

# ACTIVIDAD

1. Obtenga la fórmula empírica y molecular, Carbono, hidrógeno y oxígeno 22,4%, 4% y 12,8% y masa de 1000g.
2. Obtenga la fórmula empírica y molecular si hay Carbono 40%, hidrógeno 6,7% y oxígeno 53,3% con una masa de 90g.

## Solución

• Mol C =  $\frac{48g}{12g/mol} = 4 \text{ mol}$   $0,4/4 = 10$

• Mol H =  $\frac{4g}{1g/mol} = 4 \text{ mol}$   $0,4/4 = 10$

• Mol N =  $\frac{22,4g}{14g/mol} = 1,6 \text{ mol}$   $1,6/0,4 = 4$

• Mol S =  $\frac{12,8g}{32g/mol} = 0,4 \text{ mol}$   $0,4/0,4 = 1$

Mol O =  $\frac{12,8g}{16g/mol} = 0,8 \text{ mol}$   $0,8/0,4 = 2$

**Empírica:**  $C_{10}H_{10}N_4S_2O_2$

**Molecular:**  $C_{40}H_{40}N_{16}S_4O_8$

$$\frac{1000g}{250} = 4 \quad \begin{array}{l} C = 12 \times 10 = 120 \\ H = 1 \times 10 = 10 \\ N = 14 \times 4 = 56 \\ S = 32 \times 2 = 64 \\ O = 16 \times 2 = 32 \end{array} = 280$$

2.  $\text{Mol} = C = \frac{40g}{12g/mol} = 3,33 \text{ mol} \quad 3,33/3,33 = 1$

$\text{Mol} = H = \frac{6,7g}{1g/mol} = 6,7 \text{ mol} \quad 6,7/3,33 = 2$

$\text{Mol} = O = \frac{53,3g}{16g/mol} = 3,33 \text{ mol} \quad 3,33/3,33 = 1$

$$\begin{array}{r} 90g \\ \hline 30 \end{array} = 3 \quad \begin{array}{l} C = 12 \times 1 = 12 \\ H = 1 \times 2 = 2 \\ O = 16 \times 1 = 16 \end{array} \quad \begin{array}{l} C = 3 \times 1 = 3 \\ H = 3 \times 2 = 6 \\ O = 3 \times 1 = 3 \end{array}$$

**Empírica:**  $CH_2O$

**Molecular:**  $C_3H_6O_3$