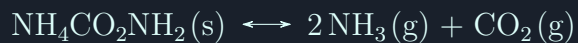


## Questão 1



(i)

$$P_{eq\text{NH}_3(\text{g})} = P_{eq\text{Total}} * \frac{2}{3} \text{ bar} \cong 1.2655 \text{ bar}$$

(ii)

$$P_{eq\text{CO}_2(\text{g})} = P_{eq\text{Total}} * \frac{1}{3} \text{ bar} \cong 0.6328 \text{ bar}$$

(iii)

$$K_p = \frac{P_{eq\text{NH}_3}^2 P_{eq\text{CO}_2}}{1} \cong 1.2655^2 * 0.6328 \cong 1.0134$$

(iv)

	$P_i/\text{bar}$	$P_{Eq}/\text{bar}$
$\text{NH}_3(\text{g})$	0.00	1.2655
$\text{CO}_2(\text{g})$	0.00	0.6328
Total	-	1.8983
$K_p = 1.0134$		

(v)

$$x \text{ mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})} : \text{vol}_{eq} = 3.00 \text{ dm}^3$$

$$x \text{ mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})} \cong \frac{1.0134 \text{ mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})}}{\text{mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})\text{Decomp.}}} \frac{\text{mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})\text{Decomp.}}}{\text{mol}_{\text{CO}_2(\text{g})}}$$
$$\frac{8.3145 * (50 + 273.15) \text{ mol}_{\text{CO}_2(\text{g})}}{0.6328 * 10^5 * (3.00 \text{ d}^3)} \cong 14.3439 \text{ mol}_{\text{NH}_4\text{CO}_2\text{NH}_2(\text{s})}$$