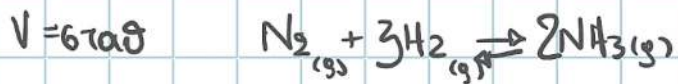


Άσκηση 4.27.



$\frac{n_{\text{N}_2}}{n_{\text{H}_2}} = \frac{1}{2}$

6τα x.i.  $n'_{\text{N}_2} = n'_{\text{H}_2}$

• Έστω  $n_0$  mol  $\text{N}_2$  και  $2n_0$  του  $\text{H}_2$



αρχ:  $n_0$        $2n_0$

αλη:  $-x$        $-3x$        $2x$

x.i.:  $n_0 - x$        $2n_0 - 3x$        $2x$

6τα x.i.:  $n'_{\text{N}_2} = n'_{\text{H}_2} \Rightarrow n_0 - x = 2n_0 - 3x \Rightarrow \underline{2x = n_0} \quad (1)$

$a_{\text{N}_2} = \frac{x}{n_0} \stackrel{(1)}{=} \frac{x}{2x} = \frac{1}{2}$  ή 50%

$a_{\text{H}_2} = \frac{3x}{2n_0} = \frac{3x}{4x} = 0,75$  ή 75%

β) 1 mol  $\text{N}_2$  δίνει 3 mol  $\text{H}_2$   
 $n_0$  mol  $\text{N}_2$        $\underline{3n_0}$  (όχι  $2n_0$ )  
 αντιδρά πλήρως

Αρα:

3 mol  $\text{H}_2$  δίνουν 2 mol  $\text{NH}_3$   
 $2n_0$        $\therefore \omega = \frac{4n_0}{3}$  mol  $\text{NH}_3$  (θεωρητικά)

$a = \frac{2x}{\frac{4n_0}{3}} = \frac{6x}{4n_0} \stackrel{(1)}{=} \frac{6x}{8x} = 0,75$  ή 75%

δ)  $n_{\text{αρχ}} = n_0 + 2n_0 = 3n_0$

$n_{\text{x.i.}} = n_0 - 2x + 2n_0 - 3x + 2x = 3n_0 - 2x$

$\frac{P_{\text{αρχ}} \cdot V}{P_{\text{x.i.}} \cdot V} = \frac{n_{\text{αρχ}} \cdot R \cdot T}{n_{\text{x.i.}} \cdot R \cdot T} \Rightarrow \frac{P_{\text{αρχ}}}{P_{\text{x.i.}}} = \frac{3n_0}{3n_0 - 2x} \stackrel{(1)}{\Rightarrow} \frac{P_{\text{αρχ}}}{P_{\text{x.i.}}} = \frac{6x}{6x - 2x} = \frac{6x}{4x}$

$\Rightarrow \frac{P_{\text{αρχ}}}{P_{\text{x.i.}}} = \frac{3}{2}$