

Problema 1125: En un recipiente aislado introducimos 350g de agua a 15°C y 650g de agua a 80°C. Calcula la temperatura de equilibrio.

|                        |                        |
|------------------------|------------------------|
| $m_1=350\text{g}$      | $m_2=650\text{g}$      |
| $\text{H}_2\text{O}$   | $\text{H}_2\text{O}$   |
| $T_1=15^\circ\text{C}$ | $T_2=80^\circ\text{C}$ |

$$T_{\text{eq}} = ?$$

$$Q_{\text{cedido}} + Q_{\text{absorbido}} = 0$$

$$m_2 \cdot c_{\text{H}_2\text{O}} \cdot (T_{\text{eq}} - T_2) + m_1 \cdot c_{\text{H}_2\text{O}} \cdot (T_{\text{eq}} - T_1) = 0$$

$$0,650\text{kg} \cdot c_{\text{H}_2\text{O}} \cdot (T_{\text{eq}} - 80^\circ\text{C}) + 0,350\text{kg} \cdot c_{\text{H}_2\text{O}} \cdot (T_{\text{eq}} - 15^\circ\text{C}) = 0$$

$$c_{\text{H}_2\text{O}} [0,650\text{kg} \cdot (T_{\text{eq}} - 80^\circ\text{C}) + 0,350\text{kg} \cdot (T_{\text{eq}} - 15^\circ\text{C})] = 0$$

$$0,650\text{kg} \cdot (T_{\text{eq}} - 80^\circ\text{C}) + 0,350\text{kg} \cdot (T_{\text{eq}} - 15^\circ\text{C}) = 0$$

$$0,65T_{\text{eq}} - 52 + 0,35T_{\text{eq}} - 5,25 = 0$$

$$T_{\text{eq}} - 57,25 = 0$$

$$\underline{\underline{T_{\text{eq}} = 57,25^\circ\text{C}}}$$