



LA MOLE UNITE DE QUANTITE DE MATIERE EXERCICES N°1 CORRECTION

n, m...

Corps	Formule	Masse molaire (g.mol ⁻¹)	Quantité de matière (mol)	Masse du corps (g)
Ammoniac (g)	NH ₃	17,0	4,0.10 ⁻²	0,68
Aspirine (s)	C ₉ H ₈ O ₄	180	2,78.10 ⁻⁴	5,00.10 ⁻²
Eau (l)	H ₂ O	18,0	0,20	3,6

La solution de Picsou

- $C_{m0} = \frac{m_0}{V_0} = \frac{8,5}{200.10^{-3}} = 42,5 \text{ g.L}^{-1}$
- $n_0 = \frac{m_0}{M_0} = \frac{8,5}{170} = 5,0.10^{-2} \text{ mol}$
- $C_0 = \frac{n_0}{V_0} = \frac{5,0.10^{-2}}{200.10^{-3}} = 0,25 \text{ mol.L}^{-1}$ ou $C_0 = \frac{C_{m0}}{M_0} = \frac{42,5}{170} = 0,25 \text{ mol.L}^{-1}$
- $n_1 = C_0 V_1 = 0,25 \times 50.10^{-3} = 1,3.10^{-2} \text{ mol}$

Quelques calculs avant de partir en camping

- $M_{\text{butane}} = 4M(\text{C}) + 10M(\text{H}) = 4 \times 12,0 + 10 \times 1,00 = 58,0 \text{ g.mol}^{-1}$
- $n_{\text{butane}} = \frac{m_{\text{butane}}}{M_{\text{butane}}} = \frac{420}{58,0} = 7,24 \text{ mol}$
- $V_l = \frac{m_{\text{butane}}}{\rho_{\text{butane liquide}}} = \frac{420}{0,601} = 700 \text{ mL}$
- $V_g = n_{\text{butane}} V_M = 7,24 \times 24 = 1,7.10^2 \text{ L}$