

Kevin Zhang

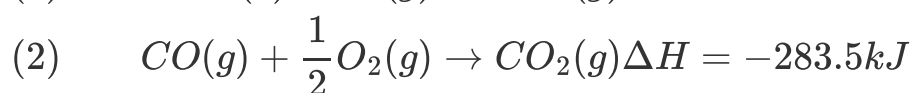
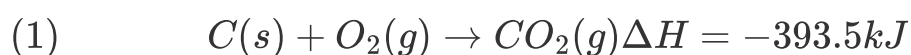
Prelab 2

Preliminary Questions

1. Define "heat of reaction". The heat of reaction is the total energy change in the reaction's system.
2. If 150 grams of water changes temperatures by 7.2°C , how much energy flows?

$$q_{\text{water}} = mc\Delta T = (150\text{g})(4.184\text{J/g}^{\circ}\text{C})(7.2^{\circ}\text{C}) = 4500\text{J}$$

3. Describe how you would make 150 mL of 1.0 M HCl solution starting with 2.0 M HCl. Combine 75 mL of 2.0 M HCl with 75 mL of water.
4. Use Hess's Law to calculate the heat of formation of CO(g) given the following information:



Find ΔH° for the reaction: $\text{C(s)} + \frac{1}{2}\text{O}_2(\text{g}) \rightarrow \text{CO(g)}$

$$\Delta H = \Delta H_{(1)} - \Delta H_{(2)} = (-393.5\text{kJ}) - (-283.5\text{kJ}) = -100\text{kJ}$$