# Chemistry Formula Sheet

Chapter by chapter, topic by topic. Written by the PadhoNa team for quick revision.

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CHAPTER 26

## Alcohols Phenols and Ethers

### Alcohols

LUCAS TEST

$$3^\circ \text{ immediate turbidity},\ 2^\circ \text{ in about 5 min},\ 1^\circ \text{ none at room temperature}$$

OXIDATION

$$1^\circ \rightarrow \text{aldehyde} \rightarrow \text{acid}; \qquad 2^\circ \rightarrow \text{ketone}; \qquad 3^\circ \text{ resists}$$

DEHYDRATION

$$3^\circ > 2^\circ > 1^\circ \ (\text{conc. } H_2SO_4)$$

### Phenols

$$\text{Reimer–Tiemann: PhOH} \xrightarrow{CHCl_3,\ NaOH} \text{salicylaldehyde}; \qquad \text{Kolbe: PhONa} \xrightarrow{CO_2} \text{salicylic acid}$$

$$\text{phenol} + Br_2(aq) \rightarrow 2,4,6\text{-tribromophenol (white ppt)}$$

### Ethers

WILLIAMSON SYNTHESIS

$$RONa + R'X \rightarrow ROR' \ \ (\text{use a } 1^\circ \text{ halide})$$

$$\text{ether} + HI \rightarrow ROH + R'I \ \ (\text{I attaches to the smaller alkyl group, or via SN1 to the } 3^\circ)$$

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