

Ejercicios

1. Obtenga la forma empírica molecular si hay carbono 40%, hidrógeno 6.7% y oxígeno 53.3% con una masa de 90 gramos

2. Genere la fórmula molecular y empírica con 37.8% de carbono 6.3% de hidrógeno y 55.8% de cloro con una masa de 127 gramos

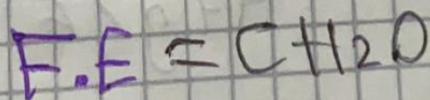
Solución

1

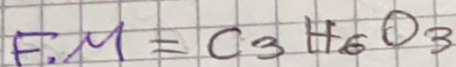
$$C = 40 / 12 \text{ g/mol} = 3 \text{ mol} / 3 = 1$$

$$H = 6.7 / 1 \text{ g/mol} = 6.7 \text{ mol} / 3 = 2$$

$$O = 53.3 / 16 \text{ g/mol} = 3.331 / 3 = 1$$



$$\begin{aligned} \text{C} &= 12 \times 1 = 12 \\ \text{H} &= 1 \times 2 = 2 \\ \text{O} &= 16 \times 1 = \frac{16}{29} \end{aligned} \quad 20/29$$



2.

$$\text{C} = 37.8\%$$

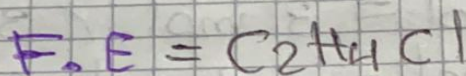
$$\text{H} = 6.3\%$$

$$\text{Cl} = 55.8\%$$

$$\text{C} = 37.8 / 12 \text{ g/mol} = 3.15 \text{ mol} / 1.5 = 2$$

$$\text{H} = 6.3 / 1 \text{ g/mol} = 6.3 \text{ mol} / 1.5 = 4$$

$$\text{Cl} = 55.8 / 35 \text{ g/mol} = 1.57 \text{ mol} / 1.5 = 1$$



$$\text{C} = 12 \times 2 = 24$$

$$\text{H} = 1 \times 4 = 4$$

$$\text{Cl} = 35 \times 1 = \frac{35}{63}$$

$$47 \text{ g} / 6.3 = 2$$

$$\text{C} \quad 2 \times 2 = 4$$

$$\text{H} \quad 2 \times 4 = 8$$

$$\text{Cl} \quad 2 \times 1 = 2$$

