

QUI016 - Módulo 4 - Gases (Aula: 29/04)

1. gás: N_2 $V = 65 \text{ L}$ $p = 829 \text{ mmHg}$
 $T = 25^\circ\text{C}$ $m = ?$

Unidades: $p = \frac{829 \text{ mmHg} (1 \text{ atm})}{(760 \text{ mmHg})} = \underline{1,09079 \text{ atm}}$

$T = 25^\circ\text{C} = 25 + (273,15) = \underline{298,15 \text{ K}}$

$pV = nRT \rightarrow n = \frac{pV}{RT} = \frac{(1,09079)(65)}{(0,082057)(298,15)}$
 $n = \underline{2,8980 \text{ mol}}$

2. gás: CO_2 $V = 22,414 \text{ L}$ $p = 1 \text{ atm}$
 $T = 273,15 \text{ K}$ $M = 44,0098 \text{ g/mol}$
 $p = ?$

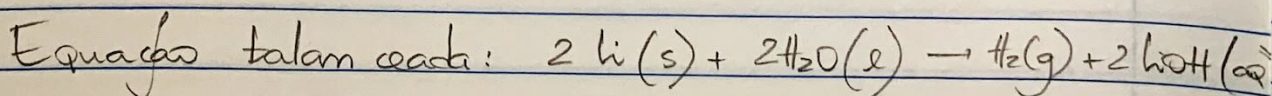
$p = \frac{n}{V} = \frac{(n \times M)}{V} = \frac{n \times M}{RT} \cdot p = \frac{Mp}{RT}$

$\therefore \boxed{p = \frac{Mp}{RT}}$

$p = \frac{(44,0098)(1)}{(0,082057)(273,15)} = 1,9635 \frac{\text{g atm mol}}{\text{mol L atm K}}$

$p = 1,9635 \text{ g/L}$

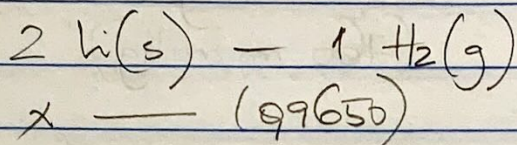
3. $V = 23,5 \text{ L}$ $T = 170^\circ\text{C} = 290,15 \text{ K}$
 $p = \frac{743 \text{ mmHg} (1 \text{ atm})}{(760 \text{ mmHg})} = 0,9776 \text{ atm}$



$$pV = nRT \rightarrow n(H_2) = \frac{pV}{RT} = \frac{(0,9776)(23,5)}{(9082057)(290,15)}$$

$$n(H_2) = 0,9650 \text{ mol}$$

Relação estequiométrica:



$$x = 1,9299 \text{ mols de Li}$$

$$M(\text{Li}) = 6,941 \text{ g/mol}$$

$$m = n \times M = 1,9299 \times 6,941 = \underline{\underline{13,395 \text{ g}}}$$