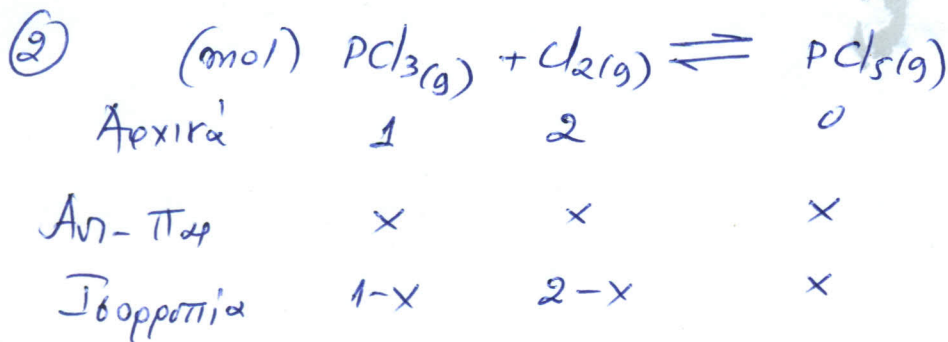


ΧΗΜΙΚΗ Ισορροπία - Λύσεις

- ①
- α) Αν $\theta \uparrow \xrightarrow{\text{Le Chatelier}} \theta \downarrow \Rightarrow$ προς ενδόθετη \rightarrow αριστερά
 - β) Αν $P \downarrow \xrightarrow{\text{Le Chatelier}} P \uparrow \Rightarrow$ $n_{\text{mol}}(g) \uparrow \Rightarrow$ αριστερά
 - γ) Αν $[O_2] \uparrow \xrightarrow{\text{Le Chatelier}} [O_2] \downarrow \Rightarrow$ δεξιά
 - δ) Αν $[H_2O] \uparrow \xrightarrow{\text{Le Chatelier}} [H_2O(g)] \downarrow \Rightarrow$ αριστερά



$1-x = 0,7 \Rightarrow x = 0,3 \text{ mol}$

$$K_c = \frac{[PCl_5]}{[PCl_3][Cl_2]} = \frac{\frac{x}{V}}{\frac{1-x}{V} \cdot \frac{2-x}{V}} = \frac{x \cdot V}{(1-x)(2-x)} = \frac{0,3 \cdot 3}{(1-0,3)(2-0,3)} = 0,756$$

$$K_c = K_p (RT)^{1-(1+1)} \Rightarrow K_c = K_p (RT)^{-1} \Rightarrow K_p = K_c RT \Rightarrow$$

$\Rightarrow K_p = 0,756 \cdot 0,082 \cdot 300 = 18,6$

③ $\Delta G^\circ = 2 \Delta G^\circ_{f, HCl(g)} - \cancel{\Delta G^\circ_{f, H_2(g)}} - \cancel{\Delta G^\circ_{f, Cl_2(g)}} = -190,6 \text{ kJ}$

$$\Delta G^\circ = -RT \ln K_c \Rightarrow \ln K_c = \frac{-190,6}{0,082 \cdot 298} = -7,8 \Rightarrow$$

$$K_c = e^{-7,8} = 4,1 \cdot 10^{-4}$$