

Ejercicio 11

$$B = 39 \text{ g (C}_6\text{H}_6\text{)}$$

$$T = 46 \text{ g (C}_7\text{H}_8\text{)}$$

a) fracción molar \Rightarrow n_{Benceno}

$$n_B = \frac{m_B}{M_{rB}} = \frac{39}{78} \text{ mol} = 0,5 \text{ mol}$$

$$n_T = \frac{m_T}{M_{rT}} = \frac{46}{92} = 0,5$$

$$x_T = x_B = 0,5$$

b) $P_B^0 = ?$ $T = 80^\circ\text{C}$ *asume mezcla ideal*

$$P_B = P_B^0 \cdot x_B \quad \text{Raoult} \quad P_T = P_T^0 \cdot 0,5 = 47,5 \text{ mmHg}$$

$$270 \text{ mmHg} = P_B^0 \cdot 0,5 \Rightarrow P_B^0 = \frac{270}{0,5} \text{ mmHg}$$

$$P_B = 270 \cdot 0,5 \Rightarrow P_B = 135 \text{ mmHg}$$

c) y_B en P. EBULLICIÓN?

$$P_B = P_{\text{TOT}} \cdot y_B$$

$$P_{\text{TOT}}^{\text{vapor}} = \sum P_j^{\text{vapor}}$$

$$\text{a } 80^\circ\text{C} \rightarrow P_{\text{TOT}}^{\text{vapor}} = 270 + 95$$

$$P_B = 270$$

$$270 = (270 + 95) \cdot y_B$$

$$y_B = 0,739$$