

Would you please explain the reason of vapor pressure changing.
Thanks

The vapor pressure changes because the chemical activity of the solute decreases since it is in solution. Even if the solution is ideal and there is no enthalpy of mixing, the ideal entropy of mixing (which comes from the fact that A and B are mixing) will decrease the chemical activity, or chemical potential of the solute B in solution. A lower chemical potential means that the equilibrium partial pressure of B has to decrease.