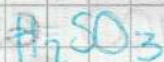


Composición porcentual

Comprender el procedimiento para generar la composición porcentual de los elementos de un compuesto

Ejemplo

1 Identificar la composición porcentual del ácido sulfuroso H_2SO_3



$$H: 2 \times 1 = 2 \div 82 = 0.024 \times 100 = 2.4\% H$$

$$S: 1 \times 32 = 32 \div 82 = 0.390 \times 100 = 39.0\% S$$

$$O: 3 \times 16 = 48 \div 82 = 0.585 \times 100 = 58.5\% O$$

82 g/mol

2 Identificar la composición porcentual del cloruro de etilo C_2H_5Cl

$$C: 2 \times 12 = 24 \div 65 = 0.369 \times 100 = 36.9\%$$

$$H: 5 \times 1 = 5 \div 65 = 0.076 \times 100 = 7.6\%$$

$$Cl: 1 \times 36 = 36 \div 65 = 0.553 \times 100 = 55.3\%$$

65 g/mol

Ejercicios

calcular la composición porcentual de

1 H_3PO_4 = ácido fosfórico

2 $Pb(OH)_4$ = hidróxido de plomo (IV)

3 $Ni_2(CO)_3$ = carbonato de níquel III

4 H_2SO_4 = ácido sulfúrico

5 H_2O = agua

Solución

1 H_3PO_4

$$H \quad 1 \times 3 = 3 \div 98 = 0,030 \times 100 = 3\%$$

$$P \quad 31 \times 1 = 31 \div 98 = 0,316 \times 100 = 31,6\%$$

$$O \quad 16 \times 4 = 64 \div 98 = 0,653 \times 100 = 65,3\%$$

peso
atómico = 98 g/mol

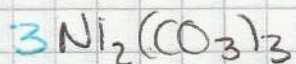
2 $Pb(OH)_4$

$$Pb = 1 \times 207 = 207 \div 275 = 0,752 \times 100 = 75,2\%$$

$$O = 4 \times 16 = 64 \div 275 = 0,232 \times 100 = 23,2\%$$

$$H = 4 \times 1 = 4 \div 275 = 0,014 \times 100 = 1,4\%$$

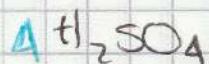
275 g/mol



$$\text{Ni} = 2 \times 59 = 118 \div 298 = 0,395 \times 100 = 39,5\%$$

$$\text{C} = 3 \times 12 = 36 \div 298 = 0,120 \times 100 = 12\%$$

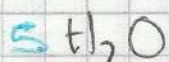
$$\text{O} = 9 \times 16 = \frac{144}{298 \text{ g/mol}} \div 298 = 0,483 \times 100 = 48,3\%$$



$$\text{H} = 2 \times 1 = 2 \div 98 = 0,020 \times 100 = 2\%$$

$$\text{S} = 1 \times 32 = 32 \div 98 = 0,326 \times 100 = 32,6\%$$

$$\text{O} = 4 \times 16 = \frac{64}{98 \text{ g/mol}} \div 98 = 0,653 \times 100 = 65,3\%$$



$$\text{H} = 2 \times 1 = 2 \div 18 = 0,111 \times 100 = 11,1\%$$

$$\text{O} = 1 \times 16 = \frac{16}{18 \text{ g/mol}} \div 18 = 0,888 \times 100 = 88,8\%$$