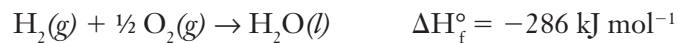


# ENTHALPY

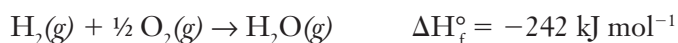
NAME \_\_\_\_\_

SECTION \_\_\_\_\_

1. The enthalpy for the formation of liquid water is shown below:



The enthalpy change for the formation of gaseous water is shown below:



Why is the enthalpy change different?

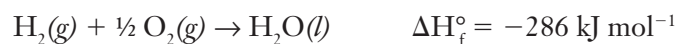
2. Given the enthalpy change for the two reactions below:



Calculate the enthalpy change for the reaction:

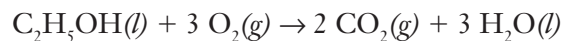


3. Using the following standard enthalpy of reaction data:



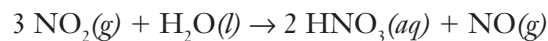
Calculate the heat of reaction for the combustion of 1 mol of ethane ( $\text{C}_2\text{H}_6$ ).

4. a. Using standard heats of formation, calculate the  $\Delta H^\circ$  for the following reaction:



- b. Determine the amount of heat released at constant pressure when 1.00 g of ethanol,  $\text{C}_2\text{H}_5\text{OH}$ , is combusted in excess oxygen.

5. Calculate the  $\Delta H^\circ$  for the following reaction:



6. The standard enthalpy of combustion to  $\text{CO}_2(g)$  and  $\text{H}_2\text{O}(l)$  at 25 °C of cyclohexane,  $\text{C}_6\text{H}_{12}(l)$ , is  $-3924 \text{ kJ/mol}$ . Calculate the standard heat of formation,  $\Delta H_f^\circ$ , of cyclohexane:

