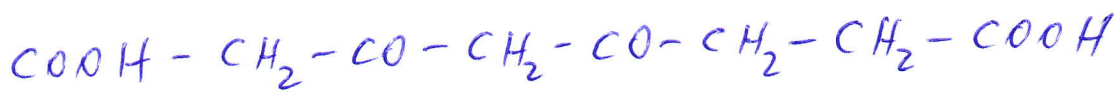


① Fórmula semidesarrollada:



② $M = 6 \cdot 12 + 7 \cdot 1 + 2 \cdot 16 = 111 \frac{\text{g}}{\text{mol}}$

$$V = \frac{m}{d} = \frac{50}{1/32} = \boxed{37'9 \text{ mL}}$$

$$n = \frac{m}{M} = \frac{50}{111} = 0'451 \text{ mol}$$

$$N = n \cdot N_A = 0'451 \cdot 6'022 \cdot 10^{23} = \boxed{2'72 \cdot 10^{23} \text{ moléculas}}$$

③ $M = 2 \cdot 55'85 + 3 \cdot 32 + 12 \cdot 16 = 399'7 \frac{\text{g}}{\text{mol}}$

$$n = \frac{m}{M} = \frac{100}{399'7} = 0'25 \text{ mol}$$

$$n_{\text{Fe}} = 2 \cdot 0'25 = \boxed{0'5 \text{ mol Fe}}$$

$$N_{\text{O}} = 12 \cdot 0'25 \cdot 6'022 \cdot 10^{23} = \boxed{1'81 \cdot 10^{24} \text{ átomos O}}$$

$$\textcircled{4} \quad \text{Fe: } \frac{2 \cdot 55.85 \cdot 100}{399.7} = \boxed{28\%}$$

$$\text{S: } \frac{3 \cdot 32 \cdot 100}{399.7} = \boxed{24\%}$$

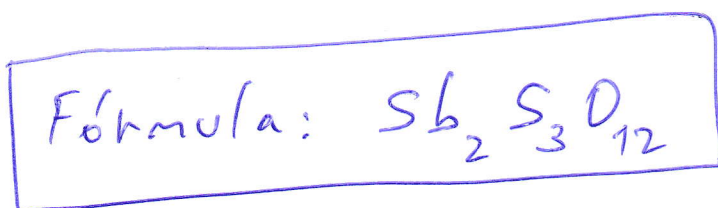
$$\text{O: } 100 - 28 - 24 = \boxed{48\%}$$

$$\textcircled{5} \quad \text{O: } 100 - 45.8 - 18.1 = 36.1\%$$

$$\text{Sb: } \frac{45.8}{121.76} = 0.376 \rightarrow \frac{0.376}{0.376} = 1 \xrightarrow{\times 2} 2$$

$$\text{S: } \frac{18.1}{32} = 0.566 \rightarrow \frac{0.566}{0.376} \approx 1.5 \xrightarrow{\times 2} 3$$

$$\text{O: } \frac{36.1}{16} = 2.26 \rightarrow \frac{2.26}{0.376} \approx 6 \xrightarrow{\times 2} 12$$



$$\textcircled{6} \quad M = 2 \cdot 16 = 32 \frac{\text{g}}{\text{mol}}$$

$$m = 32 \frac{\text{g}}{\text{mol}} \cdot \frac{1 \text{ mol}}{6.022 \cdot 10^{23} \text{ moléculas}} = \boxed{5.31 \cdot 10^{-23} \frac{\text{g}}{\text{molécula}}}$$

$\textcircled{7}$ * Masa de disolución:

$$m_D = d_D \cdot V_D = 1.1 \frac{\text{g}}{\text{cm}^3} \cdot 40 \text{ cm}^3 = 44 \text{ g disolución}$$

* Masa de soluto:

$$m_s = \frac{m_D \cdot \text{Perc}}{100} = \frac{44 \cdot 53}{100} = \boxed{23.3 \text{ g soluto}}$$

$\textcircled{8}$ 40% \rightarrow $\left\{ \begin{array}{l} 40 \text{ g soluto (HClO}_4) \\ 100 \text{ g disolución} \end{array} \right.$

$$V_D = \frac{m_D}{d_D} = \frac{100}{1.2} = 83.3 \text{ mL}$$

$$M_s = 1 + 35.5 + 16 \cdot 4 = 100.5 \frac{\text{g}}{\text{mol}}$$

$$n_s = \frac{m_s}{M_s} = \frac{40}{100.5} = 0.398 \text{ mol}$$

$$C_M = \frac{n_s}{V_D} = \frac{0.398 \text{ mol}}{0.0833 \text{ L (3)}} = \boxed{4.78 \text{ M}}$$