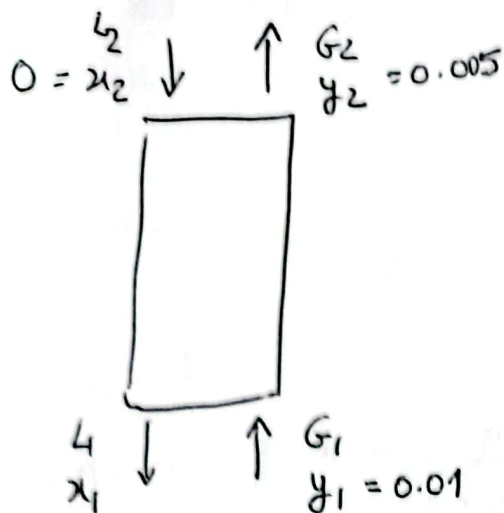


Contracorrente



$$x_2 = 0$$

$$p = 1 \text{ atm}$$

$$20^\circ \text{C}$$

$$y_1 = 0.01$$

$$L_s = 65 \text{ mol/s}$$

$$G_s = 24 \text{ mol/s}$$

$$p_A = P_A^* x_A$$

$$P_A^* = 2 \text{ atm}$$

$$y_{AP} = P_A^* x_A$$

$$y_A^* = 2 x_A$$

a)

$$G_s y_1 = G_1 y_1$$

$$24 \frac{y_1}{1-y_1} = G_1 y_1$$

$$G_1 = \frac{24}{0.99} = 24.24 \text{ mol/s}$$

(erro 1%)

$$G_1 \approx G_2 \approx G_s$$

$$L_1 \approx L_2 \approx L_s$$

$$G_2 y_2 = (1-0.5) G_1 y_1$$

$$G_2 y_2 = 0.5 G_1 * 0.01$$

$$y_2 = 0.005$$

$$G y_1 + L x_2 = G y_2 + L x_1$$

$$G (y_1 - y_2) = L x_1$$

$$\frac{24}{65} (0.01 - 0.005) = x_1 = 0.00185$$

$$y_1 - y_1^* = 0.01 - 2 * 0.00185 = 0.0063$$

$$y_2 - y_2^* = 0.005$$

b) L_{\min}

$$x_1^* = \frac{y_1}{2} = 0.005$$

$$L_{\min} = G = 24 \text{ mol/s}$$

$$L_S = 65 \text{ mol/L}^2\text{S}$$

$$G_S = 24 \text{ mol/L}^2\text{S}$$

$$G_1 \approx G_2 \approx G_S$$

$$G_1 y_1 = G_S y_1$$

$$G_1 \cdot 0.01 = 24 \cdot \frac{0.01}{1 - 0.01} \Rightarrow G_1 = 24.24 \frac{\text{mol}}{\text{L}^2\text{S}}$$

(erro 1%)

50% removed

$$G_2 y_2 = 0.5 G_1 y_1$$

$$G_1 \approx G_2$$

$$y_2 = 0.5 \cdot 0.01$$

$$y_2 = 0.005$$

$$L x_1 + G y_1 = L x_2 + G y_2$$

$$\frac{y_1 - y_2}{x_1 - x_2} = - \frac{L}{G} = - \frac{65}{24}$$

$$x_2 = 0.00185$$

$$a) \frac{L_{\min}}{24} = \frac{0.005}{1 - x_2^*} = 2 \Rightarrow L_{\min} = 48 \frac{\text{mol}}{\text{L}^2\text{S}}$$

$$p_A^* = 2 x_A^*$$

$$y_A^* = 2 x_A^*$$

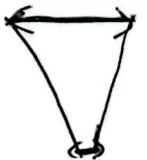
$$0.005 = 2 x_A^*$$

$$x_A^* = 0.0025$$

c) Topo $y_1 - y_1^* = 0.01 - 0 = 0.01$

base $y_2 - y_2^* = 0.005 - 2 * 0.00185$
 $= 1.3 \times 10^{-3}$

vk base f. matriz 10 X menor



~~2/2~~