1. How much heat is required to raise 5.45 g of copper from 25.0 °C to 37.5 °C? Please express your answer in joules (J), Calories (Cal), and also kilowatt-hours (kWh).

2. If a 150.0 g block of iron (Fe) at 65 °C is added to 500.0 mL of water at 25 °C, what is the final temperature of the mixture? Assume a density of 1.00 g/mL for water. Report to the nearest degree.
3. Nail polish is primarily made of a compound called acetone. If 100.0 mL of acetone is burned, how much heat is released? \( \Delta H \) for the combustion reaction is \(-1790 \text{ kJ/mol} \). The density of acetone is 0.788 g/mL. Please include the balanced chemical equation for the combustion.

\[
\text{O} \quad \overset{\text{H}_3\text{C} - \text{C} - \text{CH}_3}{\text{acetone}}
\]

4. Calculate the enthalpy change (\( \Delta H \)) for this reaction:

\[
\text{NO (g)} + \text{O (g)} \rightarrow \text{NO}_2 (g) \quad \Delta H = ?
\]

Using only the following information:

\[
\begin{align*}
\text{2 O}_3 (g) & \rightarrow 3 \text{ O}_2 (g) \quad \Delta H = -427 \text{ kJ/mol} \\
\text{O}_2 (g) & \rightarrow 2 \text{ O (g)} \quad \Delta H = +495 \text{ kJ/mol} \\
\text{NO (g)} + \text{O}_3 (g) & \rightarrow \text{NO}_2 (g) + \text{O}_2 (g) \quad \Delta H = -199 \text{ kJ/mol}
\end{align*}
\]