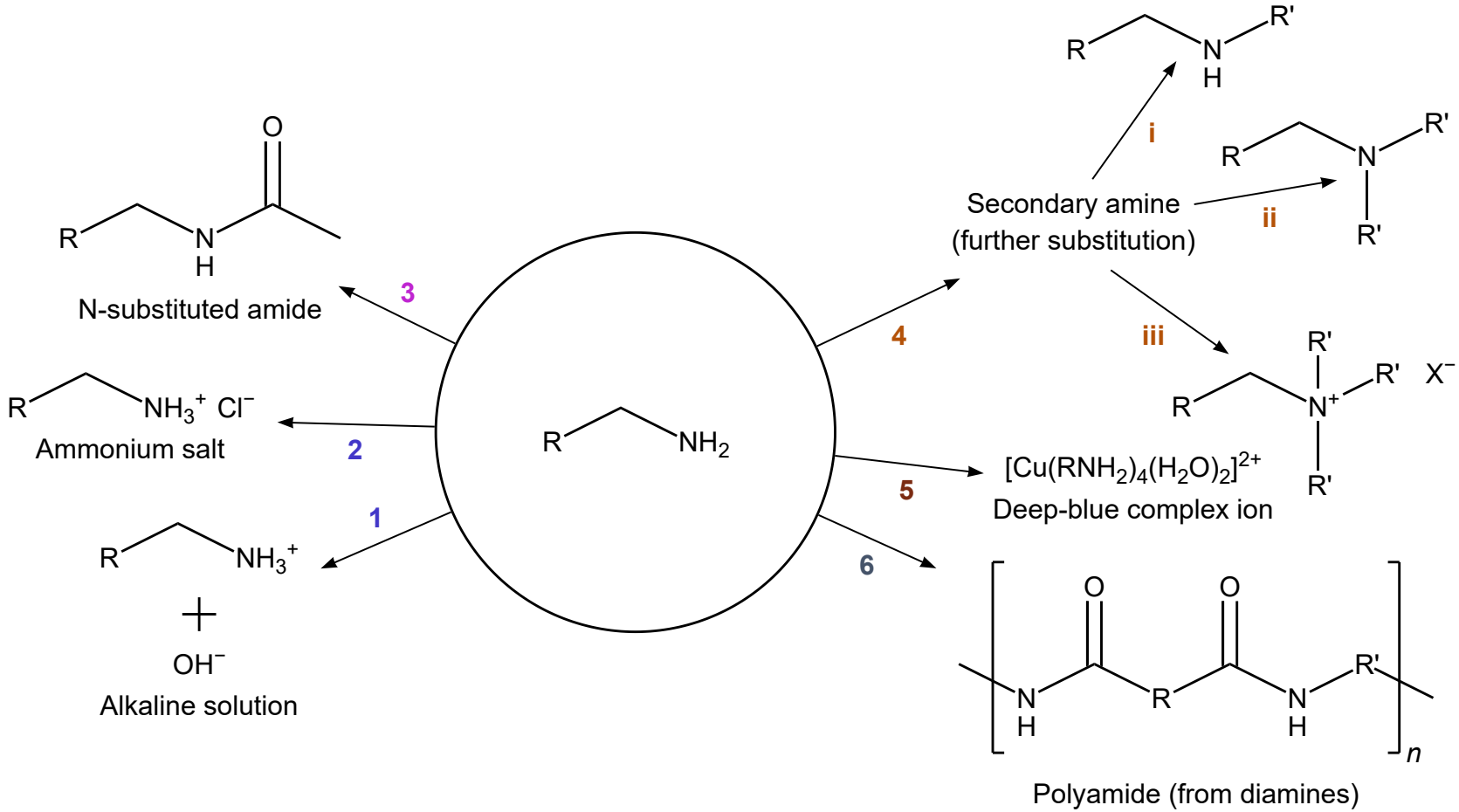
Amines Map

Edexcel A Level Chemistry · Topic 18B Amines, amides, amino acids and proteins



1 acid-base: water, room temperature

2 acid-base: HCl(aq), room temperature

3 addition-elimination: ethanoyl chloride, CH_3COCl, room temperature

4 substitution: halogenoalkane, R'X, heat in ethanol
i R'X → secondary amine
ii more R'X → tertiary amine
iii excess R'X → quaternary ammonium salt

5 complex formation: $Cu^{2+}(aq)$, room temperature

6 polymerisation (condensation): dicarboxylic acid or dioyl chloride (e.g. nylon)

Base strength: butylamine > ammonia > phenylamine (lone pair availability).
Made from halogenoalkanes (excess ethanolic NH_3, under pressure), nitriles ($LiAlH_4$ in dry ether, then water; or H_2/Ni, heat and pressure) or, for phenylamine, nitrobenzene (Sn + conc. HCl).

acid-base · addition-elimination · substitution · complex formation · polymerisation

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