

3. Příklad Kalorimetrická rovnice

5 kg ledu -10°C smícháme s 2 kg páry 130°C
 $t_x = ?$

$$\begin{array}{l} +130^{\circ}\text{C} \text{ 2 kg páry } t_3 = 130^{\circ}\text{C} \quad c_3 = 2010 \frac{\text{J}}{\text{kg K}} \\ 100^{\circ}\text{C} \quad L_v = 2260000 \frac{\text{J}}{\text{kg}} \\ \quad \quad c_2 = 4186 \frac{\text{J}}{\text{kg K}} \\ 0^{\circ}\text{C} \quad L_f = 335000 \frac{\text{J}}{\text{kg}} \end{array}$$

$$m_1 = 5 \text{ kg} \quad c_1 = 2100 \frac{\text{J}}{\text{kg K}}$$

$$\begin{aligned} m_3 c_3 (t_3 - t_{100}) + m_3 L_v + m_3 c_2 (t_{100} - \boxed{t_x}) &= \\ = m_1 c_1 (\underbrace{t_0 - t_1}_{\text{pozor}}) + m_1 L_f + m_1 c_2 (\boxed{t_x} - t_0) \end{aligned}$$

$- (-10^{\circ}\text{C}) = +10^{\circ}\text{C}$

Hledáme t_x

Balance $Q_3 = m_3 c_3 (t_3 - t_{100})$

$$Q_v = m_3 L_v$$

$$Q_1 = m_1 c_1 (t_0 - t_1)$$

$$Q_f = m_1 L_f$$