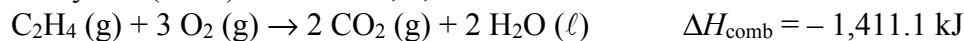


WKS
Thermochemical Equations

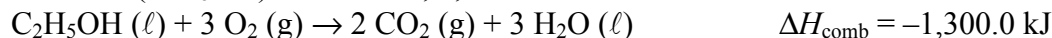
Name _____
Period _____

1. When 1 mol ethylene (C₂H₄) burns in air, 1,411.1 kJ is released:



How much heat is released when 89.2 g C₂H₄ is burned?

2. When 1 mol ethanol (C₂H₅OH) burns in air, 1,300.0 kJ is released:



How many grams of ethanol must be burned to release 2,850 kJ of heat?

Determine the ΔH per mole (molar heat of reaction) for the following processes and indicate if the process is exothermic or endothermic.

3. When a 16.9 gram sample of NaOH dissolves in 70.0 g of water, the temperature rises from 22.4°C to 86.6°C. Find ΔH_{rxn} in kJ/mol.



(a) $q_{\text{water}} =$

(b) $\text{mol}_{\text{reactant}} =$

(c) $\Delta H_{\text{rxn}} =$

4. When a 19.2 gram sample of KCN dissolves in 65.0 mL of water (remember that 1.00 mL H₂O = 1.00 g H₂O), the temperature drops from 28.1°C to 15.4°C. Find ΔH_{rxn} in kJ/mol.

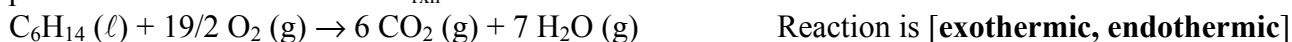


(a) $q_{\text{water}} =$

(b) $\text{mol}_{\text{reactant}} =$

(c) $\Delta H_{\text{rxn}} =$

5. When 27.14 g of hexane (C₆H₁₄) is burned in a calorimeter containing 5.65 liters of water, the water temperature rises 55.4 °C. Find ΔH_{rxn} in kJ/mol.



(a) $q_{\text{water}} =$

(b) $\text{mol}_{\text{reactant}} =$

(c) $\Delta H_{\text{rxn}} =$

r