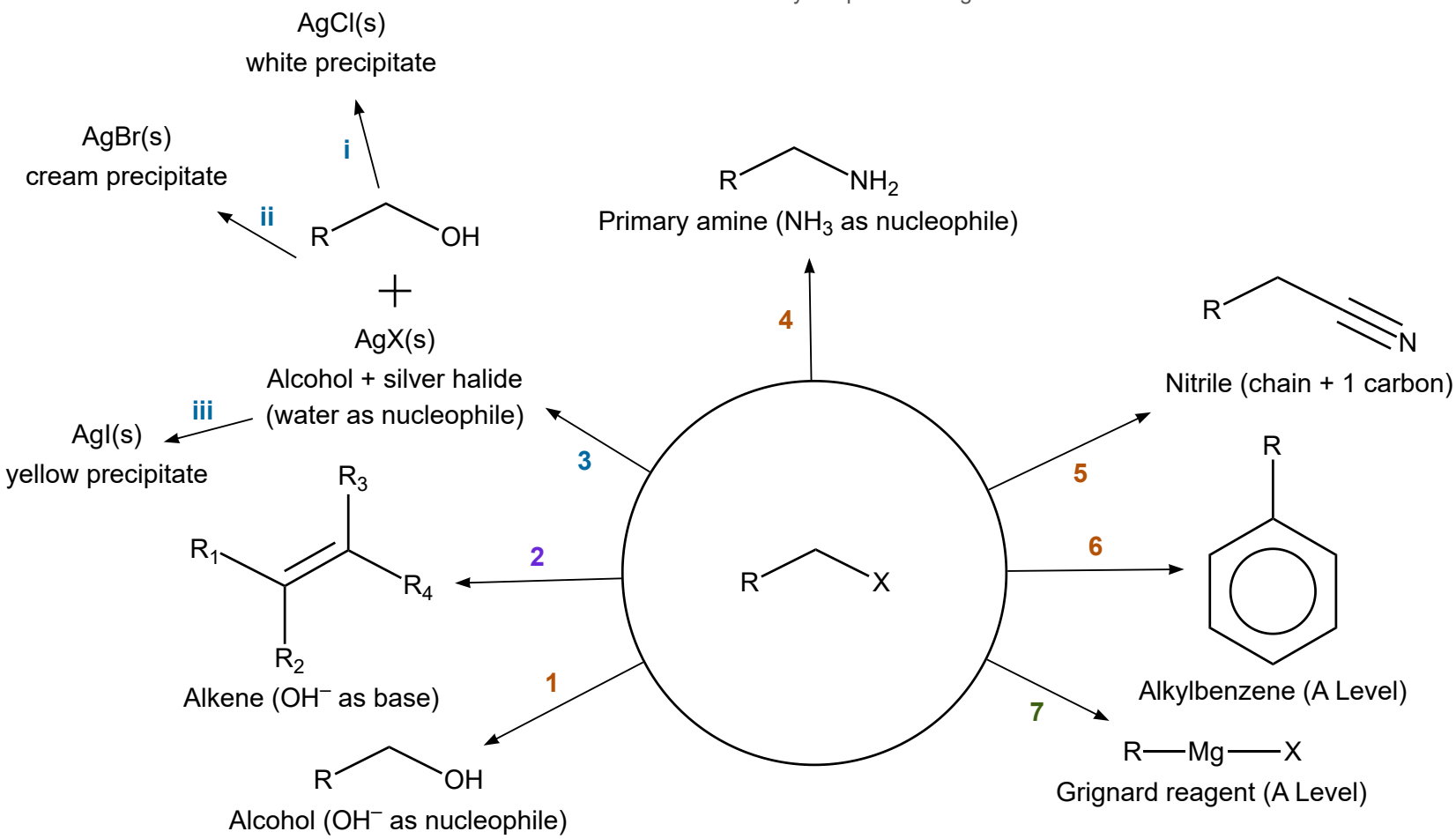
Halogenoalkanes Map

Edexcel A Level Chemistry · Topic 6D Halogenoalkanes



1 substitution: KOH(aq), heat under reflux

2 elimination: KOH in ethanol, heat under reflux

3 hydrolysis: $AgNO_3$(aq) in ethanol, warm (about 50 °C water bath)
i slowest (C–Cl strongest)
ii intermediate rate
iii fastest (C–I weakest)

4 substitution: excess NH_3 in ethanol, heat under pressure (sealed tube)

5 substitution: KCN in ethanol, heat under reflux

6 substitution (Friedel–Crafts): benzene, $AlCl_3$ catalyst, anhydrous, warm (alkylation)

7 Grignard formation: Mg turnings, dry ether, reflux

Rate of hydrolysis: tertiary > secondary > primary; iodo > bromo > chloro (C–X bond enthalpy falls).
S_N1 and S_N2 evidence from optical activity comes in Topic 17A.

substitution elimination hydrolysis Grignard formation

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