

$$1000 \text{ ml} \quad \text{---} \quad 0,1251 \text{ mols de NaOH}$$

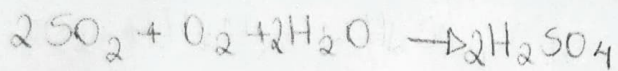
$$48,13 \text{ ml} \quad \text{---} \quad x$$

$$x = 6,02 \times 10^{-3} \text{ mols de NaOH}$$

$$2 \text{ mols de NaOH} \quad \text{---} \quad 1 \text{ mol de H}_2\text{SO}_4$$

$$6,02 \times 10^{-3} \quad \text{---} \quad y$$

$$y = 3,01 \times 10^{-3} \text{ mol de H}_2\text{SO}_4$$



$$2 \text{ mols de H}_2\text{SO}_4 \quad \text{---} \quad 2 \text{ mols de SO}_2$$

$$3,01 \times 10^{-3} \quad \text{---} \quad z$$

$$z = 3,01 \times 10^{-3} \text{ mols de SO}_2$$

$$1 \text{ mol de SO}_2 \quad \text{---} \quad 1 \text{ mol de S}$$

$$3,01 \times 10^{-3} \quad \text{---} \quad w$$

$$w = 3,01 \times 10^{-3} \text{ mols}$$

$$1 \text{ mol de sulfanilamida} \quad \text{---} \quad 1 \text{ mol de S}$$

$$3,01 \times 10^{-3} \quad \text{---} \quad j$$

$$j = 3,01 \times 10^{-3} \text{ mols de sulfanilamida}$$

$$C_6H_4N_2O_2S = 12(6) + 1(4) + 14(2) + 16(2) + 32 = 168 \text{ g/mol}$$

$$\begin{array}{l} 1 \text{ mol de sulfanilamida} \text{ --- } 168 \text{ g} \\ 3,01 \times 10^{-3} \text{ --- } x \end{array}$$

$$x = 0,5056 \text{ g}$$

$$\begin{array}{l} 0,5136 \text{ g} \text{ --- } 100\% \\ 0,5056 \text{ g} \text{ --- } y \end{array} \Rightarrow y = 98,46\% \text{ m/m de sulfanilamida}$$

$$\textcircled{3} \begin{array}{l} 1000 \text{ ml} \text{ --- } 0,05322 \text{ moles de KSCN} \\ 85,14 \text{ ml} \text{ --- } x \end{array}$$

$$x = 1,87 \times 10^{-3} \text{ moles de KSCN (excesso)}$$

$$\begin{array}{l} 1000 \text{ ml} \text{ --- } 0,05619 \text{ moles de AgNO}_3 \\ 50 \text{ ml} \text{ --- } y \end{array}$$

$$y = 2,81 \times 10^{-3} \text{ moles (total)}$$

$$\text{reagido} = (2,81 \times 10^{-3}) - (1,87 \times 10^{-3}) = 9,40 \times 10^{-4} \text{ moles}$$

$$1 \text{ mol de I}^- \text{ --- } 127 \text{ g}$$

$$9,40 \times 10^{-4} \text{ --- } z$$

$$z = 0,1193 \text{ g} \\ \text{de I}^-$$

$$0,6712 \text{ g} \text{ --- } 100\%$$

$$0,1193 \text{ g} \text{ --- } w$$

$$w = 17,77\% \text{ de m/m de I}^-$$

④ 1ª titulação

$$\begin{array}{l} 1000 \text{ ml} \text{ — } 0,05831 \text{ mol de EDTA} \\ 26,14 \text{ ml} \text{ — } x \end{array}$$

$$x = 1,52 \times 10^{-3} \text{ mols de EDTA (Ni)} \quad)$$

2ª titulação

$$\begin{array}{l} 1000 \text{ ml} \text{ — } 0,05831 \text{ mol de EDTA} \\ 35,43 \text{ ml} \text{ — } y \end{array}$$

$$y = 2,06 \times 10^{-3} \text{ mols de EDTA (Fe + Ni)}$$

3ª titulação

$$\begin{array}{l} 1000 \text{ ml} \text{ — } 0,05831 \text{ mol de EDTA} \\ 50 \text{ ml} \text{ — } z \end{array}$$

$$z = 2,91 \times 10^{-3} \text{ mols de EDTA (Fe + Ni + Cr + Cu)}$$

4ª titulação

$$\begin{array}{l} 1000 \text{ ml} \text{ — } 0,06316 \text{ mols de Cu}^{2+} \\ 6,21 \text{ ml} \text{ — } w \end{array}$$

$$w = 3,92 \times 10^{-4} \text{ mols de Cu}^{2+} \text{ (excesso) (Cu-}$$

$$\text{Ni} = 1,52 \times 10^{-3} \text{ mols}$$

$$\text{Fe} = (2,06 \times 10^{-3}) - (1,52 \times 10^{-3}) = 5,4 \times 10^{-4} \text{ mols de Fe}$$

$$\text{Cr + Cu} = (4,32 \times 10^{-3}) - (5,4 \times 10^{-4}) - (2,91 \times 10^{-3}) = 8,5 \times 10^{-4} \text{ mols de Cr + Cu}$$

$$\text{Cr} = (8,5 \times 10^{-4}) - (3,92 \times 10^{-4}) = 4,58 \times 10^{-4} \text{ mols de Cr}$$

Porcentagem Ni

$$\begin{array}{l} 50 \text{ ml} \text{ — } 1,52 \times 10^{-3} \text{ moles de Ni} \\ 250 \text{ ml} \text{ — } x \end{array}$$

$$x = 7,6 \times 10^{-3} \text{ moles de Ni}$$

$$m = (7,6 \times 10^{-3})(59) = 0,4484 \text{ g de Ni}$$

$$\begin{array}{l} 0,7176 \text{ g} \text{ — } 100\% \\ 0,4484 \text{ g} \text{ — } x \end{array} \Rightarrow y = 62,50\% \text{ m/m de Ni}$$

Porcentagem Fe

$$\begin{array}{l} 50 \text{ ml} \text{ — } 5,4 \times 10^{-4} \text{ moles de Fe} \\ 250 \text{ ml} \text{ — } x \end{array}$$

$$x = 2,7 \times 10^{-3} \text{ moles de Fe}$$

$$m_{\text{Fe}} = (2,7 \times 10^{-3})(56 \text{ g}) = 0,1512 \text{ g de Fe}$$

$$\begin{array}{l} 0,7176 \text{ g} \text{ — } 100\% \\ 0,1512 \text{ g} \text{ — } y \end{array} \Rightarrow y = 21,07\% \text{ m/m de Fe}$$

Porcentagem Cr

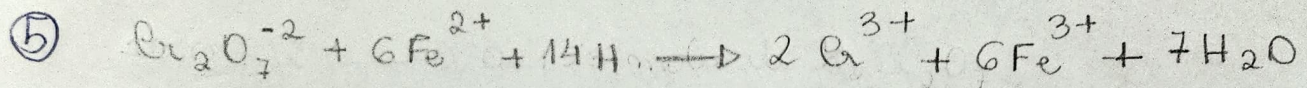
$$\begin{array}{l} 50 \text{ ml} \text{ — } 4,58 \times 10^{-4} \text{ moles de Cr} \\ 250 \text{ ml} \text{ — } x \end{array}$$

$$x = 2,30 \times 10^{-3} \text{ moles de Cr}$$

$$m_{\text{Cr}} = (2,30 \times 10^{-3})(52) = 0,1191 \text{ g}$$

$$\begin{array}{l} 0,7176 \text{ g} \text{ — } 100\% \\ 0,1191 \text{ g} \text{ — } y \end{array} \Rightarrow y = 16,60\% \text{ m/m de Cr}$$

PF - Analítica



$$x = \frac{1000 \text{ ml}}{36,92 \text{ ml}} \cdot 0,02153 \text{ mol de } \text{K}_2\text{Cr}_2\text{O}_7$$

$$x = 7,95 \times 10^{-4} \text{ mols de } \text{K}_2\text{Cr}_2\text{O}_7$$

$$1 \text{ mol de } \text{Cr}_2\text{O}_7^{2-} \longrightarrow 6\text{Fe}^{2+}$$

$$7,95 \times 10^{-4} \longrightarrow y$$

$$y = 4,77 \times 10^{-3} \text{ mols de } \text{Fe}^{2+}$$

$$1 \text{ mol de } \text{Fe}_2\text{O}_3 \longrightarrow 2 \text{ mols de } \text{Fe}^{2+}$$

$$z \longrightarrow 4,77 \times 10^{-3} \text{ mols}$$

$$z = 2,40 \times 10^{-3} \text{ mols de } \text{Fe}_2\text{O}_3$$

$$1 \text{ mol de } \text{Fe}_2\text{O}_3 \longrightarrow 160 \text{ g}$$

$$2,40 \times 10^{-3} \longrightarrow w$$

$$w = 0,3815 \text{ g de } \text{Fe}_2\text{O}_3$$

$$0,4831 \text{ g} \longrightarrow 100 \%$$

$$0,3815 \text{ g} \longrightarrow x$$

$$x \cong 78,00 \% \text{ m/m de } \text{Fe}_2\text{O}_3$$