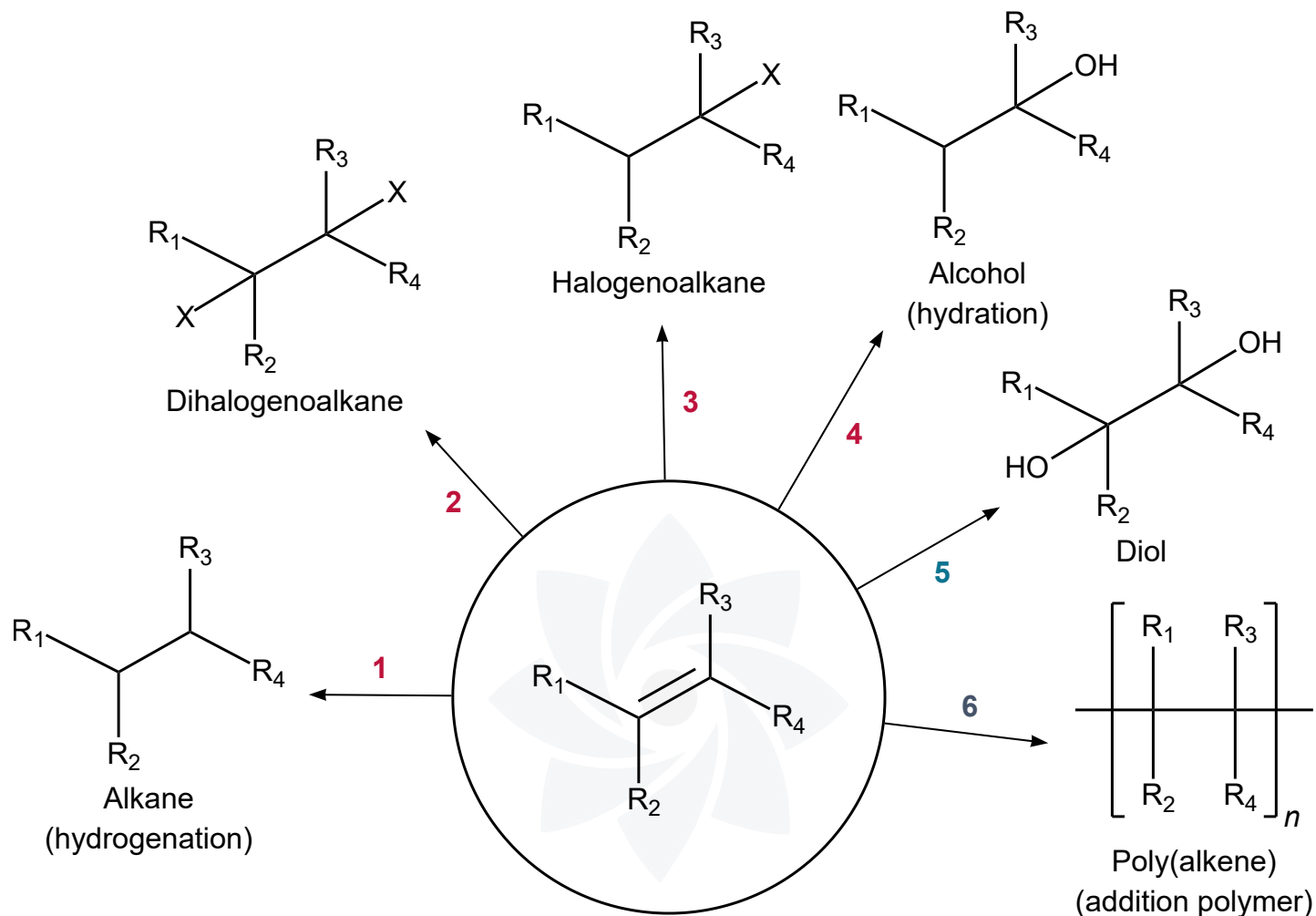


Alkenes Map

Edexcel International A Level Chemistry · Unit 1 · Topic 5



1 addition: $\text{H}_2(\text{g})$, nickel catalyst, about $150\text{ }^\circ\text{C}$

4 addition: steam, $\text{H}_2\text{O}(\text{g})$, H_3PO_4 catalyst, about $300\text{ }^\circ\text{C}$, 60 atm

2 addition: Br_2 or Cl_2 , room temperature; bromine water turns orange $\rightarrow$ colourless

5 oxidation: $[\text{O}]$; KMnO_4 and dil. H_2SO_4 , room temperature; purple $\rightarrow$ colourless

3 addition: HBr , HCl or HI , room temperature; major product from the more stable carbocation

6 polymerisation: many alkene molecules, high pressure and heat with an initiator, or a catalyst

Test for $\text{C}=\text{C}$: bromine water turns from orange to colourless.

With unsymmetrical alkenes, HX gives the major product through the more stable carbocation (tertiary > secondary > primary).

addition oxidation polymerisation

