

Boiling point elevation

$$\Delta T_{BP} = k \cdot m \cdot i$$

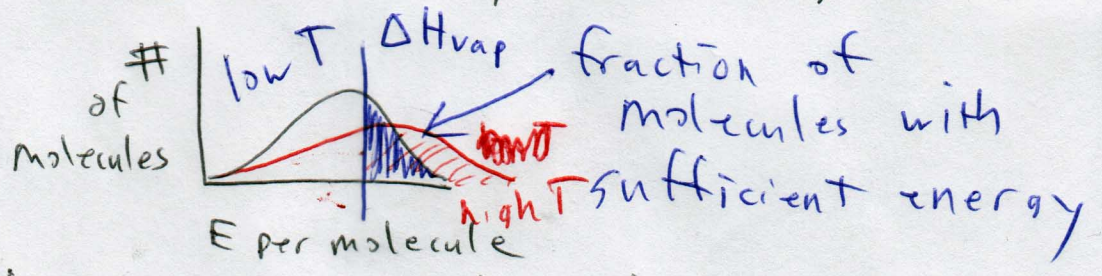
van't Hoff factor
(ionization factor)

↑ m molality

boiling point elevation constant
for the solvent

↑ change in boiling point

vapor pressure - the pressure of the vapor generated by a liquid at a particular ~~press~~ temperature due to the fact that a fraction of molecules have the energy necessary to evaporate.



boiling point - boiling occurs when the vapor pressure of a liquid equals the surrounding atmospheric pressure. If the surrounding pressure drops, a lower vapor pressure is needed to reach boiling, so a lower temperature is needed → lowering BP.

boiling point elevation - when a solute is added to sol'n, it increases the entropy of the solution, making it less favorable for solvent molecules to evaporate, causing a lower vapor pressure. In order for boiling to occur, the vapor pressure must again be raised to match surrounding atmospheric pressure by increasing temperature → boiling point elevation