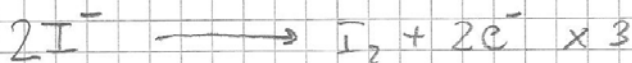
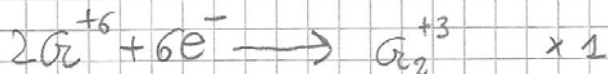
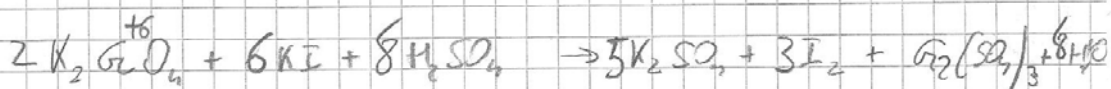


1



$$\frac{194,4}{194,2} \approx 0,1 \text{ mol di } K_2Cr_2O_7 \quad P.f(K_2Cr_2O_7) = 194,2$$

$$0,1 : 2 = x : 3$$

$$x = 0,15$$

$$0,15 \times (2 \times 126,9) = 38,07 \text{ g di } I_2$$

P.f(I₂)

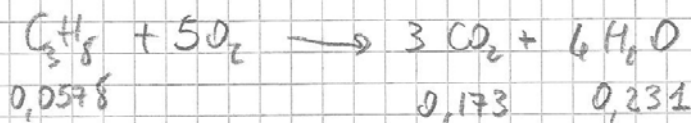
2

$$24 + 273,15 = 297,15 \text{ K}$$

$$\frac{53}{760} = 0,0763 \text{ Atm}$$

18,5 g

$$\Rightarrow n = \frac{0,0763 \cdot 18,5}{0,0821 \cdot 297,15} = 0,0578 \text{ mol di } C_3H_8$$



$$\text{mol di } CO_2 \text{ tot} = \frac{14,3}{44} = 0,3250$$

$$\text{mol di } H_2O \text{ tot} = \frac{7,57 + 1,0}{18} = 0,4205$$

$$\text{mol di } CO_2 \text{ da } C_xH_y = 0,3250 - 0,173 = 0,1520 = \text{mol di } C$$

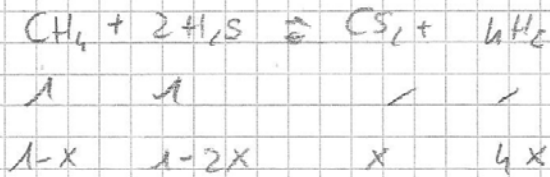
$$\text{mol di } H_2O \text{ da } C_xH_y = 0,4205 - 0,231 = 0,189 \Rightarrow 0,378 \text{ mol di } H$$

$$\frac{H}{C} = \frac{0,378}{0,152} \approx 2,49 \Rightarrow \frac{10}{4} \Rightarrow C_4H_{10}$$

$$\text{mol di } C_4H_{10} = \frac{0,152}{4} = 0,038$$

$$\% C_4H_{10} = \frac{0,038}{0,038 + 0,0578} = 39\% \quad \% C_3H_8 = 61$$

③



$$\text{moli totali} = 1-x + 1-2x + x + 4x = 2+2x = 2(1+x)$$

$$P_{\text{CS}_2} = 0,16 \text{ Atm}$$

$$P_{\text{tot}} = 1 \text{ Atm}$$

$$P_{\text{CS}_2} = \bar{x}_{\text{CS}_2} P_{\text{tot}}$$

$$\Rightarrow \bar{x}_{\text{H}_2} = 0,16 \Rightarrow 0,16 = \frac{4x}{2(1+x)} = \frac{2x}{1+x}$$

$$0,16 + 0,16x = 2x$$

$$0,16 = 1,84x \quad x = 0,0869$$

$$\text{moli CS}_2 = 0,0869$$

$$\text{moli H}_2 = 0,3478$$

$$\text{moli H}_2\text{S} = 0,8262$$

$$\text{moli CH}_4 = 0,9131$$

$$\text{moli totali} = 2,138$$

$$x_{\text{CS}_2} = 0,0406$$

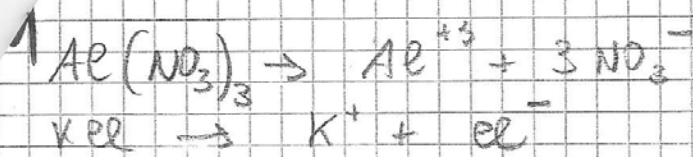
$$x_{\text{H}_2} = 0,16$$

$$x_{\text{H}_2\text{S}} = 0,3864$$

$$x_{\text{CH}_4} = 0,4270$$

$$K_p = \frac{P_{\text{CS}_2} \cdot P_{\text{H}_2}^4}{P_{\text{CH}_4} \cdot P_{\text{H}_2\text{S}}^2} = \frac{P_{\text{tot}}^2 \cdot x_{\text{CS}_2} \cdot x_{\text{H}_2}^4}{x_{\text{CH}_4} \cdot x_{\text{H}_2\text{S}}^2}$$

$$K_p = 4,17 \cdot 10^{-4}$$



$$\pi = CRT (1 + \alpha (v-1))$$

$$C(1 + \alpha (v-1)) = C_{\text{TOT}}$$

$$\pi = C_{\text{TOT}} RT$$

$$2,45 = C_{\text{TOT}} \cdot 0,0821 \cdot 258,15$$

$$C_{\text{TOT}} = 0,1 \text{ M}$$

Punto b)

$$\Delta T = K \cdot m_{\text{TOT}}$$

$$\Delta T \cdot m_{\text{TOT}} \cong C_{\text{TOT}}$$

$$\Delta T = 1,86 \cdot 0,1 = 0,186 \text{ } ^\circ\text{C}$$

$$T_{\text{con}} = -0,186 \text{ } ^\circ\text{C}$$

$$\left(\frac{x}{98 (\text{Ae}(\text{NO}_3)_3)} \cdot 4 + \frac{y}{74,55 (\text{KCl})} \cdot 2 \right) = 0,1$$

$$\left(x + y = 4,5 \right)$$

$$\frac{x}{213} \cdot 4 + \frac{y}{74,55} \cdot 2 = 0,1$$

$$\frac{x}{213} \cdot 4 + \frac{(4,5-x)}{74,55} \cdot 2 = 0,1$$

$$0,0187x + 0,120 - 0,0268x = 0,1$$

$$+0,00812x = +0,02$$

$$x = 2,46 \text{ g}$$

$$54,6\% \text{ Ae}(\text{NO}_3)_3$$

$$y = 2,036 \text{ g}$$

$$45,4\% \text{ KCl}$$