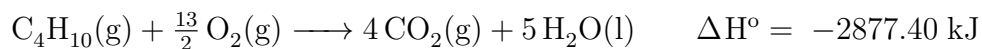


WORKSHEET 2 - QUESTION 2

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$$Q = -\Delta H$$

$$Q = 2877.40 \text{ kJ/mol C}_4\text{H}_{10}$$

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$$12.5 \text{ kg C}_4\text{H}_{10} \times \frac{1000 \text{ g C}_4\text{H}_{10}}{1 \text{ kg C}_4\text{H}_{10}} \times \frac{1 \text{ mol C}_4\text{H}_{10}}{58.14 \text{ g C}_4\text{H}_{10}} \times \frac{2877.40 \text{ kJ}}{1 \text{ mol C}_4\text{H}_{10}} \times \frac{1000 \text{ J}}{1 \text{ kJ}} = 618636051 \text{ J}$$

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$$Q = 618636051 \text{ J}$$

$$m = ?$$

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

$$\Delta T = (27.50 - 25.00) ^\circ\text{C} = 2.50 ^\circ\text{C}$$

$$m = \frac{Q}{c\Delta T}$$

$$m = \frac{618636051 \text{ J}}{4.184 \frac{\text{J}}{\text{g}^\circ\text{C}} \times 2.50 ^\circ\text{C}}$$

$$m = 5.9143 \times 10^7 \text{ g}$$

$$m = 59143 \text{ kg} \leftarrow \text{mass of water warmed}$$

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