

FÍSICA Y QUÍMICA - 3º ESO

LA DIVERSIDAD DE LA MATERIA - HOJA 9

[1] $m_D = 0,5 \text{ kg} = 500 \text{ g}$ ¿ m_S ?

$C = 27\%$

$$C = \frac{m_S \cdot 100}{m_D} \rightarrow C \cdot m_D = m_S \cdot 100 \rightarrow$$

$$\rightarrow \frac{C \cdot m_D}{100} = m_S$$

$$m_S = \frac{C \cdot m_D}{100} = \frac{27 \cdot 500}{100} = \underline{\underline{135 \text{ g}}}$$

[2] $m_S = 16 \text{ g}$ ¿ V_D ?

$C = 34 \text{ g/l}$

$$C = \frac{m_S}{V_D} \rightarrow C \cdot V_D = m_S \rightarrow$$

$$\rightarrow V_D = \frac{m_S}{C} = \frac{16}{34} = 0,4706 \text{ l} = 470,6 \text{ ml}$$

[3] $C = 35\%$ ¿ m_S ?

$m_D = 50 \text{ g}$

$$C = \frac{m_S \cdot 100}{m_D} \rightarrow m_S = \frac{C \cdot m_D}{100}$$

$$m_S = \frac{35 \cdot 50}{100} = \underline{\underline{17,5 \text{ g}}}$$

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$$C = 0,52\%$$

$$m_s = 60 \text{ mg} = 0,06 \text{ g}$$

¿ m_D ?

$$C = \frac{m_s \cdot 100}{m_D} \rightarrow C \cdot m_D = m_s \cdot 100 \rightarrow$$

$$m_D = \frac{m_s \cdot 100}{C} = \frac{0,06 \cdot 100}{0,52} = \boxed{11,54 \text{ g}}$$

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a) $V_D = 100 \text{ ml} = 0,1 \text{ l}$

$$C = \frac{m_s}{V_D} = \frac{4,8}{0,1} = 48 \text{ g/l} \quad \text{glúcidos}$$

$$C = \frac{3,5}{0,1} = 35 \text{ g/l} \quad \text{lipidos}$$

$$C = \frac{3,2}{0,1} = 32 \text{ g/l} \quad \text{proteínas.}$$

b) $m_s = 2 \text{ g}$ ¿ V_D ?

$$C = 48 \text{ g/l}$$

$$C = \frac{m_s}{V_D} \rightarrow V_D = \frac{m_s}{C} = \frac{2}{48} = 0,0417 \text{ l} = \boxed{41,7 \text{ ml}}$$

c) $V_D = 250 \text{ ml} = 0,25 \text{ l}$

$$C = 32 \text{ g/l}$$

$$C = \frac{m_s}{V_D} \rightarrow m_s = C \cdot V_D = 32 \cdot 0,25 = \boxed{8 \text{ g}}$$

$$\boxed{6} \quad C = 28\% \text{ en masa.}$$

$$d = 1,15 \text{ g/cm}^3$$

$$V_D = 50 \text{ ml} = 50 \text{ cm}^3$$

Calcular cuánto masa de disolución hay en los 50 cm^3 que he pasado del frasco.

$$d = \frac{m}{V} \rightarrow m = d \cdot V = 1,15 \cdot 50 = \underline{57,5 \text{ g}}$$

$$m_D = 57,5 \text{ g}$$

$$C = 28\%$$

¿ m_S ?

$$C = \frac{m_S \cdot 100}{m_D}$$

$$m_S = \frac{C \cdot m_D}{100} = \frac{28 \cdot 57,5}{100} = \underline{16,1 \text{ g}}$$