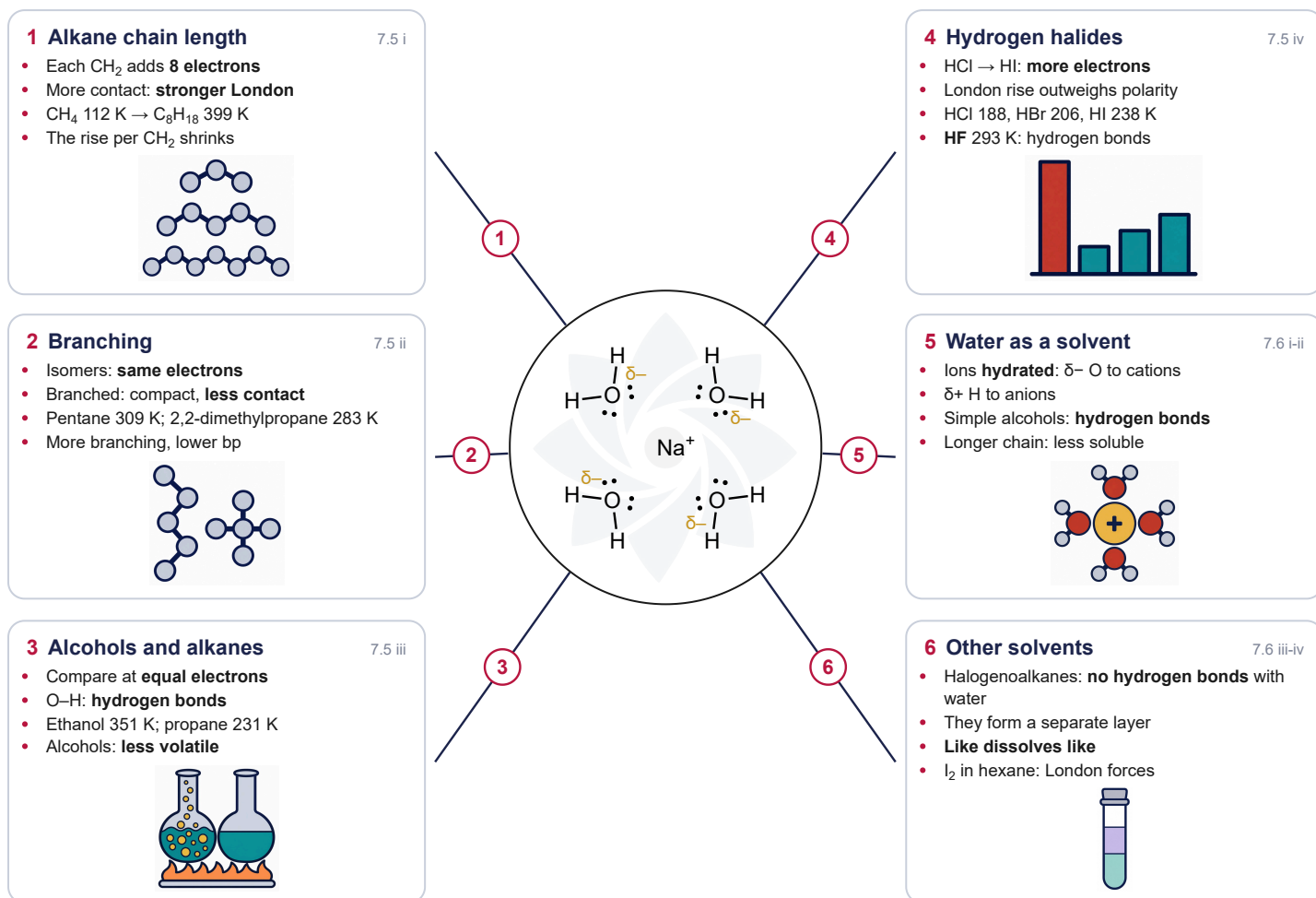


Boiling Temperatures and Solvents Map

Edexcel International A Level Chemistry · Unit 2 · Topic 7B Boiling Temperatures and Solvents



Will it dissolve? compare the forces broken with the forces made

Solute	Water	Hexane	Why
NaCl	yes	no	water hydrates the ions; hexane cannot attract them
Ethanol	yes	yes	hydrogen bonds with water; its C_2H_5 gives London forces with hexane
Hexan-1-ol	slightly	yes	long non-polar chain; only one O–H
1-Bromobutane	no	yes	polar, but no hydrogen bonds with water
Iodine, I_2	hardly	yes	London forces only: matches hexane
CaCO_3	no	no	lattice too strong for hydration

Worked examples

Same electrons

- propan-1-ol 34 e⁻: 370 K
- butane 34 e⁻: 273 K
- hydrogen bonds** add 97 K

Polar but low

- HCl most polar: 188 K
- HI least polar: 238 K
- London forces** dominate

Two layers

- 1-bromobutane + water
- no hydrogen bonds formed
- denser layer **sinks**

These ideas return with alcohols, halogenoalkanes and carbonyl compounds (Topics 10 and 15) and in separating funnels.



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