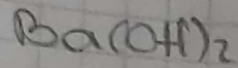


## Normalidad

### Ejemplo

1. Tenemos  $\text{Ba}(\text{OH})_2$  con 210 gramos en 500 ml de solución. Calcula la normalidad química



$$m = 210 \text{ g}$$

$$V = 500 \text{ ml} / 1000 = 0.5 \text{ L}$$

$$PM = 171 \text{ g/mol}$$

$$N = ?$$

$$\text{Ba} = 1 \times 137 = 137$$

$$\text{O} = 2 \times 16 = 32$$

$$\text{H} = 2 \times 1 = 2$$

$$\underline{171 \text{ g/mol}}$$

$$N = \frac{(m)(eq)}{(PM)(V)} = \frac{(210)(2)}{(171)(0.5)} = \frac{420}{85.5}$$

$$N = 4.91$$

2. Obten la Normalidad de 65.5 g de  $\text{H}_3\text{PO}_4$  en 250 ml

$$m = 65.5 \text{ g}$$

$$V = 250 \text{ ml} / 1000 = 0.25 \text{ L}$$

$$PM = 98 \text{ g/mol}$$

$$eq = 3$$

$$PM = \text{H} = 3 \times 1 = 3$$

$$\text{P} = 1 \times 31 = 31$$

$$\text{O} = 4 \times 16 = 64$$

$$\underline{98 \text{ g/mol}}$$

$$N = \frac{(m)(eq)}{(PM)(V)} = \frac{(65.5)(3)}{(98)(0.25)} = \frac{196.5}{24.5} = 8.020$$

## Ejercicios

1. Obten la normalidad de  $\text{Al}(\text{OH})_3$  con 450 ml y 950 gramos

$$m = 950 \text{ g}$$

$$V = 450 \text{ ml} / 1000 = 0.45 \text{ L}$$

$$PM = 111 \text{ g/mol}$$

$$eq = 3$$

$$PM = \text{Al} = 1 \times 27 = 27$$

$$\text{O} = 3 \times 16 = 48$$

$$\text{H} = 3 \times 1 = 3$$

$$\underline{111 \text{ g/mol}}$$

$$N = \frac{(m)(eq)}{(PM)(V)} = \frac{(950)(3)}{(111)(0.45)} = \frac{285}{49.95} = 5.7$$