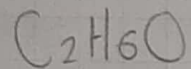


# EJERCICIOS DE MOLARIDAD

① Calcula la molaridad de alcohol etílico ( $C_2H_6O$ ) si se tiene 82,5g en volumen de 0,45L.



$$\text{Masa} = 82,5g$$

$$\text{Volumen} = 0,45L$$

$$PM = 46$$

$$C = 12 \times 2 = 24$$

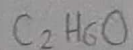
$$H = 1 \times 6 = 6$$

$$O = 16 \times 1 = 16$$

$$\hline 46$$

$$M = \frac{m}{(PM)(V)}$$

$$M = \frac{82,5}{(46)(0,45)} = \frac{82,5}{20,7} = 3,98 \text{ M}$$



Masa = 82,5g

Volumen = 0,45L

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

$\text{H} = 1 \times 6 = 6$

$\text{O} = 16 \times 1 = 16$

46

$$\frac{82,5 \text{ g}}{46 \text{ g/mol}} = 1,793 \text{ moles}$$

$$\frac{1,793 \text{ m}}{0,45 \text{ L}} = 3,98 \text{ M}$$

$$m = \frac{n}{v}$$

② Obtenga la molaridad de una sustancia con 4,78 mol y en volumen 7,000 ml.

Masa = 4,78 moles

$7,000 = 1000 = 7 \text{ L}$

Volumen = 7,000 ml = 7L

$$\frac{4,78}{7 \text{ L}} = 0,682 \text{ M}$$

$$m = \frac{n}{v}$$

③ Calcule la molaridad M de una solución que contiene 3,65 gramos (HCl) en 2,00 litros de solución



Masa = 3,65g

Volumen = 2L

PM = 36

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

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

36

$$M = \frac{m}{(\text{PM})(v)}$$

$$M = \frac{3,65}{(36)(2)} = \frac{3,65}{72} = 0,050 \text{ M}$$

Masa = 3,65g  
Volumen = 2l

$$m = \frac{n}{v}$$

$$\begin{aligned} H &= 1 \times 1 = 1 \\ Cl &= 1 \times 35 = 35 \\ \hline &36 \end{aligned}$$

$$\frac{3,65g}{36g/mol} = 0,101 \text{ moles}$$

$$\frac{0,101m}{2l} = 0,050M$$

① Calcule la molaridad de una solución que contiene 49,04g de  $(H_2SO_4)$  en 250ml de solución.

$$250 \div 1000 = 0,25l$$

$$M = \frac{m}{(PM)(v)}$$

$H_2SO_4$   
Masa = 49,04g  
Volumen = 250ml = 0,25l  
PM = 98

$$\begin{aligned} H &= 2 \times 1 = 2 \\ S &= 1 \times 32 = 32 \\ O &= 4 \times 16 = 64 \\ \hline &98 \end{aligned}$$

$$M = \frac{49,04}{(98)(0,25)} = \frac{49,04}{24,5} = 2M$$

$H_2SO_4$

$$\begin{aligned} H &= 2 \times 1 = 2 \\ S &= 1 \times 32 = 32 \\ O &= 4 \times 16 = 64 \\ \hline &98 \end{aligned}$$

$$m = \frac{n}{v}$$

$$\frac{49,04g}{98g/mol} = 0,500 \text{ moles}$$

$$\frac{0,500m}{0,25l} = 2M$$