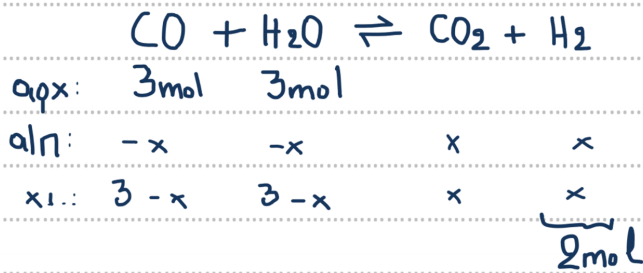


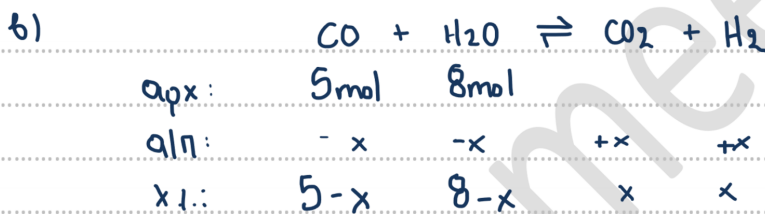
Άσκηση 4.114

$V = 5L$ 3 mol CO $3 \text{ mol H}_2\text{O}$ $[H_2]_{xT} = 0,4M \Rightarrow n_{H_2} = 0,4 \cdot 5 = 2 \text{ mol}$



a) $\alpha = \frac{x}{3} = \frac{2}{3} \text{ ή } 67\%$

$$K_c = \frac{\frac{2^2}{5^2}}{\frac{1^2}{5^2}} = 4 \Rightarrow K_c = 4$$



$$K_c = \frac{\frac{x^2}{V^2}}{\frac{(5-x)(8-x)}{V^2}} = 4 \Rightarrow x^2 = 4 \cdot (5-x)(8-x) \Rightarrow x^2 = 160 - 52x + 4x^2$$

$$\Rightarrow 3x^2 - 52x + 160 = 0$$

$$\Delta = 52^2 - 4 \cdot 3 \cdot 160 = 784$$

$$x_{1,2} = \frac{52 \pm 28}{6} = \left\{ \begin{array}{l} \frac{80}{6} \text{ Απορ.} \\ \frac{24}{6} = 4 \text{ δεκτό} \end{array} \right.$$

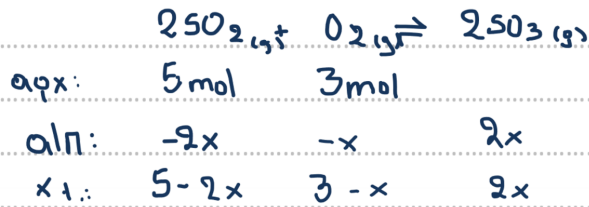
Έλεγχος Περιπέπαιας:



$$\alpha = \frac{x}{5} = \frac{4}{5} = 0,8 \text{ ή } 80\%$$

ΑΓΚΙΝΗ 4.115 (απλή εφαρμογή)

$$V = 2L \quad \theta^{\circ}C \quad 5 \text{ mol } SO_2 \quad 3 \text{ mol } O_2 \quad \text{x.l.} : n_{SO_2} = n_{O_2}$$



$$\text{στι } x.l. : 5 - 2x = 3 - x \Rightarrow x = 2 \text{ mol}$$

Ελέγχος περιόδου: 2 mol SO_2 απαιτούν 1 mol O_2
5 mol ; 2.5 mol
περίσσεια

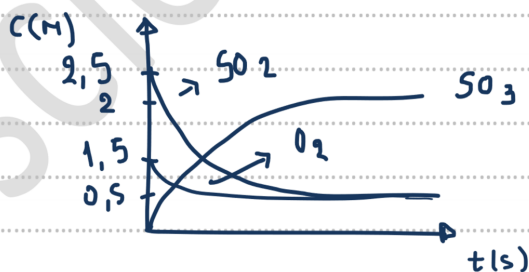
$$a = \frac{2x}{5} = \frac{4}{5} = 0.8 \text{ ή } 80\%$$

$$K_c = \frac{[SO_3]^2}{[SO_2]^2 [O_2]} = \frac{\left(\frac{4}{2}\right)^2}{\left(\frac{1}{2}\right)^2 \cdot \frac{1}{2}} = \frac{16 \cdot 2}{1} = 32$$

$$b) [SO_2]_0 = \frac{5}{2} = 2.5 \text{ M} \quad [SO_2]_{x.l.} = \frac{1}{2} = 0.5 \text{ M}$$

$$[O_2]_0 = \frac{3}{2} = 1.5 \text{ M} \quad [O_2]_{x.l.} = \frac{1}{2} = 0.5 \text{ M}$$

$$[SO_3]_0 = 0 \text{ M} \quad [SO_3]_{x.l.} = \frac{4}{2} = 2 \text{ M}$$

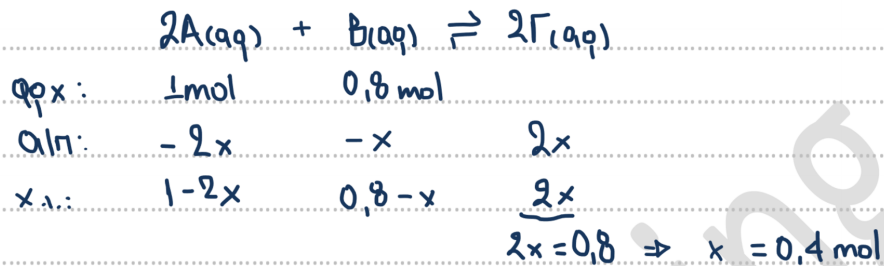


δ) με ↑ θ η x.l. μετατοπίζεται αριστερά ⇒ $K_c \downarrow$ και $a \downarrow$

Άσκηση 4.116 (απλή εφαρμογή)

$$V=2L \quad [A]=0,5M \quad 0,8 \text{ mol } B \quad \text{x.l.: } [Γ]=0,4M$$

α) αρχ: $n_A = 0,5 \cdot 2 = 1 \text{ mol}$ x.l.: $n_{\Gamma} = 0,4 \cdot 2 = 0,8 \text{ mol}$



στη x.l.: $[A]' = \frac{0,2}{2} = 0,1M$ $[B]' = \frac{0,4}{2} = 0,2M$ $[Γ]' = 0,4M$

$$K_c = \frac{0,4^2}{0,1^2 \cdot 0,2} = \frac{0,16}{0,02} = 80$$

β)

απο τον έλεγχο περιβάλλας προκύπτει ότι το σώμα Α αντιδρά πλήρως

Άρα: $\alpha = \frac{2x}{1} = \frac{0,8}{1} = 0,8$ ή 80%