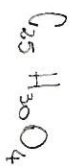


1. 100 g de oxímido — 0,002 g
500 g de oxímido — x

$$x = 0,01 \text{ g de oxímido}$$



$$25 \times 12 + 30 \times 1 + 4 \times 16 = 384 \text{ g/mol}$$

$$\begin{array}{l} 1 \text{ mol} \text{ — } 384 \text{ g} \text{ — } 6 \times 10^{23} \text{ moléculas} \\ 901 \text{ g} \text{ — } y \end{array}$$

$$y \approx 1,5 \times 10^{19} \text{ moléculas} \quad \textcircled{c}$$

2. 1 mol de qualquer coisa tem 6×10^{23} átomos
ou íons

$$\begin{array}{l} 2 \text{ mols de } \text{C}_{25}\text{H}_{30}\text{O}_4 \text{ tem } 12 \times 10^{24} \text{ moléculas de} \\ \text{oxímido.} \quad \textcircled{b} \end{array}$$

$$\text{CO} \rightarrow \text{Massa Molar } 1 \times 12 + 1 \times 16 = 28 \text{ g/mol}$$

$$\begin{array}{l} 1 \text{ mol} \text{ — } 28 \text{ g} \text{ — } 6 \times 10^{23} \text{ moléculas} \\ 5 \times 10^9 \text{ g} \text{ — } x \end{array} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} x = 1,05 \times 10^{32} \quad \textcircled{a}$$

$$1 \text{ tonelada} \rightarrow 10^3 \text{ kg} \quad 1 \text{ kg} \rightarrow 10^3 \text{ g} \quad 10^3 \rightarrow 10^9 \text{ g}$$

4. Gráfico e carbons (Massa Molar 12 g/mol)

$$\begin{array}{l} 1 \text{ mol} \text{ — } 12 \text{ g} \text{ — } 6,02 \times 10^{23} \text{ átomos} \\ 0,001 \text{ g} \text{ — } x \end{array}$$

$$x = 5 \times 10^{19} \text{ átomos} \quad \textcircled{a}$$

5. Ácido Sulfúrico = H_2SO_4

$$1 \text{ molécula} \text{ — } 7 \text{ átomos}$$

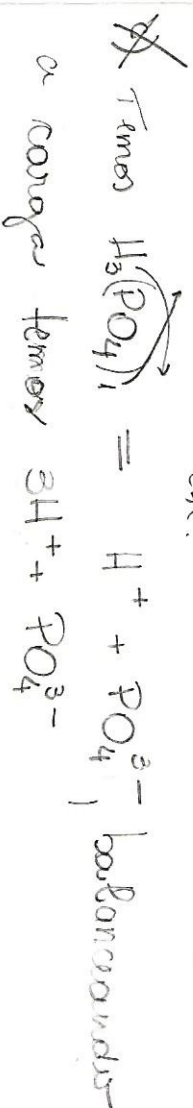
$$\begin{array}{l} 6 \times 10^{23} \text{ moléculas} \text{ — } x \\ (1 \text{ mol}) \end{array}$$

$$x = 7 \cdot 6 \times 10^{23} \text{ átomos/mol} \quad \textcircled{b}$$

6. 1 mol de H_3PO_4

$$\begin{array}{l} \text{a) Na verdade temos } 3 \cdot 6 \times 10^{23} \text{ átomos de hidrogénios} \\ 1 \cdot 6 \times 10^{23} \text{ átomos de fósforo} \end{array}$$

b) Nostrum, ha- 3 6×10^{23} átomos de hidrogénios
etc.



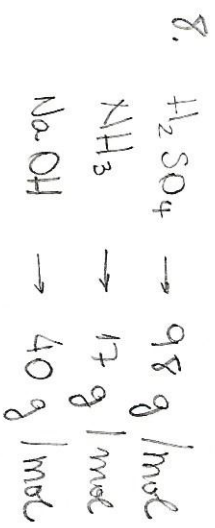
7. 42 mg Asparfame = 6,8 g Açu car
(300 g/mol) (340 g/mol)

$$\begin{array}{rcl} 1 \text{ mol} & \text{---} & 300 \text{ g} \\ x & \text{---} & 42 \times 10^{-3} \text{ g} \end{array} \quad \begin{array}{rcl} 1 \text{ mol} & \text{---} & 340 \text{ g} \\ y & \text{---} & 6,8 \text{ g} \end{array}$$

$$x = 0,14 \times 10^{-3} \text{ mol} \quad y = 0,02 \text{ mol}$$

$$\frac{0,02 \text{ mol açúcar}}{0,14 \times 10^{-3} \text{ mol asparfame}} = \frac{0,14 \times 10^{-3} \text{ açúcar}}{140}$$

(d)



$$\left. \begin{array}{rcl} 98 \text{ g} & \text{---} & 1 \text{ mol} \\ 5 \times 10^{12} \text{ g} & \text{---} & x \end{array} \right\} x \approx 5 \times 10^{10} \text{ mol}$$

$$\left. \begin{array}{rcl} 17 \text{ g} & \text{---} & 1 \text{ mol} \\ 1,2 \times 10^{12} \text{ g} & \text{---} & y \end{array} \right\} y \approx 1 \times 10^{15} \text{ mol ou } 10 \times 10^{10} \text{ mol}$$

$$\left. \begin{array}{rcl} 40 \text{ g} & \text{---} & 1 \text{ mol} \\ 1 \times 10^{12} \text{ g} & \text{---} & z \end{array} \right\} z \approx 2,5 \times 10^{10} \text{ mol}$$



9. 200 g de Hg --- 1 mol
 x --- $2,1 \times 10^{-7} \text{ mol}$

$$x = 4,2 \times 10^{-5} \text{ g de Hg}^{2+}$$

$$\frac{4,2 \times 10^{-5} \text{ g de Hg}^{2+}}{25 \text{ g de água}} = \frac{4,2 \times 10^{-5} \text{ g de Hg}^{2+}}{0,025 \text{ kg de água}}$$

$$= 1,68 \times 10^{-3} \text{ g de Hg}^{2+} / \text{kg de água}$$

Estor acima do permitido!