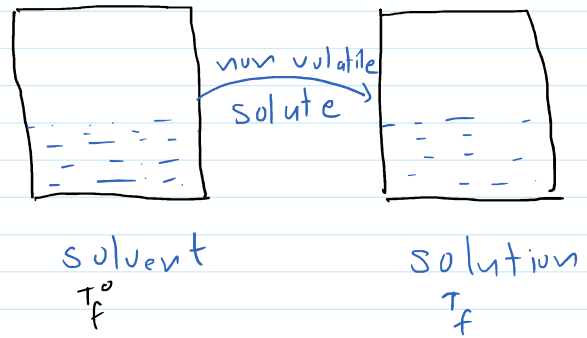
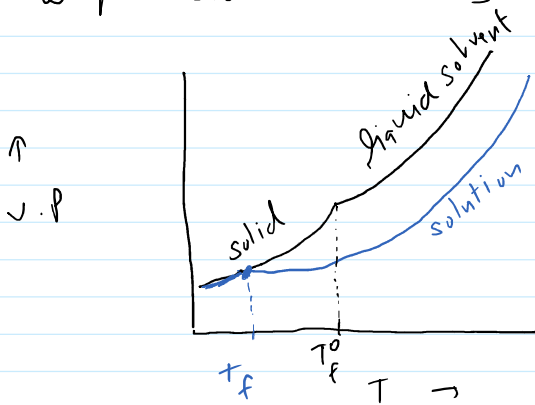
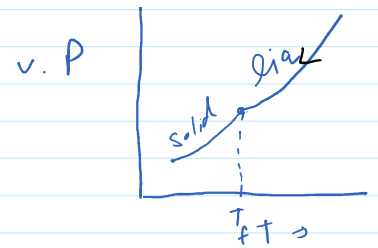


Depression in Freezing point



$$\Delta T_f = T_f^0 - T_f$$

$$\Delta T_f = k_f m \quad m \rightarrow \text{molality}$$



k_f → Molal depression constant
 → Cryoscopic constant

Units: $\frac{K \cdot kg}{mol}$

Defination: k_f is depression in freezing point for 1m solution.

Formula:
$$k_f = \frac{R (T_f^0)^2 M_{\text{solvent}}}{1000 \times \Delta_{\text{fus}} H}$$

$\Delta_{\text{fusion}} H$ = Molar enthalpy of fusion of solvent
 T_f^0 → Freezing point of solvent