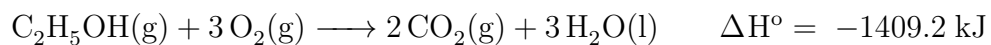


WORKSHEET 2 - QUESTION 3



$$Q = -\Delta\text{H}$$

$$Q = 1409.2 \text{ kJ/mol C}_2\text{H}_5\text{OH}$$

$$5.00 \text{ g C}_2\text{H}_5\text{OH} \times \frac{1 \text{ mol C}_2\text{H}_5\text{OH}}{46.08 \text{ g C}_2\text{H}_5\text{OH}} \times \frac{1409.2 \text{ kJ}}{1 \text{ mol C}_2\text{H}_5\text{OH}} \times \frac{1000 \text{ J}}{1 \text{ kJ}} = 152908 \text{ J}$$

$$Q = 152908 \text{ J}$$

$$m = 4.0 \text{ L} \Rightarrow 4\,000 \text{ mL} \Rightarrow 4\,000 \text{ g}$$

$$c = 4.184 \frac{\text{J}}{\text{g}^\circ\text{C}}$$

$$\Delta\text{T} = ?$$

$$\Delta\text{T} = \frac{Q}{mc}$$

$$\Delta\text{T} = \frac{152908 \text{ J}}{4\,000 \text{ g} \times 4.184 \frac{\text{J}}{\text{g}^\circ\text{C}}}$$

$$\Delta\text{T} = 9.136 \text{ }^\circ\text{C}$$
