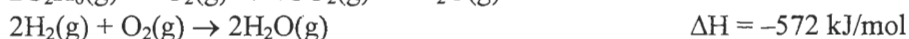
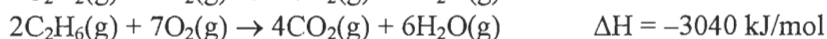


1. The heat of neutralization of HCl by NaOH is $\Delta H^\circ_{\text{rxn}} = -56.2 \text{ kJ/mol}$. How much heat is released when 125 mL of 1.750 M HCl is mixed with 195 mL of 0.667 M NaOH? (Be sure to write a balanced equation.)

2. Given the specific heat for aluminum is $0.900 \text{ J/g}\cdot^\circ\text{C}$, how much heat is released when a 3.8 g sample of Al cools from 450.0°C to 25°C . (atomic mass of Al is 26.98)

3. Calculate the heat released (kJ) in the reaction : $\text{C}_2\text{H}_2(\text{g}) + 2\text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_6(\text{g})$

Given:



4. The value of $\Delta H^\circ_{\text{rxn}}$ for the following reaction is -6535 kJ/mol .



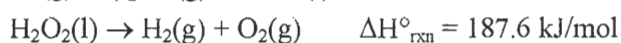
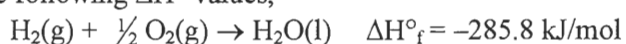
How many kilojoules of heat will be evolved during the combustion of 16.0 g of $\text{C}_6\text{H}_6(\text{l})$?

5. Find $\Delta H^\circ_{\text{rxn}}$ for the reaction



$$[\Delta H^\circ_f(\text{Ag}_2\text{S}(\text{s})) = -32.6 \text{ kJ/mol}; \Delta H^\circ_f(\text{H}_2\text{S}(\text{g})) = -20.5 \text{ kJ/mol}; \Delta H^\circ_f(\text{H}_2\text{O}(\text{l})) = -285.5 \text{ kJ/mol}]$$

6. Given the following ΔH° values,



calculate $\Delta H^\circ_{\text{rxn}}$ for the reaction $\text{H}_2\text{O}_2(\text{l}) \rightarrow \text{H}_2\text{O}(\text{l}) + \frac{1}{2} \text{O}_2(\text{g})$,