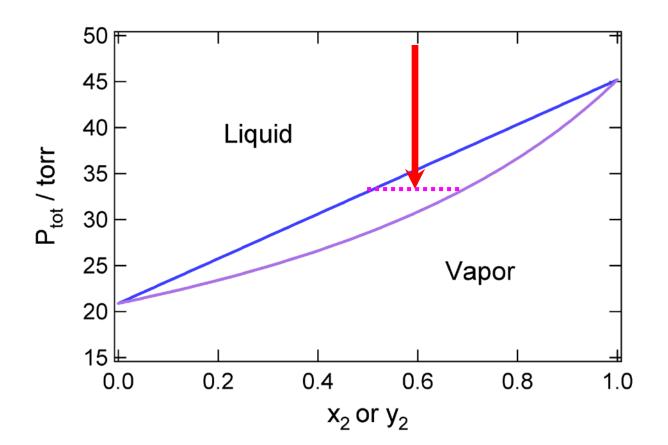# Boiling in a two component system

If we continue to reduce the pressure the system moves into the two-phase region. In the two-phase region the composition of the liquid and the vapor is not the same.

What is the composition?

a. $x_2 = 0.40$, $y_2 = 0.60$
b. $x_2 = 0.50$, $y_2 = 0.70$
c. $x_2 = 0.50$, $y_2 = 0.50$
d. $x_2 = 0.40$, $y_2 = 0.70$

$$P_1^* = 22\ Torr$$

$$P_2^* = 45\ Torr$$

$$P_{tot} = 33\ Torr$$