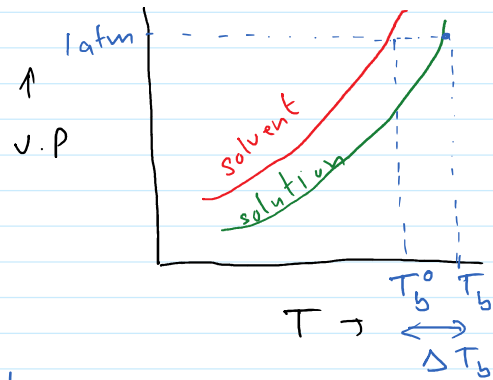
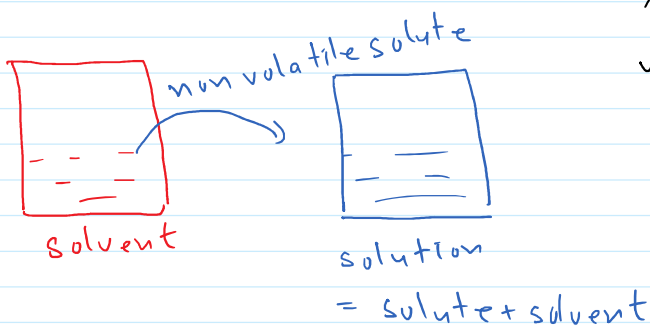


Elevation in boiling point



$$\Delta T_b = k_b m$$

$m \rightarrow$ molality
 $k_b \rightarrow$ molal elevation constant (ebullioscopic constant)

k_b : i) It is elevation in boiling point for 1 molal solution

ii) units = $\frac{\text{K Kg}}{\text{mol}}$, $\frac{^\circ\text{C Kg}}{\text{mol}}$

iii)
$$k_b = \frac{R (T_b^0)^2 M_{\text{solvent}}}{1000 \times \Delta H_{\text{vap}}}$$

$R \rightarrow$ Gas constant

$T_b^0 \rightarrow$ Boiling point of solvent

$M_{\text{solvent}} \rightarrow$ Molar mass of solvent

$\Delta H_{\text{vap}} \rightarrow$ Molar enthalpy of vapourization.

iv) k_b depends upon solvent and it is different for different solvents.

v) k_b for water = $0.52 \frac{\text{K Kg}}{\text{mol}}$