

Ethanol has a surface tension of  $22.4 \text{ mNm}^{-1}$  and has a contact angle on glass of  $0^\circ$ . Its density is  $0.79 \text{ g/cm}^{-3}$ . Calculate the rise of ethanol up a capillary of radius  $0.1 \text{ mm}$ .

$$\sigma 2\pi r_c = \rho g h r_c^2$$

$$h = \frac{2\sigma}{\rho g r_c} = \frac{2 \times 22.4 \times 10^{-3}}{0.79 \times 10^{-3} \times 10^6 \times 9.81 \times 0.1 \times 10^{-3}} = 57.8 \times 10^{-3} \text{ m} = 5.78 \text{ cm}$$

